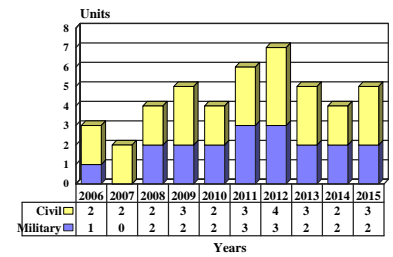


B-N Group Turbine Islander - Archived 10/2007

Outlook

- B-N Group focusing on piston-powered variants, exploring use of diesel powerplants
- Demand for BN-2T variants remains soft
- B-N Group may pursue joint venture partnership in China

**10 Year Unit Production Forecast
2006 - 2015**



Orientation

Description. Twin-turboprop-powered, eight- to ten-seat commuter/utility and special-purpose military transport aircraft.

Sponsor. Pilatus Britten-Norman (now the B-N Group Ltd).

Contractors. B-N Group Ltd, Bembridge, Isle of Wight, United Kingdom.

Status. Production of civil, paramilitary, and military Turbine Islander and Turbine Defender models.

Total Produced. Through 2005, Turbine Islander production totaled approximately 72 units, including a small number of company-registered demonstrator examples.

Application. Commuter feeder line, small package, and general cargo transportation. Military and paramilitary applications include maritime patrol, border patrol and internal security, light troop assault, search and rescue, fishery protection, aerial photography and geophysical survey, paratroop training and skydiving, ELINT, anti-submarine warfare, anti-surface warfare, and airborne early warning.

Price Range. Approximately \$4 million; MSSA, approximately \$9.5 million flyaway. Both prices in 2006 dollars.

Contractors

Prime

B-N Group	http://www.britten-norman.com , Bembridge Airport, Bembridge, PO35 5PR Isle of Wight, United Kingdom, Tel: + 44 0 8708815060, Fax: + 44 0 8708815061, Email: hq@britten-norman.com , Prime
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Subcontractor

Hartzell Propeller Inc	One Propeller Place, Piqua, OH 45356-2656 United States, Tel: + 1 (937) 778-4200, Fax: + 1 (937) 778-4321 (Three-Blade Propeller)
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Rolls-Royce Corp	http://www.rolls-royce.com/northamerica , PO Box 420, 2001 S Tibbs Ave, Indianapolis, IN 46206-0420 United States, Tel: + 1 (317) 230-2000, Fax: + 1 (317) 230-6763 (250-B17C Turboprop Engine)
Romaero SA	Sector 1, 44, Ficusului Blvd, Bucharest, 71544 Romania, Tel: + 40 1232 0721, Fax: + 40 1232 2082 (Aircraft Production)

Comprehensive information on Contractors can be found in Forecast International's "International Contractors" series. For a detailed description, go to www.forecastinternational.com (see Products & Samples/Governments & Industries) or call + 1 (203) 426-0800.

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

Technical Data

	<u>Metric</u>	<u>U.S.</u>
Dimensions		
Length overall	10.86 m	35.6 ft
Height	4.18 m	13.75 ft
Wingspan	14.94 m	49 ft
Weight		
Weight, empty	1,832 kg	4,040 lb
Max gross weight	3,175 kg	7,000 lb
Payload, maximum fuel	689 kg	1,520 lb
Capacities		
Std fuel	814 liters	215 gal
Performance		
Max cruise	315 kmph	170 kt
Service ceiling	7,620 m	25,000 ft
Climb rate	320 m/m	1,050 ft/m
Single-engine climb rate	66 m/m	215 ft/m
T-O roll	255 m	837 ft
T-O to 50 ft obstacle	381 m	1,250 ft
Landing roll over 50 ft obstacle	381 m	1,250 ft
Range, IFR, plus reserves	1,093 km	590 nm
VFR range, no reserves	1,349 km	729 nm

Propulsion

BN-2T (All) (2) GM Allison Gas Turbine Division Model 250-B17C/F turboprop engines rated 298 kW (400 shp), each driving a Hartzell three-bladed, constant-speed, reversible and feathering all-metal propeller. Engines are flat rated to 238.5 kW (320 shp).

Seating

Standard seating for 10, including pilot. Other configurations available.

Variants/Upgrades

BN-2T Turbine Islander. Powered by Allison 250-B17C turboprops, the BN-2T flew in 1980, and production deliveries began in December 1981. The British Army purchased five aircraft, in the military Defender configuration, as replacements for its 30-year-old de Havilland Beavers. All military mission-specific

derivatives use the BN-2T Turbine Islander airframe and engine combination with appropriate modifications.

Known as the Turbine Defender, this variant is adaptable to a variety of paramilitary roles such as medevac, forward air control, internal security/surveillance, and troop transport. The aircraft is powered by

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the same 400 shp Allison Model 250s as the commercial versions. The Defender can be fitted with four underwing pylons capable of external loads of up to 2,300 pounds.

The following are specific military/paramilitary Turbine Islanders on offer:

Maritime Defender. Similar to the piston-powered Defender but a bit longer, this variant features a modified nose to accommodate the Bendix/King RDR-1400 search radar and is intended primarily for the fisheries patrol, oil rig protection, and search-and-rescue roles.

ASTOR Defender. Funded by the British Ministry of Defence, this aircraft is under development as a battle-field management system to work with remotely piloted vehicles and the USAF/Grumman JSTARS E-8 aircraft. ASTOR stands for Airborne Stand-Off Radar. Twelve could be produced for the British MoD if it outperforms the Canberra-based ASTOR platform. The ASTOR Defender has been flown with Ferranti and Thorn-EMI electronic systems, including the latter's Skymaster radar. The ASTOR flew for the first time on March 5, 1984. Tests included low-level surveillance (10,000 ft), utilizing a new electrically driven antenna and new signal processing techniques. A datalink is in the process of being installed for JSTARS compatibility evaluations. Other changes from the basic Turbine Defender include a modified nose to house electronic systems, and a modified Trislander main gear. International marketing of the ASTOR Defender began in 1991 following approval from the MoD.

ASW/ASV Maritime Defender. This version can be equipped to a customer's requirements, but generally comes with a search radar, forward-looking infrared (FLIR) capability, sonobuoys, a magnetic anomaly detector, and acoustic processors. It can carry two Sting Ray torpedoes, four Sea Skua anti-ship missiles, and a variety of other systems on the four wing hardpoints. The ASW Turbine Defender prototype is now in service with the British Royal Navy's Directorate of Underwater Weapons.

AEW Defender. A joint venture of Thorn-EMI and then-Pilatus Britten-Norman, this aircraft incorporates the Skymaster radar. The aircraft has a much larger bulbous nose than the ASTOR vehicle. A second operator's console is added for a maritime version. Not yet in production, the AEW Defender will be based on the Defender 4000 airframe, which uses the larger 53-foot wing of the Trislander.

Internal Security Defender. Similar to that used for border patrol, the Internal Security Defender was purchased by the Netherlands police and the U.K. Army Air Corps; the latter uses a single aircraft for Northern Ireland operations. This version generally is equipped with cameras and FLIR, but can be configured to carry rockets, machine guns, and bombs. Racal or Bendix avionics are normally fitted, including the latter's RDR 1400C search radar.

ELINT Defender. This aircraft is a joint venture with Racal, and includes that firm's Kestrel EW avionics suite.

Defender 4000. Announced at the 1994 Farnborough Air Show, this is the most powerful and largest Turbine Islander variant. It has a 53-foot wingspan, a gross weight of 8,500 pounds, a cruise speed of 170 knots, and improved Allison Model 250-B17F turboprops flat rated at 298 kW (400 shp). Fuel capacity increases about 50 percent over the standard Turbine Islander to a total of 2,010 pounds. Payload increases by a similar percentage to just over 1,000 kilograms (2,205 lb). Britten-Norman officials quote a lead time from order for the basic aircraft of 18 months, and two years for a mission-specific version. Thorn-EMI Skymaster look-up and look-down radar is standard. The Irish Department of Justice became the first customer, with an order for one aircraft announced in January 1997.

Defender MSSA. Known as the Multi-Sensor Surveillance Aircraft, this version of the Defender 4000 is equipped with the APG-66 radar and WF-360 FLIR system.

Program Review

Background. The Britten-Norman Turbine Islander was developed from one of the world's most popular utility light twin aircraft, the piston-powered BN-2A Islander. The Allison-powered aircraft expands on the success of the less powerful version, and performs the same arduous operations and missions in less developed nations.

The aircraft went through a relatively quick and trouble-free development period, flying for the first time in August 1980. The first production aircraft was delivered in December 1981. Since that time, more than three dozen special-purpose aircraft have been sold around the world. Prior to 1990 sales averaged only two to three annually, but they rose sharply in 1990,

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with announced orders for more than 10, and 15 actually built.

The BN-2 was originally developed in the mid-1960s by Britten-Norman Aircraft. Airframe production of the Islander was shifted to Romania in 1969 after Britten-Norman and IAVb Bucuresti inked a 1968 accord. In 1972, Fairey Ltd acquired the company and transferred airframe production to Fairey's Gosselies (Belgium) plant. Seven years later, in 1979, Fairey Ltd was liquidated and Pilatus acquired Britten-Norman in its entirety. The Swiss manufacturer quickly returned airframe production to Romania, where it has stayed

ever since. Romanian-produced airframes are delivered to the Isle of Wight for completion, flight tests, and delivery.

P B-N Sold. In 1998, Pilatus Aircraft, the Swiss parent company, sold Britten-Norman to Litchfield Continental, a U.K.-based investment group. In the spring of 2000, the company went into receivership and all production was suspended. Several months later, the company was acquired by a group of investors from Oman, and the company now does business as the B-N Group Ltd.

Timetable

Month	Year	Major Development
	1964	Piston Islander in initial design stages
Jun	1965	Prototype first flight
	1967	CAA, FAA certification obtained
Jun	1969	BN-2A model introduced
Aug	1969	First Romanian-built Islander makes initial flight
	1971	Trislander deliveries begun
	1976	First PADC-assembled Islander makes initial flight
	1978	BN-2B model introduced
	1979	Britten-Norman acquired by Pilatus
	1980	Turbine Islander development begins
Aug	1980	First flight of BN-2T Turbine Islander
	1981	Turbine Islander deliveries begin
Mid	1997	First Defender 4000 delivery
Mid	1998	B-N sold to Litchfield Continental by Pilatus
Early	2000	B-N acquired by Omani investors

Worldwide Distribution / Inventories

Identified military inventories are as follows:

British RAF	2
British Royal Army Air Corps	6
Irish Air Corps	1
Mauritius Coast Guard	1
Pakistan Naval Air Arm	4
Royal Netherlands Police	2
Turkish Air Force	1

Forecast Rationale

In early 2004, the U.K. Army Air Corps bought three Turbine Islanders and these serve in the surveillance role in Iraq. Overall, however, interest in the Turbine Islander/Defender series remains soft.

B-N had sought to set up a joint venture with the Chinese in a deal involving the three-engine, piston-

powered Trislander model. There was some speculation that, ultimately, the U.K.-based company might also offer the BN-2T as a basis for cooperation, but this has not occurred.

We had expected the manufacturer to benefit from growing worldwide interest in low-cost anti-terrorism

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programs. This has not been the case and it may be that the aircraft is finding it difficult to compete with helicopters fitted with special mission systems.

production of 45 BN-2Ts during the 2006-2015 timeframe, with civil (police and government) output outpacing military (special mission/Defender) production.

In light of sluggish demand, we have scaled down our forecast from that of a year ago. We are forecasting the

Ten-Year Outlook

Civil

ESTIMATED CALENDAR YEAR PRODUCTION

Aircraft	(Engine)	thru 05	High Confidence Level			Good Confidence Level			Speculative			Total 06-15	
			06	07	08	09	10	11	12	13	14		15
B-N GROUP													
TURBINE ISLANDER	250-B17C/F	37	2	2	2	3	2	3	4	3	2	3	26
BN-2T													
Total Production		37	2	2	2	3	2	3	4	3	2	3	26

Military

ESTIMATED CALENDAR YEAR PRODUCTION

Aircraft	(Engine)	thru 05	High Confidence Level			Good Confidence Level			Speculative			Total 06-15	
			06	07	08	09	10	11	12	13	14		15
B-N GROUP													
BN-2T SPECIAL MISSION	250-B17C/F	35	1	0	2	2	2	3	3	2	2	2	19
Total Production		35	1	0	2	2	2	3	3	2	2	2	19