

ARCHIVED REPORT

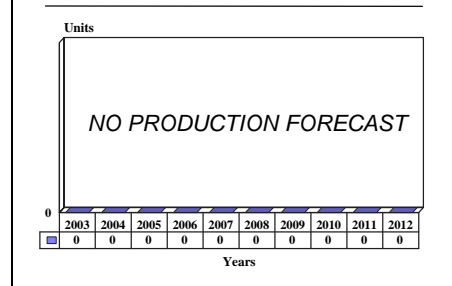
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Beech 1900 - Archived 8/2004

Outlook

- Production completed late 2002
- Unable to compete with new 30- to 50-seat regional jets and used 1900s

10 Year Unit Production Forecast
2003 - 2012



Orientation

Description. Pressurized, 19-passenger, twin-turboprop-powered regional commuter transport aircraft.

Sponsor. Beech Aircraft.

Contractor. Raytheon Aircraft Co, Beech Aircraft Corp, Wichita, Kansas, USA.

Status. Production of Model 1900D.

Total Produced. Through 2002, Beech produced 232 Model 1900C and 461 1900D aircraft, including prototypes.

Application. Short-range commuter/regional passenger transportation. Corporate/executive passenger transportation. All freight/small package services. Military applications include operational mission support, electronic intelligence, and VIP.

Price Range. Model 1900D is approximately \$5.2 million in 2003 US dollars.

Technical Data

(Model 1900D Basic)

Design Features. Low-wing design of primarily metal construction. Retractable tricycle landing gear with steerable nose gear.

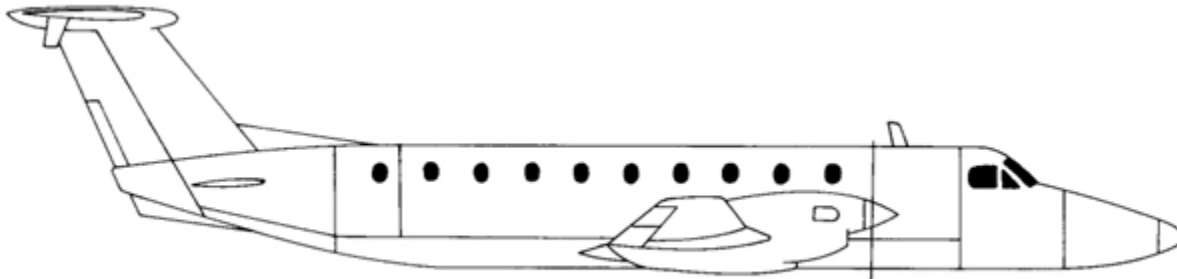
	<u>Metric</u>	<u>US</u>
Dimensions		
Length	17.647 m	57.9 ft
Height	4.541 m	14.9 ft
Wingspan	17.65 m	57.91 ft
Cabin length	10.375 m	34.042 ft
Cabin height	1.80 m	5.90 ft
Cabin width	1.39 m	4.56 ft

	<u>Metric</u>	<u>US</u>
Weight		
Basic empty weight	4,612 kg	10,167 lb
Max T-O	7,688 kg	16,950 lb
Maximum payload	2,132 kg	4,700 lb
Usable fuel	2,042 kg	4,502 lb
Capacities		
Usable fuel	2,525 liters	667 gal
Baggage volume	5.154 cu m	182 cu ft
Performance		
Cruise speed at 7,619 m (25,000 ft)	532 kmph	287 kt
Cruise speed at 6,100 m (20,000 ft)	539 kmph	291 kt
Range, 19 passengers, high speed cruise, IFR res, 25,000 ft alt	1,278 km	690 nm
Range, 19 passengers, VFR	2,557 km	1,380 nm
Rate of climb (at S/L)	710 m/min	2,330 ft/min
T-O distance ^(a)	671 m	2,200 ft

Propulsion
 Model 1900D (2) Pratt & Whitney Canada PT6A-67 turboprop engines rated approximately 954 kW (1,280 shp) driving the same Hartzell propeller system.

Seating
 Maximum 19 passengers, one x one. Seats are 17 inches wide with a 30-inch pitch.

^(a)20-degree flaps.



BEECH 1900

Source: Forecast International

BEECH 1900D

Source: Raytheon

Variants/Upgrades

1900C. Basic introductory model certificated in 1984.

1900C Exec-Liner. 15-passenger 1900 Executive version with the same range as its commuter stablemate, and featuring a dual bleed-air heating system and dual air conditioning system, new seat tracking system to save weight without sacrificing strength, flat floor design of Nomex cell faced with fiberglass, and two beverage bars. Beech subsequently offered an Exec-Liner version of the 1900D.

Model 1900D. Beech announced the much improved 1900D in 1989. Features include a cabin height of 71 inches, versus the 57 inches of the basic model. Other improvements include 1,280 shp PT6A-67 turboprops, winglets, fuselage strakes, and tail aerodynamic refine-

ments. The 1900D avionic system is one of the most advanced in its class and includes EFIS, dual flight directors, cockpit voice and data recorders, 2-inch standby gyro-horizons, and an optional Rockwell Collins APS-65H. Entered service in December 1991.

1900D Exec-Liner. Announced in October 1989, this is targeted at the corporate shuttle/interplant operations portion of the business market.

Military Derivatives. Model 1900s in specific military configurations have included versions for electronic surveillance, maritime patrol, ASW, and AEW roles. In The US Army (Air National Guard) procured 1900Cs designated C-12J to serve in the mission support role, receiving the first of these in September 1987.

Program Review

Background. The pressurized Model 1900 was announced in 1979 and shared about 40 percent parts commonality with Beech's Super King Air. Differences included a 15-foot fuselage stretch, and a 4.3 x 4.3 foot optional cargo door. In 1985 Beech announced development of a wet wing for the 1900, and this became standard equipment on aircraft number 75. This resulted in more than 250 gallons US of fuel in the wing

(58 percent more than the basic model), increasing range 67 percent.

1900D Development. Beech was especially conservative in the development and flight test phase of the Beech 1900D, since it was the first of the company's commuter aircraft to be certificated to the more stringent FAA FAR Part 23 Amendment 34 regulations. First flight was in March 1990 with certification in

March 1991. In February 1998, Beech handed over the 300th 1900D to French carrier Proteus Airlines.

Xi'an Aircraft Subcontract. In February 1997, Raytheon subcontracted China's Xi'an Aircraft Co to

provide 800 metal-bonded panel assemblies for the 1900D through the year 2001. The first eight assemblies were delivered to Wichita in August 1998.

Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Mid	1979	Design frozen, program announced
Sep	1982	Prototype first flight
Feb	1984	Certification and initial deliveries
Late	1984	Executive version available
Aug	1985	Egyptian Air Force places order for six aircraft
Late	1987	Wet wing deliveries begin with 75th aircraft
Late	1988	100th Model 1900 delivered to Rocky Mountain Airlines
Mar	1989	Beech announces Model 1900D
Mar	1990	First flight of Model 1900D
Mar	1991	1900D type certificated by FAA
Jun	1992	German certification and initial deliveries
End	2002	Production ended

Worldwide Distribution

For commercial distribution see the "Worldwide Inventories, Orders and Options" appendix.

Military inventories are as follows:

Egypt	8
US Air Force	33
US Army (C-12J)	110
Taiwan Air Force	11

Forecast Rationale

Beech 1900D shipments came to only 11 units in 2002, the same number as in 2001, and none were shipped in the first quarter of 2003. A 16-unit Air New Zealand order was scheduled for completion in late 2002 and, as no further orders have been announced, *Forecast International* believes the aircraft has gone out of production.

Raytheon had stated in early 2002 that the market had "changed dramatically." Raytheon also stated, "We've already slowed production but in the future we won't be doing that. The 1900 is coming to an end."

The 1900D had come under intense pressure from the new generation of 30- to 50-seat regional jets and this, plus the fact that Raytheon had to compete with used 1900s available on the used aircraft market, severely undercut demand for new aircraft.

Raytheon is itself enjoying a steady business in the refurbishment and remarketing of pre-owned 1900s, and in early 2003 its inventory of these aircraft numbered nearly 100 units.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR PRODUCTION

Aircraft	(Engine)	thru 02	<u>High Confidence Level</u>				<u>Good Confidence Level</u>				<u>Speculative</u>			Total 03-12
			03	04	05	06	07	08	09	10	11	12		
RAYTHEON AIRCRAFT CO														
BEECH 1900C (COMMUTER)	PT6A-65B	232	0	0	0	0	0	0	0	0	0	0	0	0
BEECH 1900C (MILITARY)	PT6A-65B	28	0	0	0	0	0	0	0	0	0	0	0	0
BEECH 1900D (COMMUTER)	PT6A-67D	461	0	0	0	0	0	0	0	0	0	0	0	0
BEECH 1900D (MILITARY)	PT6A-67D	3	0	0	0	0	0	0	0	0	0	0	0	0
Total Production		724	0	0	0	0	0	0	0	0	0	0	0	0