PROPWASH

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Upcoming Events

Idaho Aviation Expo

Free Fly-In & Pancake Breakfast

Saturday, June 18th, 2022 (Father's Day Weekend) from 8-10 a.m. at Legacy Flight Museum

Give Us Your Surplus

- Base station to monitor CTAF/UNICOM frequencies in hangar
- Maintenance stand(s) or materials for same

Next Issue

Cessna 305C Bird Dog

Beechcraft Model 18

The Beechcraft Model 18 is a 6-11 place, twin-engine, low wing, conventional gear aircraft that was manufactured by the Beech Aircraft Corporation of Wichita, Kansas.

By the late 1930's, Beechcraft management speculated that a demand would exist for a new design dubbed the Model 18 which would have a military application, and increased the main production facilities. The design was mainly conventional for the time, including twin radial engines, all-metal semi-monocoque construction with fabric covered control surfaces and "tail-dragger" undercarriage, while less common were the twin tail fins. Upon an immediate glance they can be mistaken for the larger Lockheed Electra series of airliners which closely resemble the Model 18.

Related Articles

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Labor Day to Memorial Day
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10:00 AM to 4:00 PM

Memorial Day to Labor Day
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Contact: Joe Stephan
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To Schedule Events
Contact: Grant McClellan
208.690.0896

Location: 400 Airport Rd, Rexburg, Idaho 83440
Phone: 208.359.5905

Famous Twin Beech

Stanley Kramer's 'It's a Mad, Mad, Mad, Mad World' (1963) featured a Beech C-18S flying through a highway advertising billboard by stuntman Frank Tallman who learned his flying skills during WWII.

(Continued on Page 5)

The Beech 18 prototype first flew on 15 January 1937. Early production aircraft were either powered by two 330 hp Jacobs L-6's or 350 hp Wright R-760E's. The 450 hp Pratt & Whitney R-985's became the definitive engine from the prewar C-18's onwards.

The aircraft has used a variety of engines and has had a number of airframe modifications to increase gross weight and speed. At least one aircraft was modified to a 600 hp Pratt & Whitney R-1340 power plant configuration. With the added weight of approximately 200 lbs per engine, the concept of a Model 18 fitted with R-1340 engines was deemed unsatisfactory due to the weakest structural area of the aircraft being the engine mounts. With the exception of the center truss (the central component around which the entire aircraft is built), nearly every airframe component has been modified at one time or another.

Sold worldwide as a civilian executive, utility, cargo aircraft, and passenger airliner on tailwheels, nosewheels, skis, or floats, it was also used as a military aircraft.

Production got an early boost when Nationalist China paid the company US$750,000 for six M18R light bombers, but by the time of the U.S. entry into World War II, only 39 Model 18's had been sold, of which 29 were for civilian customers. Work began in earnest to create variants specifically for training military pilots, bombardiers and navigators. In World War II, over 90% of USAAF bombardiers and navigators trained in these aircraft.

During and after World War II, over

4,500 Beech 18s were used as light transport for the light bomber (for China), aircrew trainer (for bombing, navigation, and gunnery) , photo-reconnaissance, and "mother ship" for target drones.

- United States Army Air Forces (USAAF) C-45 Expeditor was used for light transport
- United States Army Air Forces (USAAF) AT-7 Navigator was used for navigation training
- United States Army Air Forces (USAAF) AT-11 Kansan was used for aircrew bombing and gunnery training
- United States Navy (USN) UC-45J Navigator, SNB-1 Kansan, and others.

Role:	Trainer & Utility aircraft
National origin:	United States
Manufacturer:	Beech Aircraft Corporation
First flight:	15 January 1937
Introduced:	1937
Primary users:	United States Army, United States Navy, Royal Air Force
Produced:	1937-1970
Number built:	More than 9,000 of 32 variants built
Unit cost 1952:	D18S $78,050.00 USD

The United States Air Force Strategic Air Command had Beechcraft Model 18 (AT-11 Kansans, C-45 Expeditors, F-2 Expeditors (the "F" standing for "Fotorecon"), and UC-45 Expeditors from 1946 until 1951. From 1951 to 1955 the USAF had many of its aircraft remanufactured with new fuselages, wing center sections and landing gear to take advantage of the improvements to the civil models since the end of World War II. Eventually 900 aircraft were remanufactured to be similar to the then-current Model D18S and given new designations, constructor's numbers (c/n) and Air Force serial Numbers (s/n). The USN had many of its surviving aircraft remanufactured as well, these being re-designated as SNB-5s and SNB-5Ps. The C-45 flew in US Air Force service until 1963, the USN retired their last SNB in 1972 while the U.S. Army flew their C-45s through 1976. In later years the military called these aircraft "bug smashers" in reference to their extensive use supplying mandatory flight hours for desk-bound aviators in the Pentagon.

In 1955, deliveries of the Model E18S commenced; the E18S featured a fuselage that was extended 6 inches (150 mm) higher for more headroom in the passenger cabin. All later Beech 18's (sometimes called Super 18's) featured this taller fuselage and some earlier models (including one AT-11) have been modified to this larger fuselage. The Model H18, introduced in 1963, featured optional tricycle undercarriage. Unusually, the undercarriage was developed for earlier-model aircraft under an STC by Volpar, and installed in H18s at

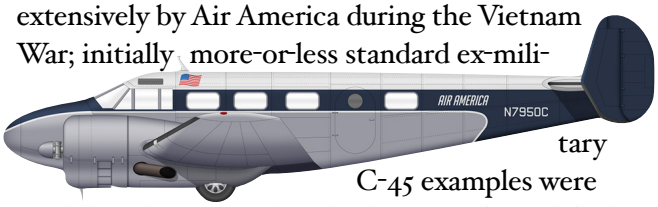
the factory during manufacture. A total of 109 H18's were built with tricycle undercarriage, and another 240 earlier-model aircraft were modified with the undercarriage.

Construction of the Beechcraft Model 18 ended in 1970 with the last, a Model H18, going to Japan Airlines. Beechcraft set a record that still stands

today for longest continuous production of a piston engine aircraft. Through the years, 32 variations of the basic design had flown, over 200 improvement modification kits were developed, and almost 8,000 aircraft had been built. Some aircraft were almost unrecognizable as having originated as a Beech 18. In one case the aircraft was modified to a triple tail, tri-gear, hump backed configuration and appeared similar to a miniature Lockheed Constellation. Another distinctive conversion was carried out by PacAero as the Tradewind. This featured a lengthened nose to accommodate tricycle undercarriage, and the Model 18's twin tails replaced with a single vertical stabilizer.

Some of the modifications created by independent engineering entrepreneurs were adopted in concept by the factory in later production versions in similar fashion to the current practice Harley Davidson copying of custom motorcycles built in the 1960's and 1970s.

Among the most notable cooling air and exhaust modifications were those engineered by Benjamin Israel while employed by Conrad Conversions. His modifications were based largely on creating a more efficient use of cooling air to reduce drag, a major detriment to cruise performance. Cruise performance was improved 10% or more at the same power settings as before the modifications. These modifications were largely copied on the factory produced G and H models. Beech 18's were used extensively by Air America during the Vietnam War; initially more-or-less standard ex-military C-45 examples were used, but then the airline had 12 aircraft modified by Conrad Conversions in 1963 and 1964 to increase performance and load-carrying capacity. The modified aircraft were known as Conrad Ten-Twos, as the maximum take-off weight (MTOW) was increased to 10,200 lbs. The increase was achieved by several airframe modifications, including increased horizontal stabilizer angle-of-incidence, redesigned landing gear doors, and aerodynamically-improved wing tips. Air America then had Volpar convert 14 aircraft to turboprop power, fitted with Garrett AiResearch TPE-331 engines; modified aircraft were called Volpar Turbo Beeches and also had a further increase in MTOW to 10,286 lbs.



A factory option at one point was the addition of JATO bottles on each engine nacelle which added the equivalent of 200 horsepower (150 kW) per engine for about 12 seconds. The most successful powerplant upgrade was that of the Pratt & Whitney Canada PT6 turbine engine and Hartzell propeller. This conversion was carried out by Hamilton Aircraft in the 1960's and 1970s as the Hamilton Westwind, successfully extending the commercial life of the aging aircraft. The Westwind II

(Continued from Page 2)

It was an outrageously dangerous stunt that required pinpoint accuracy. Some sources claimed that the billboard was covered with balsa wood while others stated that they were sheets of paper lined with linen.

Irrespective of the material, Tallman flew the plane exactly where he intended to but, unexpectedly, the impact damaged the aircraft, stopping one engine entirely. The pilot managed to get the plane back to the runway in one piece, but upon inspection noticed that the edges of the wings were stripped back and later remarked that the stunt was the closest he came to dying while flying.

Spar Problems

The Model 18 wing spar is a welded tubular steel assembly. Tube configuration and inadequate corrosion inhibitors, along with holes from after-market modifications, have allowed the spar to become susceptible to in-service corrosion and cracking. This prompted the FAA to issue an Airworthiness Directive in 1975, mandating the fitment of a spar strap to Model 18's which led to the retirement of a large number of Model 18's when owners determined that the aircraft were worth less than the cost of the modifications. Further mandated requirements include regular removal of the spar strap to be checked for cracks and corrosion and the spar to be X-rayed. In Australia the airworthiness authority has placed a life limit on the airframe, beyond which aircraft are not allowed to fly.

added a fuselage stretch to provide seating for 17 passengers, the Westwind III seated eight and used the remainder of the extra room for cargo, and the Westwind IV added an extra stretch and a large cargo door.

In the early postwar era, the Beech 18 was the pre-eminent "business aircraft" and "feeder airliner". Besides carrying passengers, its civilian uses have included aerial spraying, sterile bug release, fish seeding, dry ice cloud seeding, aerial fire-fighting, airborne mail pick up and drop, ambulance service, numerous movie productions, skydiving, freight, gun- and drug-smuggling, engine test bed, skywriting and banner towing.

A number of Model 18's were operated as passenger aircraft; the Model 18 was the first aircraft flown by Philippine Airlines, Asia's first and oldest airline.

The Beech 18 is the most modified U.S.-certified aircraft design, with over 200 Federal Aviation Administration (FAA) approved Supplemental Type Certificates (STC's) on record for the aircraft. Continuously produced from 1937 to November 1969 (over 32 years, a world record at the time), over 9,000 were built, making it one of the world's most widely used light aircraft. Many are now privately owned as prized collectibles, around the world, with 240 in the U.S. still on the FAA Aircraft Registry in August 2017. ✪

Beechcraft SNB-5 Navigator

N90265, Bu:23843 C/N: 6141 (Built 1943)

Beechcraft SNB-5 (TC-45J) Navigator is a U.S. Navy transport variant of the venerable Beechcraft Model 18 (or "Twin Beech" as it is also known) is a 6- to 11-seat, twin-engined, low-wing, tailwheel light aircraft manufactured by the Beech Aircraft Corporation of Wichita, Kansas.

The museum acquired this aircraft from the Chicago area (Dupage, DPA) in October 2016.

Built in Wichita, Kansas as AT-7C for USAAF S/N 43-33567 but not delivered but diverted to U.S. Navy with BuNo 23843 as an SNB-2C and later converted to an SNB-3.

Re-manufactured by Beechcraft as an SNB-5 for the U.S. Navy in 1953 and redesignated TC-45J.

6141	AT-7C	43-33567	USAAF: built Wichita KS	.44
			not delivered to USAAF, diverted to US Navy	
	SNB-2C	Bu23843	Tfd to US Navy as SNB-2C Bu23843	.44
	SNB-3		US Navy: remanufactured by Beech as SNB-3	
	SNB-5		US Navy: remanufactured by Beech as SNB-5	c53
	TC-45J		US Navy: type redesignation	18.9.62
		N90265	Lawson Aviation, Miami FL	66
			CofA issued	11.10.67
			E & I Inc, Fort Lauderdale FL	69/79
			N90265 noted Fort Lauderdale FL, "E & I Inc" and "LBI Ltd" titles	1.10.72
			N90265 noted Fort Lauderdale FL, "LBI Ltd"	15.10.75
			N90265 noted Ft Lauderdale FL, no titles, tailwheel in service	22.11.83
			Ronald M. Hankin	91
			N90265 at flyin Oshkosh WI, painted in US Marine Corps scheme as "USMC 26"	7.97
			N90265 noted Rockford IL	8.97
			Upstate Aviation Services, Wilmington DE	29.6.98/07
			N90265 at flyin Lakeland FL	10.4.01
			Eiler Aviation Consultants Inc, Terre Haute IN	1.12.07/15

Struct from U.S. Navy inventory in 1962.

Purchased privately by Lawson Aviation (Bellomy-Lawson?), Miami, Florida in 1966 and received civil registry as N90265. Certificate of Airworthiness issued October 10, 1967.

Bellomy-Lawson Aviation (BL), which was located along the Curtis Parkway, and was one of Miami's famous cargo operators which used a fleet of Douglas DC-6s. One author remembered in a post online that the BL ramps and platform where always covered with black oil and all the maintenance and loading where done in the open and this created lots of photo opportunities.

Bellomy-Lawson was one of the oldest DC-6 operators at Miami and its history went back a long time, when the two founding fathers, Harold Bellomy and Charles Lawson, first met in 1962 at L.B. Smith, a Miami based fixed based operator.

E & I Inc. 1978 Hollywood Int'l (Ft Lauderdale)
AirHistory.net, Photo Copyright ©Danny Grew

Early on both men setup a company which was converting former military transports such as C-60 lodestars into executive configuration. A year later LB Smith went into liquidation and Bellomy and Lawson joined forces and started their own company at Miami Airport. They decided to develop their own FAA approved DC-6 freight conversion and simultaneously BL began cargo operations in the Caribbean and lower Florida. They also had scheduled charter rights to Turks & Caicos Islands, Jamaica, Cayman Islands, Belize, Guatemala, Honduras and El Salvador.

E & I Inc. 1983 Hollywood Int'l (Ft Lauderdale)
Photo Copyright ©Peter Bent. Used by permission.

Bellomy-Lawson was not a real airline company as such, but more a holding company on behalf of two major elements of the air transport business. The airline operations was named 'Aerial Transit' which was a FAA Part 121 carrier, formed in 1983 after BL sold off its former airline company 'Challenge Air Transport.' At its peak BL operated nine DC-6s and a single Curtis C-46 and employed 80 people, including 24 pilots.

Registry transferred to E&I Inc., Fort Lauderdale, Florida 1969 through 1979. Titled as LBI, Ltd., 1972 through 1983.

Purchased or transferred to Ronald M. Hankin in 1991.

29 June 1998: To Upstate Aviation Services, Wilmington, DE with c/r N90265.

02 June 2006 Upstate Aviation Services, Wilmington, Delaware

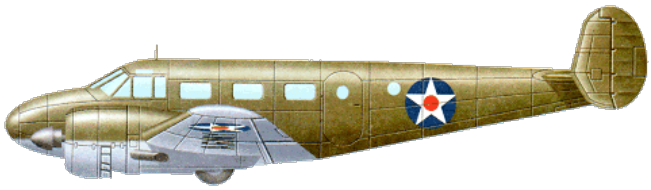
17 November 2006 Paul L. Walton, Indianapolis, Indiana

1 December 2007: To Eiler Aviation Consultants Inc, Terre Haute, IN.

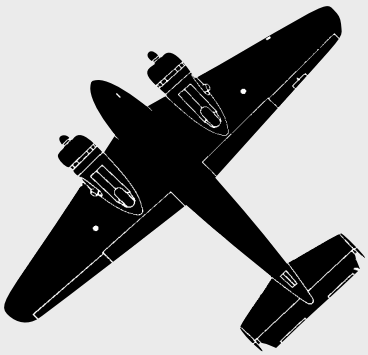
1 January 2011: Certificate of airworthiness for N90265 (SNB-5, 23843) issued.

2016: Legacy Flight Museum

Powered by two Pratt & Whitney R-985 Wasp Junior radial piston engines each putting out 450 hp. ✪



Specifications (UC-45 Expeditor)



General characteristics

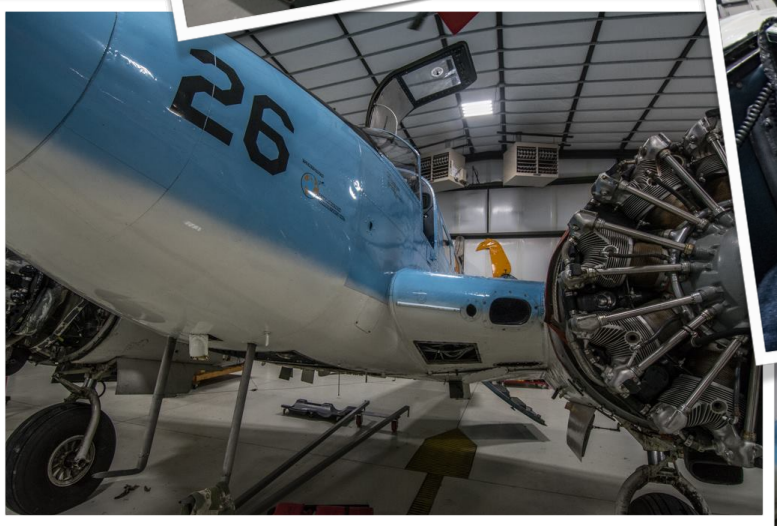
Crew: 2 pilots
Capacity: 6 passengers
Length: 34 ft 2 in (10.41 m)
Wingspan: 47 ft 8 in
Height: 9 ft 8 in (2.95 m)
Wing area: 349 ft2 (32.4 m2)
Empty weight: 6,175 lb (2,800 kg)
Loaded weight: 7,500 lb (3,400 kg)
Max takeoff weight: 8,727 lb (3,959 kg)
Powerplant: 2× Pratt & Whitney R-985-AN-1 "Wasp Junior" radial engines, 450 hp (336 kW) each

Performance

Maximum speed: 225 mph (195 knots, 360 km/h)
Range: 1,200 mi (1,000 NM, 1,900 km) at 160 mph (260 km/h)
Service ceiling: 26,000 ft (7,930 m)
Rate of climb: 1,850 ft/min (9.4 m/s)
Burn Rate: 40 gals/hr


MARINES


Exit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MARINES
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8th Graders Visit Museum

On Thursday, March 24th, groups from the South Fremont Junior High in nearby Ririe, Idaho visited the museum. Due to the large number of students, teachers, and chaperones involved, they came in three groups throughout the day.

Groups were presented with specially tailored lessons about WWII and the Allied victory in the air over Europe back in their classrooms while other groups were at the museum.

While at the museum, each sub-group was treated to fly-bys from a P-51D (Ole Yeller), T-6 Texan (Navy SNJ), and a Howard DGA-15 (NH-1).

Special thanks to Rachel Thomsen, their teacher who organized the outing, John Bagley and Todd Therp for flying, Robert Dennis for flight support, Kirk Lindholm for flight-line photography, and volunteers: Jim Dokus, Joe Law, Grant McClellan, David Macfarlane, Clay Walker, and Joe Stephan. Thanks also to Braydon Wilson from Channel 8 news for covering their visit.