

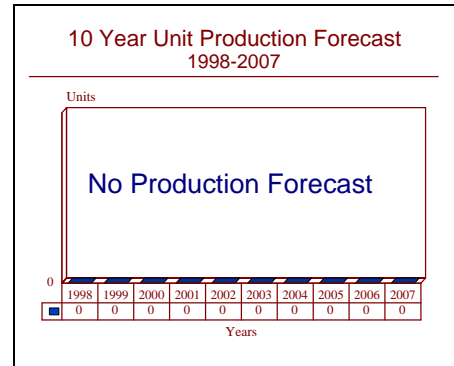
# ARCHIVED REPORT

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## Beech C-12/T-44 - Archived 8/99

### Outlook

- Final new production aircraft delivered in 1997
- Conversion in lieu of procurement to fill any further requirements



### Orientation

**Description.** Twin-turboprop powered utility and general purpose military transport aircraft, variants of the corporate King Air series.

**Sponsor.** US Army Aviation Systems Command, US Air Force Aeronautical Systems Division and US Navy Naval Air Systems Command.

**Contractors.** Raytheon Co, Beech Aircraft Corp, Wichita, KS, USA.

**Status.** Production deliveries resumed in July 1989. Aircraft are produced on the King Air lines in Wichita.

**Total Produced.** Through 1997 Beech delivered approximately 609 C-12 derivatives (see Forecast Chart for breakout by model/variant).

**Application.** General purpose cargo and personnel transportation, electronic communications intelligence gathering, flight training.

**Price Range.** C-12F, \$3.75 million (FY94 unit cost); RC-12K, \$22.3 million (FY93 unit procurement cost); T-44, \$3.0 million (FY90 unit cost).

### Technical Data

(C-12C)

	<u>Metric</u>	<u>US</u>
<b>Dimensions</b>		
Length overall	13.34 m	43.768 ft
Height	4.57 m	14.994 ft
Wingspan	16.61 m	54.497 ft
Cabin internal width	1.37 m	4.495 ft
Cabin internal length	6.71 m	22.015 ft
Cabin height, max	1.45 m	4.757 ft

	<u>Metric</u>	<u>US</u>
<b>Weights</b>		
Operating weight, empty	3,373 kg	7,437 lb
Max take-off weight*	5,670 kg	12,500 lb
<b>Capacities</b>		
Standard fuel	2,059 liters	544 gallons US
<b>Performance</b>		
Take-off run	592 m	1,942 ft
Range, econ cruise at 7,620 m (25,000 ft)	3,217 km	1,737 nm
Max cruise, 7,620 m	515 km/h	278 kt
Econ cruise, 7,620 m	503 km/h	272 kt
<b>Propulsion</b>		
C-12D/RC-12D/UC-12B	(2)	UTC Pratt & Whitney Canada PT6A-41 reverse flow, axial-centrifugal turboprop engine rated 633 kW (850 shp), each driving a Hartzell three-bladed, constant speed, fully-feathering, reversible-pitch propeller.
RC-12K	(2)	Pratt & Whitney Canada PT6A-67 turboprop engines rated 895 kW (1,200 shp) each.

\*Max T-O RC-12D: 6,441 kg (14,200 lb).

## Variants/Upgrades

**C-12A.** Based on the Beech Model A200, the US Army ordered 60 units and the USAF 30; one aircraft built for Foreign Military Sales (FMS). Army aircraft initially powered by PT6A-38, but later refitted with -41 engines. Total of 91 produced.

**C-12C.** Same as C-12A but uses the PT6A-41 engine in lieu of the PT6A-38. US Army procured 14 aircraft.

**C-12D.** A military version of the Model A200CT, the C-12D is similar to the C-12C, but has a cargo door and provisions for wingtip tanks. Fifty-five were procured by USAF and the US Army, five of which went to overseas customers under FMS procedures.

**C-12E.** Upgraded C-12A with PT6A-42 engines for the US Air Force.

**C-12F.** Forty aircraft initially operated on lease by USAF in the Operational Support Aircraft (OSA) role; the service purchased these aircraft outright in 1986. An additional 20 have been procured by the US Army, with another six purchased by the Air National Guard. The Army holds options on up to 26 additional aircraft. The C-12F is generally similar to the Beech Model B200C, but has a hydraulically retractable landing gear.

**RC-12D/H/K.** A military version of the Beech Model A200CT, the RC-12D Improved Guardrail V platform is fitted with the USD-9 remotely controlled communications intercept and direction finding system. It

carries an aircraft survivability equipment suite, a Carousel IV-E inertial platform and TACAN set, and mission-related equipment including a radio data link, ARW-83(V)5 airborne relay facility, and ECM in wingtip pods. Other equipment includes an TSQ-105(V)4 integrated processing facility, ARM-63(V)4 AGE flightline van, and TSC-87 tactical commander's terminal. Max take-off weight is 6,441kg (14,200 lb). Sixteen aircraft have been modified from previously delivered C-12Ds. In addition, the Army has received six RC-12H Guardrail Common Sensor aircraft; FY88-89 funds provided nine uprated (PT6A-67 engines) RC-12K variants, with another seven in the FY90-91 plan. Twelve were funded in FY92-94.

**RC-12N/P/Q.** Further upgrade of RC-12K equipped with dual EFIS and aircraft survivability avionics suite. Fifteen converted from K models by ESL. Raytheon converting 12 Ks to RC-12P standard, featuring increased TOW, different mission equipment. ESL and Loral converted three P models to RC-12Q for direct satellite relay mission, to have been delivered in 1997.

**UC-12B.** USN/USMC version of the Beech Model A200C, this variant is powered by the PT6A-41 engine, and features a cargo door and high-flotation landing gear. A total of 78 have been funded.

UC-12F. Basically similar to the C-12F, this utility variant was first ordered in April 1983, six for the US Army and six for the Army National Guard.

UC-12M. US Navy equivalent of C-12F. Twelve were produced in 1987/1988.

T-44. Powered by two PT6A-34Bs, this model incorporates features of both the C90 and E90 King Air

variants. The US Navy selected the T-44A as the finalist in its VTAM(X) trainer competition in 1976, and has received 61 units. Initial deliveries took place in April 1977.

U-21. The US Army procured 175 U-21s, a militarized version of the King Air A100, beginning in 1971, and two aircraft were supplied to the Spanish Air Force. Additional buys are not planned.

## Program Review

**Background.** Beech has produced military derivatives of the corporate market's leading turboprop aircraft, the King Air, since 1974. The first to enter service was the RU-21. The Beech C-12/T-44/U-21 aircraft are in the inventories of all three US services and those of some overseas air arms as well.

The US Army was the first to order a dedicated military King Air, placing its initial contract for 173 U-21s in 1971. Deliveries of these were completed long ago. The US Navy has procured and received 78 UC-12Bs, and

selected the T-44A as finalist in the VTAM(X) trainer competition in 1976. A total of 61 units were delivered by June 1980.

**Power Plants.** All King Airs including the military derivatives use Pratt & Whitney Canada PT6A turboprop engines. The C-12 began using the PT6A-38 for the C-12A, but subsequent models used the PT6A-41. They are the C-12D, UC-12B, C-12C, and RC-12D/H. The C-12F and UC-12F use the PT6A-42, while the RC-12K is powered by PT6A-67s.

## Funding

	US FUNDING							
	FY96		FY97		FY98		FY 99 (Req)	
	QTY	AMT	QTY	AMT	QTY	AMT	QTY	AMT
<u>US Army</u>								
Guardrail								
Common Sensor		\$5.9		4.9		12.8		1.9
Guardrail Mods		56.6		30.3		14.6		36.1
C-12 Mods		0.7		0.6		6.5		2.7
<u>US Air Force</u>								
C-12 Mods		3.1		11.0		4.6		3.8
Total		\$66.3		46.8		38.5		44.5

All \$ are in millions.

## Recent Contracts

None noted.

## Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	1974	USA ordered U-21 variant
Aug	1974	USA/USAF ordered C-12A variant
	1975	Initial C-12A deliveries
	1976	USN selected T-44A for VTAM(X) trainer requirement
	1977	Initial T-44A deliveries; USN ordered UC-12B variant
	1978	Initial UC-12B deliveries
	1988	RC-12K deliveries begun

1997

Final RC-12Q deliveries

## Worldwide Distribution

(As of May 1, 1998)

<b>Israel</b>	3	RU-21A
	7	RC-12D
<b>US Army</b>	129	C-12D/F
	45	RC-12D/H/K
<b>US Air Force</b>	36	C-12A/D/F
<b>US Navy</b>	57	T-44A
	78	UC-12F/M
	3	U-21
	4	RC-12F/M
<b>US Marine Corps</b>	18	UC-12B/F

## Forecast Rationale

Raytheon has delivered the last C-12Rs and, in collaboration with Loral, has also wrapped up the conversion and delivery of three RC-12P-to-Q direct air satellite relay aircraft to the US Army. These are to serve as so-called mother ships to extend the operational areas of the service's RC-12Ps.

Additional requirements for any of this series will be filled through further conversions rather than new production. Accordingly, we are not forecasting additional C-12 series aircraft.

## Ten-Year Outlook

### ESTIMATED CALENDAR YEAR PRODUCTION

Aircraft	(Engine)	thru 97	High Confidence Level				Good Confidence Level				Speculative		Total 98-07	
			98	99	00	01	02	03	04	05	06	07		
BEECH AIRCRAFT CORPORATION														
C-12A/C/D	PT6A-41	160	0	0	0	0	0	0	0	0	0	0	0	0
T-44 (ALL VARIANTS)	PT6A-34/34B	62	0	0	0	0	0	0	0	0	0	0	0	0
U-21	PT6A-28	175	0	0	0	0	0	0	0	0	0	0	0	0
UC-12B	PT6A-41	78	0	0	0	0	0	0	0	0	0	0	0	0
UC-12F	PT6A-42	12	0	0	0	0	0	0	0	0	0	0	0	0
UC-12M	PT6A-42	12	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal - BEECH AIRCRAFT CORPORATION		499	0	0	0	0	0	0	0	0	0	0	0	0
RAYTHEON AIRCRAFT CO														
C-12F/R	PT6A-42	76	0	0	0	0	0	0	0	0	0	0	0	0
RC-12D/H/K	PT6A-41/67	34	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal - RAYTHEON AIRCRAFT CO		110	0	0	0	0	0	0	0	0	0	0	0	0
Total Production		609	0	0	0	0	0	0	0	0	0	0	0	0