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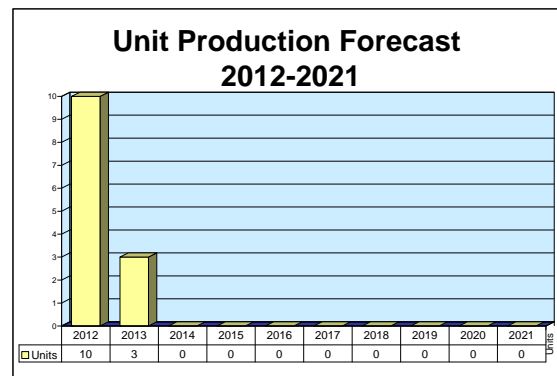
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Hawker Beechcraft Hawker 4000

Outlook

- Hawker Beechcraft shipped 10 Hawker 4000s in 2011, down from 16 in 2010
- Hawker Beechcraft filed for bankruptcy under Chapter 11 of the U.S. Bankruptcy Code in May 2011
- Production forecast to end as Hawker Beechcraft exits the jet business



Orientation

Description. Twin-engine, medium/long-range corporate transport.

Sponsor. Privately sponsored by Raytheon Aircraft Co, which sold its aircraft business to Hawker Beechcraft Inc in 2007.

Status. In production.

Total Produced. Five prototype/test aircraft and 57 production aircraft through mid-2012.

Application. Corporate/executive transport.

Price Range. \$22.9 million.

Hawker Beechcraft Hawker 4000



Hawker 4000

Source: Hawker Beechcraft

Contractors

Prime

Hawker Beechcraft Corp	http://www.hawkerbeechcraft.com , 10511 E Central Ave, Wichita, KS 67026 United States, Tel: + 1 (316) 676-7111, Prime
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Subcontractor

Aero Space Controls Corp	1050 N Mosley, Wichita, KS 67214 United States, Tel: + 1 (316) 264-2875, Fax: + 1 (316) 264-1639, Email: skeith@aerospace-controls.com (Environmental Control System)
Fuji Aerospace Corp, Utsunomiya Plant	http://www.fhi.co.jp/english/ , 1-1-11 Yonan, Utsunomiya-shi, Tochigi, 320-8564 Japan, Tel: + 81 028 684 7777 (Wing)
Honeywell Aerospace, Air Transport & Regional	http://www.honeywell.com , 21111 N 19th Ave, Phoenix, AZ 85027 United States, Tel: + 1 (602) 436-2311 (Primus Epic Avionics System)
Pratt & Whitney Canada	http://www.pwc.ca , 1000 Marie-Victorin Blvd, Longueuil, J4G 1A1 Quebec, Canada, Tel: + 1 (450) 677-9411, Fax: + 1 (450) 647-3620 (PW308A)
Rockwell Collins Inc	http://www.rockwellcollins.com , 400 Collins Rd NE, Cedar Rapids, IA 52498-0001 United States, Tel: + 1 (319) 295-1000, Fax: + 1 (319) 295-5429 (HF-9000 HF Radio)

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Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; rich.pettibone@forecast1.com

Hawker Beechcraft Hawker 4000

Technical Data

Design Features. Low-wing design with all-composite fuselage mated with transonic, aft-loaded, all-metal airfoil swept at 28.4 degrees and fitted with double-slotted, drop-hinged, trailing-edge flaps.

	<u>Metric</u>	<u>U.S.</u>
Dimensions		
Length	21.18 m	69.5 ft
Wingspan	18.82 m	61.75 ft
Height	6.02 m	19.75 ft
Cabin Dimensions		
Length	7.62 m	25 ft
Width	1.97 m	6.5 ft
Height	1.83 m	6 ft
Baggage capacity	3.1 cu m	108.5 cu ft
Weight		
Maximum takeoff weight (MTOW)	17,917 kg	39,500 lb
Basic operating weight	10,750 kg	23,700 lb
Max. payload	1,143 kg	2,300 lb
Performance		
Maximum cruise speed	896 kmph	484 kt
Takeoff field length at MTOW	1,545 m	5,068 ft
Service ceiling	13,715 m	45,000 ft
Range with four passengers	5,908 km	3,190 nm
Range with full fuel, max available payload	5,808 km	3,136 nm
Range at max payload	5,287 km	2,855 nm

Propulsion

(2) Pratt & Whitney Canada PW308A turboprops rated at 30.7 kN (6,900 lbf) each at takeoff.

Seating

Standard seating for two crew plus eight passengers.

Program Review

Background. For several years, rumors had circulated regarding a longer-range follow-on to the Hawker (formerly British Aerospace) 1000 corporate jet. After exploring a number of derivative designs, Raytheon, then owner of the aircraft business later purchased by Hawker Beechcraft, decided to go with a clean-sheet design. Then company president Roy Norris said the Model 4000 would have nothing in common with the previous model save the Raytheon name.

Hawker Horizon Unveiled

The new model, subsequently designated the Hawker Horizon, was unveiled at the 1996 NBAA show featuring an 84-inch-diameter all-composite fuselage. It was 140 inches longer than the Hawker 1000, and had

max seating for 12 passengers and a stand-up cabin 72 inches in height.

Risk-sharing partner Fuji Heavy Industries supplied the all-metal wing containing the 14,100-pound fuel load.

Raytheon selected the P&WC PW308A, featuring a 33.2-inch-diameter fan and a bypass ratio of 3.88:1. It is also fitted with a new four-stage axial/single-stage centrifugal compressor, permitting the engine to produce 6,500 lbf at takeoff. This is equivalent to a 32 percent thermodynamic increase when compared to the PW305B installed on the Hawker 1000.

In 1997 the Horizon underwent several design changes: the fuselage was stretched by 10 inches, the wing was moved aft by 4.5 inches, and the engine/pylon pod was moved forward by 3 inches. The area of the horizontal

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and vertical tail surfaces was also increased, and there are now seven rather than eight cabin windows per side.

The Horizon prototype made its maiden flight in August 2001. The second and third test aircraft flew in May and July 2002, respectively. A fourth test aircraft followed in 2004, and a fifth in 2006. The aircraft was renamed the Hawker 4000 in November 2005.

In December 2005, Raytheon and NetJets Inc signed a contract for the purchase of 50 Hawker 4000 aircraft for NetJets' global fractional fleet, reinstating an earlier order. A separate agreement executed at the same time covered a 10-year guaranteed maintenance program.

The program was plagued by delays. At the end of January 2006, Raytheon said it expected the aircraft to get its ticket the following month; the delay resulted from the desire of the manufacturer to fully test the aircraft's lightning protection system. This goal was not met on time, but the company was able to complete function and reliability testing in June 2006. FAA type certification followed in November of that year.

Raytheon announced in December 2006 that Hawker Beechcraft Inc, a new company formed by GS Capital Partners (an affiliate of Goldman Sachs) and Onex Partners (an affiliate of Goldman Sachs) and Onex Partners, had agreed to purchase Raytheon's aircraft business. The sale was completed in March 2007.

In the meantime, delivery of the first aircraft had continued to be delayed. The long period of testing for certification had resulted in changes to fuel tank and hydraulic system requirements that had to be met before deliveries could begin. The result was that the company had nearly completed 23 new aircraft by March 2008 without being able to deliver them to customers. Deliveries ultimately began in June 2009.

The FAA later mandated that roughly 40 Hawker 4000s built through 2010 receive upgraded fuel systems and

other equipment that met FAA Part 25 Amendment 102 standards.

Deliveries Slow

Hawker Beechcraft delivered only 10 Hawker 4000s in 2011, down from 16 the year before. Deliveries of the jet were suspended during the year as the program dealt with a problem with the software in the aircraft's Primus Epic avionics system.

Production hiccups continued to bedevil the program. Honeywell discovered issues during testing for the "Load 20" update to the software involving a wrong turn on a missed approach. This issue was substantially resolved in August 2011 when the company received FAA approval for the update, according to the company's corporate filings. In early 2012, production was slowed by a shortage in composite material used in the aircraft's fuselage.

Both problems were minor in comparison to the financial turmoil at the company. Hawker Beechcraft is a company formed by GS Capital Partners (an affiliate of Goldman Sachs) and Onex Partners in 2006 to buy Raytheon's aircraft business. Two-thirds of the \$3.2 billion purchase price was paid with borrowed money, and the company was awash after the sale was completed in March 2007.

Servicing the debt load was possible when the business jet market was booming, but the last recession decimated the market for smaller business jets. Production of jets at Hawker Beechcraft plummeted, and losses mounted despite the relative strength of the company's military trainer and King Air turboprop product lines.

NetJets and NetJets Europe together ordered 80 Hawker 4000s prior to the financial crisis and global economic slowdown, but these orders did not survive the recession.

Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Late	1995	Hawker 1000 derivative concept explored
Feb	1996	All-new design plans announced
Nov	1996	Design unveiled at NBAA show
Aug	2001	Prototype first flight
Nov	2006	Type certification issued by FAA
Jun	2008	Initial customer deliveries
Jul	2010	Type certification granted by EASA

Forecast Rationale

Hawker Beechcraft Hawker 4000

Hawker Beechcraft filed for bankruptcy under Chapter 11 of the U.S. Bankruptcy Code on May 3, 2012. The company is undergoing restructuring and will receive \$400 million in Debtor-in-Possession financing to enable it to continue operations, including paying employees, suppliers, vendors and others in the normal course of business. Restructuring under Chapter 11 will allow the company to eliminate \$2.5 billion in debt, resulting in savings of \$125 million of annual cash interest expense.

Entering bankruptcy will allow Hawker Beechcraft to restructure its finances and emerge as a more viable company. However, the company plans to exit the business jet market. If production of the Hawker 4000 is to continue, the company said in October 2012, a buyer will have to be found for the line. This is unlikely. Hawker Beechcraft has long struggled to make the Hawker 4000 program profitable. Internal planning documents released during the bankruptcy proceeding confirmed that the company believed it needed a 20 percent cut in material costs from suppliers to make the Hawker 4000 program "financially viable." Management saw little chance of this happening at the time.

Further, while the Hawker 4000 has received positive reviews in the aviation press from pilots who have flown it, the program faces strong competition in the super-midsize segment of the business jet market.

The primary competitor to the Hawker 4000 is Bombardier's Challenger 300. Both aircraft are in the \$20 million range, and they offer similar performance. They also offer cabins that are about the same size. The Hawker is a little longer, the Challenger a little wider. Headroom is an inch apart. The Challenger got to the market first and has established itself as a successful program. Hawker Beechcraft is now playing catch-up.

Another aircraft in the super-midsize segment is Embraer's Legacy 600, a derivative of its ERJ 135 regional airliner. The Legacy has more cabin volume than the 4000 and Challenger 300, but it costs considerably more than either aircraft.

The Hawker 4000 also now competes against the Gulfstream G280, an evolved variant of the G200 with a new wing, blended winglets, and a new engine. Cabin size has also been increased, via the removal of an internal fuselage fuel tank.

A new aircraft from Dassault is targeted at the super-midsize segment, and for now is referred to as the "SMS" in our forecasts. This aircraft will not enter

service until the latter half of the forecast period, but in the meantime Dassault is offering the Falcon 2000S to keep a presence in the segment.

Pending further developments, the forecast assumes that the Hawker 4000 program will not be acquired by a third party. It is possible that a white knight will emerge to rescue the program, but at this stage the likelier outcome is that the manufacturer completes deliveries of existing orders and shuts down the Hawker 4000 line. This is forecast to occur early in 2013, though it is possible that production could end before the end of 2012.

Ten-Year Outlook

Hawker Beechcraft Hawker 4000

ESTIMATED CALENDAR YEAR UNIT PRODUCTION												
Designation or Program	High Confidence					Good Confidence			Speculative			Total
	Thru 2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Hawker Beechcraft Corp												
Hawker 4000 <=> PW308 A												
	57	10	3	0	0	0	0	0	0	0	0	13
Total	57	10	3	0	0	0	0	0	0	0	0	13