4

Turboprops

Offering reduced fuel costs but with cabins to match the business jets there has been a resurgence of interest in the turboprop category. These aircraft range from the workhorses of any charter fleet such as the King Air C90 GT or the Cessna Caravan where there is a requirement to operate passengers or cargo to remote or difficult environments through to the top-of-the range models such as the Piaggio Avanti and the Pilatus PC-12

■ The single engine Pilatus PC-12 can operate as a small airliner, a corporate aircraft or a combi passenger-freighter - it is highly versatile and can operate on unprepared strips.
Artists: Tim Hall and David Hatchard

BEECHCRAFT 1900D

SPOTTER'S GUIDE

The most obvious change from the King Air 200 to the 1900D is the substantially stretched fuselage (17.63m/57ft 10in compared to 13.34m/43ft 9in). Other things to look at are the modified swept fin and tailplane with the addition of tailets, and stabilons on each side of the lower rear fuselage. There are eight windows on each side.

SPECIFICATION

Length	57' 10"	17.62m
Wingspan	57' 11"	17.64m
Height	15' 6"	4.72m
Cabin Length	25' 3"	7.69m
Cabin Width	4' 6"	1.37m
Cabin Height	5' 11"	1.80m
Max Range (19)	527nm	975km
Max Seating	2 + 19	
Typical Seating	2 + 12	
Powerplant	2x P&WC PT6A-67D	1,279SHP/953kW each
Avionics	4-Tube Collins EFIS 84 & Pro Line II radio	
Max Cruise Speed	280ktas	518km/h
Max Ceiling	25,000ft	7,620m
Rate of Climb	2,615fpm	797mpm
Take off Distance	3,813ft	1,162m
Landing Distance	2,790ft	850m
MTOW	17,120lbs	7,766kg
Max Landing Weight	16,765lbs	7,605kg
Useful load	6,440lbs	2,921kg
Payload with full fuel	1,982lbs	899kg
Price (1999)	$3.4m	€2.65

HERITAGE

The Beechcraft 1900D was developed from the Beech 99 commuter airliner, itself a derivative of the King Air 200 turboprop. Cockpit controls and operations are similar to the King Air. Development of the 1900 began in 1979, with first flight occurring on September 3 1982. US FAA certification was awarded in November 1983, prior to the 1900C's entry into service in February the following year. The first ExecLiner corporate transport version was delivered in mid 1985. Production ended in 2004 with final delivery in 2005.

LOW cost corporate shuttle requirements have seen resurgence of interest in the Beechcraft 1900D.

The 19-seater regional airliner – a product of the 1980s – has included a corporate version named the "ExecLiner".

Although no longer in production, Raytheon Aircraft Company have brought the 1900D to air shows to stimulate demand. In its airliner configuration the interior features single forward facing seats separated by a narrow aisle, but in corporate shuttle it can reduce to 12 seats in blocks of club seating.

The Beechcraft 1900D has a range just short of 1500nm and cruises at 283ktas (525 km/h)

BEECHCRAFT KING AIR B200

SPOTTER'S GUIDE

The B200 has a low straight wing P&WC PT6-A engines mounted on them to power the two four blade propellers. The aircraft has five main windows on each side with a small window to the rear by the swept T-tail with dorsal fin and swept tailplane.

SPECIFICATION

Length	43' 10"	13.36m
Wingspan	54' 6"	16.61m
Height	14' 10"	4.52m
Cabin Length	16' 8"	5.08m
Cabin Width	4' 6"	1.37m
Cabin Height	4' 9"	1.45m
Max Range (4)	1,407nm	2,606km
Max Seating	1 + 15	
Typical Seating	1 + 7	
Powerplant	2x P&WC PT6A-42	850SHP/634kWeach
Avionics	Rockwell Collins Pro Line 21	
Max Cruise Speed	289ktas	535km/h
Max Ceiling	35,000ft	10,668m
Rate of Climb	2,460fpm	750mpm
Take off Distance	2,600ft	792mpm
Landing Distance	2,845ft	867mpm
MTOW	12,500lbs	5,670kg
Max Landing Weight	12,500lbs	5,670kg
Useful load	4,060lbs	1,842kg
Payload with full fuel	415lbs	188kg
Price	$5.08m	€3.96m

ABILITY to handle difficult conditions as well as being a "pilot's dream to fly" the King Air B200 has found favour as a business aircraft and for military applications or training purposes. B200's routinely fly from unimproved airstrips that are off-limits to many other aircraft. High-flotation landing gear allows operators to fly with confidence, even into unimproved airstrips.

It delivers 289ktas (535km/h) cruise speed at 25,000ft and has a range of 1,825nm (3,380km). The aircraft has a landing run of just 1,759ft (536m) and take off run of 1,860ft (567m), which adds to that access to small remote airfields.

For the passengers, the B200 features a comfortable and roomy "squared-oval" pressurized and air-conditioned cabin. It can be configured with seven or nine seats. The rear cabin door is equipped with airstairs. Up front The King Air B200 is roomier than most business jets and is now being offered with the Rockwell Collins Pro Line 21 avionics suite as standard equipment.

HERITAGE

The Super King Air 200 aircraft was launched in October 1970 and first flew in 1972. The design of the Super King Air B200 derivative began in 1980 with first delivery in March 2001. The "Super" was dropped from the name in 1996 and the aircraft became known as the King Air B200. Since first entering service in 1981 almost 3,000 King Air B200 aircraft have been delivered.

BEECHCRAFT KING AIR C90GT

SPOTTER'S GUIDE

The King Air 90 series differs from its larger siblings through a conventional and low set tail (the larger King Airs have T-tails).
There are four main cabin windows on each side. The P&WC engines, with four-blade propellers are mounted on the wings.

SPECIFICATION

Length	35' 6"	10.82m
Wingspan	50' 3"	15.32m
Height	14' 3"	4.34m
Cabin Length	12' 7"	3.84m
Cabin Width	4' 6"	1.37m
Cabin Height	4' 9"	1.45m
Max Range (4)	831nm	1,539km
Max Seating	1 + 12	
Typical Seating	1 + 5	
Powerplant	2x P&WC PT6A-135A	2x 550SHP/410kW each
Avionics	Collins EFIS displays Pro Line II radios	
Max Cruise Speed	270ktas	500km/h
Max Ceiling	30,000ft	9,144m
Rate of Climb	1,953fpm	595mpm
Take off Distance	2,392ft	729m
Landing Distance	2,355ft	717m
MTOW	10,100lbs	4,581kg
Max Landing Weight	9,600lbs	4,354kg
Useful load	3,010lbs	1,365kg
Payload with full fuel	437lbs	198kg
Price	$2.95m	€2.30m

LIKE its closest competitor – the Piaggio Avanti – the King Air series built now by Raytheon Aircraft Company (RAC) is built for business rather than private usage.

Conscious of the potential demand from the Ultra light jets (ULJ) and Very Light jets (VLJ), RAC responded with this new "baby" King Air as a direct derivative of the original King Air 90 launched more than 40 years ago.

The C90GT features enhanced "GT" performance from the Pratt & Whitney Canada PT6A-135 and is designed to attack the ULJ market through its offer of a larger cabin than most of the small jets and performance that would complete a typical mission just minutes behind a jet.

The C90GT airframe is the same basic size as the original King Air with four to five passenger seats and the roomy squared-oval cabin shape although it can be configured for up to seven passengers.

It has a heated and pressurized baggage storage area which is easily accessed during flight.

There is also a fully enclosed lavatory.

HERITAGE

King Airs have been built since 1964 when the first King Air 90 – a derivative of the Beechcraft "Queen Air" – first flew. The new King Air C90GT certified in December 2005 features a 26ktas increase in max cruise speed, a 50-percent time-to-climb reduction and shorter take off distances at all field elevations compared to the King Air C90B that it replaces. It also needs just 22 minutes to reach its FL300 ceiling.

BEECHCRAFT KING AIR 350

HERITAGE

The King Air 350 is a stretch of the 300 series which first flew in October 1982 – itself an improved derivative of the B200. The 350 first flew in September 1988 and was certified in March 1990.

SPECIFICATION

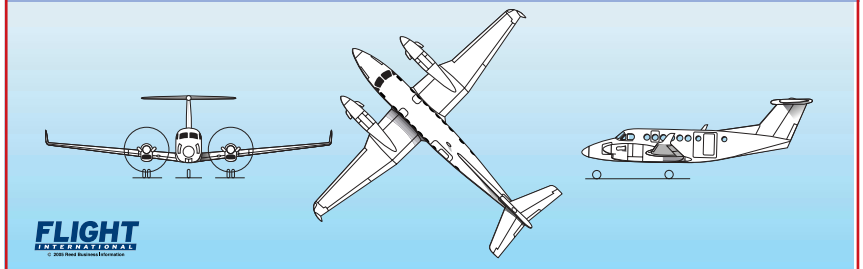
Length	46' 8"	14.22m
Wingspan	14' 4"	4.37m
Height	57' 11"	17.65m
Cabin Length	19' 6"	5.94m
Cabin Width	4' 6"	1.37m
Cabin Height	4' 9"	1.45m
Max Range (4)	1,545nm	2,861km
Max Seating	1 + 15	
Typical Seating	1 + 9	
Powerplant	2x P&WC PT6A-60	1,050SHP/783kW each
Avionics	Rockwell Collins Pro Line 21	
Max Cruise Speed	312ktas	578km/h
Max Ceiling	35,000ft	10,668m
Rate of Climb	2,731fpm	832mpm
Take off Distance	3,300ft	1,006m
Landing Distance	2,692ft	821m
MTOW	15,000lbs	6,804kg
Max Landing Weight	15,000lbs	6,804kg
Useful load	5,400lbs	2,449kg
Payload with full fuel	1,789lbs	811kg
Price	$5.97m	€4.65m

WITH nine seats in its business configuration, the stretched King Air 350 can still be flown single pilot for private work. The aircraft has also been certified for commuter or corporate shuttle work with up to 11 passengers and two crew.

With the addition of the advanced Collins ProLine 21 avionics there is a high level of flight management. Again, this turboprop can compete in performance with many of the jets but has proven very cost effective for the many operators using this aircraft worldwide.

The aircraft cruises at 312ktas (578 km/h) with a ceiling of 35,000ft.

SPOTTER'S GUIDE

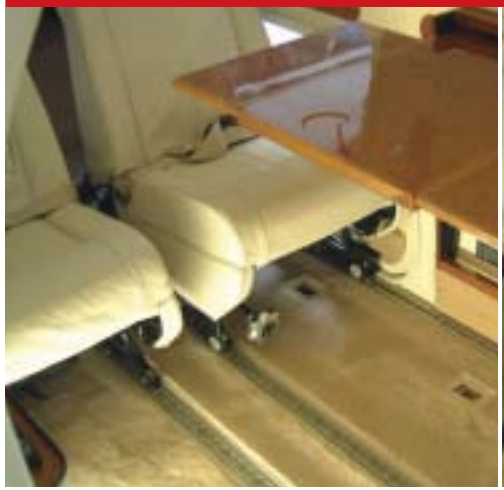


The most marked difference between the King Air 350 and its predecessor the 300 , is a stretched fuselage lengthened by 86cm (2ft 10in) and the addition of winglets. The winglets also separate the 350 from the B200. There are seven cabin windows plus a window on a cargo door and the King Air trademark window aft. Like the B200 there is a swept T-tail with dorsal fin and swept tailplane.

BN-2T ISLANDER

SPECIFICATION

Length	35' 8"	10.9m
Wingspan	49'	14.9m
Height	14' 6"	4.4m
Cabin Length	15' 2"	4.6m
Cabin Width	3' 6"	1.1m
Cabin Height	4' 2"	1.3m
Max Range	590nm	1,093km
Max Seating	2 + 8	
Typical Seating	1 + 4	
Powerplant	2x Rolls-Royce Allison 250-B17C 320SHP/238kW each	
Max Cruise Speed	170ktas	315km/h
Max Ceiling	25,000ft	7,622m
Rate of Climb	1,050fpm	318mpm
Take off Distance	1,250ft	381m
Landing Distance	1,110ft	338m
MTOW	7,000lb	3,175kg
Max Landing Weight	6,800lb	3,084kg
Useful load	2,960lb	1,343kg
Payload with full fuel	1,520lb	689kg
Price	$1.65m	€1.29m



ACCORDING to Britten Norman CEO William Hynett, the BN2T Islander is the next best thing to having a helicopter when you need short field operations in windy conditions.

Adaptable, versatile and durable, it has an unsurpassed record of solving transportation problems simply and economically in some of the world's harshest environments. It also works well in the more benign environments such as the Caribbean islands, the South Pacific and Scottish Highlands.

In conjunction with the Australian interior manufacturer Aero Plastics & Interiors, Britten-Norman is now able to offer a range of customised interiors for the Islander.

Options include additional windows, trim to match the interior colour scheme and the new executive interior with club seating arrangement and an executive table.

In addition to the twin Rolls-Royce (Allison) 250 B17C series Turboprop there are a 300HP and a 260HP Lycoming version of the Islander available.

Exceptional low-speed and single-engine handling, fixed undercarriage and High ground clearance for propeller minimises damage from debris and makes this an aircraft you can take virtually anywhere.

HERITAGE

Design of the Islander started in 1963 and the first prototype BN-2 first flew on 13 June 1965,. The first production Islander first flew on 24 April 1967. More than 1250 of the type have been delivered over the 40 years of production with the ownership of the manufacturer changing hands a number of times. The aircraft are built in the UK on the Isle of Wight.

SPOTTER'S GUIDE

The Islander has a straight high wing with a flared wingtip. The Rolls-Royce Allison turboprop engines are mounted below each wing. There is a swept tail fin and a low set straight tailplane. It features non-retractable landing gear with the main leg mounted aft of the rear wing spar. There are three large windows on either side with the middle window having a diagonal cut to the rear.

CESSNA CARAVAN 675

HERITAGE

The Caravan 675 (short fuselage) combines the airframe of the 208 with the fully rated engines of the 208B announced at NBAA in September 1997. FAA certification was achieved April 1998 with first delivery that month as an amphibian, to Riversville Aviation Company of New York. The 100th Caravan equipped with Wipaire Wipline 8000 amphibious floats was delivered in May 2000.

SPECIFICATION

Length	37' 7"	11.46m
Wingspan	52' 1"	15.88m
Height	14' 10"	4.51m
Cabin Length	12' 8"	3.7m
Cabin Width	5' 2"	1.6m
Cabin Height	4' 4"	1.3m
Max Range (8/1500lb payload)	957nm	1772km
Max Seating	2 + 12	
Typical Seating	1 + 4	
Powerplant	P&WC PT6A-114A	675SHP/503kW
Max Cruise Speed	186kts	344km/h
Max Ceiling	25,000ft	7,620m
Rate of Climb	1,234fpm	376mpm
Take off Distance	2,053ft	626m
Landing Distance	1,655ft	504m
MTOW	8,000lb	3,629kg
Max Landing Weight	7,000lb	3,538kg
Useful load	4,062lbs	1,842kg
Payload with full fuel	1,838lbs	834kg
Price	$1.713m	€1.34m

NOTHING matches the versatility and cost-effectiveness of the Caravan 675 - a shorter version of the Grand model, by about four feet. This aircraft also is available in several configurations, including a six-seat executive variant.

It boasts better climb and cruise performance than the Grand Caravan, and is a true 200mph aircraft. Like the Grand model, the hourly operating cost is claimed to be unmatched by any other aircraft in its class.

The beauty of the 675 is that is can also operate on water. The 675 wheeled floatplane version is the largest single engined floatplane manufactured today. In its promotional literature Cessna says, "load it with a generous amount of baggage and/or passengers. Pack extra gear into the floats. Lift off and fly at speeds in excess of 185mph for more than 500 statute miles at max payload."

The luxury Oasis interior can be fitted into the shorter fuselaged Caravan 675 and 675 amphibian. These will feature six executive seats – two forward facing seats and an aft four-place club setting. It can be equipped with a toilet facility with privacy curtains. The seats are finished in plush top-grain leather, and customers have the choice of decorative lower sidewall fabrics and traditional sidewall trim with a veneer accent.

SPOTTER'S GUIDE

In its amphibian configuration it is hard to miss. Still based on the Caravan 1 it bears great resemblance to its bigger brother the 208 Grand Caravan and Cargomaster. However it only has five windows on either side.

CESSNA GRAND CARAVAN

HERITAGE

The Caravan was first introduced in 1985, and was originally designed to provide commercial operators such as Federal Express with a more efficient way to transport cargo. First flight of a prototype occurred on December 9 1982 and certification was granted in October 1984. When production began the following year it became the first all new single engine turboprop powered aircraft to achieve production status. The Caravan fleet operates in 68 countries, logs over 70,000 hours per month, and has exceeded 8 million flight hours. The 208-B Grand Caravan is a stretched derivative of the original Caravan and first flew in 1990.

SPECIFICATION

Length	41' 7"	12.7m
Wingspan	52' 1"	15.9m
Height	15' 6"	4.7m
Cabin Length	16' 8"	5.1,
Cabin Width	5' 2"	1.6m
Cabin Height	4" 3"	1.3m
Max Range	907nm	1,679km
Max Seating	2 + 12	
Typical Seating	1 + 6	
Powerplant	1x PT6A-114A	1,262SHP/941kW
Max Cruise Speed		341km/h
Max Ceiling	25,000ft	7,620m
Rate of Climb	975fpm	297mpm
Take off Distance	2,420ft	738m
Landing Distance	1,795ft	547m
MTOW	8,750lb	3,985kg
Max Landing Weight	8,500lbs	3,855kg
Useful load	4,500lb	2,041kg
Payload with full fuel	1,361lbs	617kg
Price	$1.82m	€ 1.42m

WHEN a business trip means dropping into a grass strip in an inhospitable area, then the Cessna Grand Caravan is the ideal transportation tool. And if you are flying from small regional airports too, it proves its value with its remarkable short field performance.

The spacious cabin can be fitted with a luxurious leather interior through Yingling Aviation in Wichita which gives the Caravan all of the comforts a business jet – with significantly more space.

The Caravan's Oasis interior provides seating configurations for up to 10 people with two forward facing seats behind the crew, a four-place club seating area with executive side tables, and aft divan seating for two incorporating a standard flushing toilet approved for occupancy during take off and landing. The veneer or laminate wood cabinetry features two standard forward cabinets, one providing a convenient refreshment centre, while the other is available for pilot materials and general storage applications.

Electronic equipment including the latest high-tech entertainment systems, telecommunications, and flight data displays are also available as options.

With its large cargo door and underbelly cargo pod, the aircraft is versatile and is often used as a cargo/passenger mix.

SPOTTER'S GUIDE

The distinctive Cessna high straight wing with a brace, a single engine and fixed tricycle undercarriage along with a three blade propeller for the Pratt & Whitney Canada P&WC PT6-A engine make this an easy one to spot. The aircraft has seven square windows on either side – there are only five on the smaller Caravan 675. Many of the Grand Caravans are fitted with large underbelly cargo pod.

dE HAVILLAND TWIN OTTER 400

SPOTTER'S GUIDE

The DHC-6 Twin Otter is a highly manoeuvrable, high winged un-pressurised twin-engined aircraft. The Pratt & Whitney Canada PT6A-35 engines are mounted below the braced, straight high wings with three-bladed propellers, a swept tailfin and low-set tailplane. Specialist large windows are fitted on some existing models for sightseeing operators. The original -100 Twin Otters are recognizable by a much shorter nose.

SPECIFICATION

Length	51'9"	15.77m
Wingspan	65'	19.8m
Height	9' 8"	2.95m
Cabin Length	18' 5"	5.61m
Cabin Width		
Cabin Height	4' 11"	1.5m
Max Range	980nm	1,815km
Max Seating	2 + 20	
Typical Seating	2 + 17	
Powerplant	2x P&WC PT6A-34	
Max Cruise Speed	182ktas	338km/h
Max Ceiling	26,700ft	8,138m
Rate of Climb	1,600 ft/m	
Take off Distance	1,200 ft	366m
Landing Distance		
MTOW	12,500lbs	5,670kg
Max Landing Weight	12,300lbs	5,579kg
Useful load	4,535lbs	
Payload with full fuel		
Price	TBC	

FROM Asian jungles to the Antarctic ice caps, one aircraft that is as capable at minus 60 degrees as it is at plus 60 is the Twin Otter.

Viking Air of British Columbia announced at Farnborough in July 2006 that it was planning to restart production of the 19-seat Twin Otter, to be designated the Twin Otter Series 400.

Viking Air, which has been specialising in de Havilland Canada products for more than 30 years, acquired Type Certificates for seven de Havilland heritage aircraft, including the DHC-2 Beaver, DHC-3 Otter and the DHC-6 Twin Otter.

Versions have appeared with larger windows and reduced seating configuration for charter and sightseeing missions from land, water (or in the case of the South Pole, ice) – the Twin Otter's fixed undercarriage can be fitted with skis, wheels or floats.

The aircraft is an ideal corporate transport for short-field operations.

HERITAGE

The Viking HS Twin Otter 400 will be the latest in this long line of STOL turboprop aircraft. It was first seen in January 1964 with first flight in May 1965 and first customer delivery in July 1966. Canada's leading aerospace business Bombardier bought the de Havilland company and ceased production of the Twin Otter in 1988. Viking bought the rights and is planning to use the latest production technologies to bring a new – but effectively unchanged – Twin Otter 400 to the market again.

The Twin Otter is a derivative of de Havilland's successful DHC-3 Otter.

Many of the design characteristics of the Otter were left intact in the Twin.

The double-slotted flap system that marked the Otter stayed, but the wingspan grew longer, as did the ailerons.

The wing-struts moved inwards toward the engine nacelles, and the tailwheel was replaced by a steerable nosewheel. 20 passengers could fly in the Twin, as compared to only nine in the single Otter.

EADS SOCATA TBM-850

NEW

SPECIFICATION

Length	34' 11"	10.65m
Wingspan	41' 7"	12.68m
Height	14' 3"	4.35m
Cabin Length	13' 3"	4.05m
Cabin Width	4'	1.21m
Cabin Height	4'	1.22m
Max Range (3)	1,520nm	2,815km
Max Seating	2 + 4	
Typical Seating	1 + 4	
Powerplant	1x P&WC PT6A-66D	850shp/633kW
Avionics	EFIS, dual GNS530 GPS/COM/NAV systems plus KMD 850 MFD	
Max Cruise Speed	320ktas	593km/h
Max Ceiling	31,000ft	9,449m
Rate of Climb	2,005fpm	611mpm
Take off Distance	2,840ft	865m
Landing Distance	2,430ft	740m
MTOW	7,394lbs	3,354kg
Max Landing Weight	7,024lbs	3,186kg
Useful load	2,632lbs	1,194kg
Payload with full fuel	849lbs	385kg
Price	$2.79m	€2.18m

AN upgrade of the TBM-700, the single-turboprop TBM-850 is powered by an uprated Pratt & Whitney Canada PT6A-66D, which has single-crystal turbine blades enabling higher operating temperatures and, combined with a new compressor first stage, delivering enhanced high-altitude performance.

Currently the TBM-850 doesn't have a fully integrated flight deck – however it is believed that this could feature in the next upgrade. The company increased production during 2006 to accommodate a record order backlog of more than 50 aircraft. The company delivered 42 aircraft in 2006 and has 32 orders already in hand for 2007.

The main feature of the new six-seater is its speed–320 knots (590 km/h) at FL260 in ISA conditions. It is certified up to 31,000ft (9,449m) and will carry three passengers 1,520nm. Socata says that flying a "typical" (unspecified but thought to be the Cessna Citation Mustang) VLJ will save only seven minutes on a 500-nm trip. "But the direct operating costs will increase by 50 percent."

SPOTTER'S GUIDE

Although the TBM looks very similar to its rival the Piper Meridian, the TBM is distinguishable on the ramp because the weather radar radome is mounted into the leading edge of the port wing and the tailplane has visible dihedral to produce a 'V' upswept design. There are four windows each side on the passenger cabin.

HERITAGE

The TBM-850 has evolved from the TBM-700, originally a joint venture between Socata and Mooney, however Mooney pulled out shortly after the 700A was certified in 1991. Upgrades in 1999 and 2003 - 700B and 700C2. In December 2005 the 850 was announced as the successor to the C2 and entered service in February 2006.

IN DEVELOPMENT

EPIC AIRCRAFT EPICLT

SPOTTER'S GUIDE

The EpicLT has a sleek smooth design and can be confused easily with the Farnborough Aircraft's Kestrel. The LT has four round windows either side and the cabin door is aft of the wing and features the third window. The wing has a very slight sweep with a blended winglet and the horizontal stabiliser is mounted in line with the cabin windows. The tail fin is smooth and shark-like.

SPECIFICATION

Length	35' 10"	10.91m
Wingspan	43'	13.11m
Height	12' 6"	3.81m
Cabin Length	15' **	4.57m
Cabin Width	4' 7"	1.41m
Cabin Height	4' 11"	1.49m
Max Range	1,394nm	2,582km
Max Seating	1 + 5	
Typical Seating	1 + 5	
Powerplant	1x P&WC PT6A-67A	1,200shp / 894kW
Max Cruise Speed	350ktas	648km/h
Max Ceiling	31,000ft	9,449m
Rate of Climb	2,545fpm	776mpm
Take off Distance	1,800ft	549m
Landing Distance	1,800ft	549m
MTOW	7,700lbs	3,493kg
Max Landing Weight	7,700lbs	3,493kg
Useful load	3,400lbs	1,542kg
Payload with full fuel	1,541lbs	699kg
Price*	$1.25m	€0.97m

* In kit form **Front bulkhead to rear bulkhead

THE EpicLT is currently only available in kit form, but the factory will help build 49 percent of the aircraft – presently FAA legislation states that for an amateur built kit plane the owner must build a minimum of 51 percent.

The Pratt & Whitney PT6A-67A delivers 1,200shp (894kW) and can propel the LT to a maximum cruise speed of 350ktas (648km/h).

The LT offers a useful load of 3,400lbs (1,542kg) and a maximum range of 1,394nm (2,582km). It is able to seat four in the passenger cabin and needs only one pilot. With full fuel the aircraft is still able to offer 1,541lbs (699kg) of payload.

Although the take off and landing distances have not been confirmed, it is expected that to clear a 50' (15m) obstacle at both maximum take off and maximum landing weight will be less than 1,800ft (548m) for take off and landing.

HERITAGE

The LT is an all new composite design from Epic Aircraft, funded by Aircraft Investors Resource. Presently only available in kit form, the certification application process has begun with Transport Canada and approval is set for the third quarter of 2007. The kit version currently utilises a refurbished Pratt & Whitney PT6A-67A, whilst the certified version is due to have a PT6A-68.

EXTRA EA-500

SPOTTER'S GUIDE

The EA-500 features a high cantilever straight wing and a highly swept T-tail. The aircraft features three windows on each side. At the front is the single Rolls-Royce 450hp engine with a five-blade propeller.

SPECIFICATION

Length	33' 2"	10.12m
Wingspan	38' 3"	11.67m
Height	11' 1"	3.38m
Cabin Length	13' 6"*	4.14m
Cabin Width	4' 7"	1.4m
Cabin Height	4' 1"	1.2m
Max Range	1,673nm	3,100km
Max Seating	1 + 5	
Typical Seating	1 + 5	
Powerplant	1x Rolls-Royce 250-B17F/2	451SHP/336kW
Avionics	Honeywell	
Max Cruise Speed	230ktas	426km/h
Max Ceiling	25,000ft	7,620m
Rate of Climb	1,335fpm	406mpm
Take off Distance	2,050ft	625m
Landing Distance	1,991ft	607m
MTOW	4,696lbs	2,130kg
Max Landing Weight	4,409lbs	2,100kg
Useful load	1,610lbs	730kg
Payload with full fuel	390lbs	176kg
Price	$1.345m	€1.05m

*Cockpit to aft bulkhead

OWNER-flown business aircraft are attracting a lot of interest these days and the Extra EA-500 is one of the available aircraft that deserves more than a second look.

It utilises the successful EA-400 airframe, and is powered by the Rolls Royce 450shp model 250-B17F/2 engine and the MT Propeller five-bladed, reversible composite prop.

It also includes a state-of-the-art Honeywell avionics system, which is the standard avionics package for the aircraft.

The EA-500 has an all-carbon fibre composite airframe that is both lighter and stronger than traditional metal structures. The aircraft's high-wing design allows for stability in flight and superior air flow over the wing and fuselage.

Priced at $1.345 million it is the lowest cost certified single-engine turboprop on the market. It has a service ceiling of 25,000ft, however it cruises at lower altitudes without sacrificing fuel consumption and is certified for all-weather operations, including Flight Into Known Icing conditions, and is approved for landing on grass strips..

Without a floor wing spar, the EA-500's passenger compartment is similar in size to a King Air C90B with four club-style facing seats.

HERITAGE

The aircraft was designed by Walter Extra better known for his work with aerobatic aircraft. The German manufacturer went into liquidation but was bought by US investors in August 2003 and now has corporate offices in Pennsylvania. The EA500 was developed from the airframe of the EA-400. The six-cylinder piston aircraft seats a pilot and five passengers. The turboprop version received EASA certification in July 2004. FAA certification is due early 2007.

IN DEVELOPMENT

FARNBOROUGH AIRCRAFT F1 KESTREL

SPOTTER'S GUIDE

The Kestrel has a sleek design with a single turboprop PT6 and features three passenger windows on the left, with the cabin door at the rear.
On the right there are four passenger windows.
The wing has a very slight blended winglet with traditional mid-fuselage mounted horizontal stabilisers.

SPECIFICATION

Length	37' 5"	11.4m
Wingspan	43'	13.1m
Height	12' 7"	3.84m
Cabin Length	17' 7"*	5.36m
Cabin Width	5'	1.52m
Cabin Height	4' 7"	1.40m
Max Range (4)	1,712nm	3,170km
Max Seating	1 + 7	
Typical Seating	1 + 5	
Powerplant	1x P&W PT6A-67B	1,000shp / 746kW
Max Cruise Speed	352ktas	653km/h
Max Ceiling	31,000ft	9,449m
Rate of Climb	3,140fpm	957m
Take off Distance	1,795ft	547m
Landing Distance	1,822ft	555m
MTOW	7,000lbs	3,175kg
Max Landing Weight	6,650lbs	3,016kg
Useful load	2,993lbs	1,358kg
Payload with full fuel	1,093lbs	496kg
Price	$2.5m	€1.95m

*includes cockpit

FARNBOROUGH Aircraft Corporation's F1 Kestrel has been developed to utilise the smaller airports of the world to allow greater access and versatility for the operator. This single engine turboprop can seat up to eight and currently a single flying prototype has been built and is based at Farnborough airport, UK, although major assemblies could be built by GAMCO in Abu Dhabi following investment from the UAE. The certification flying will take place in the UK and it is expected to certify in early 2009. The Kestrel will be able to transport four passengers 1,712nm (3,170km) at 31,000ft (9,449m). Power is provided by a single Pratt & Whitney PT6A-67B with 1,000shp (746kW) and a maximum cruise speed of 352ktas (653km/h). The PT6 power enables the Kestrel to lift a useful load of 2,993lbs (1,358kg).

It offers good short field performance and will clear a 50' (15m) obstacle at its maximum take off weight of 7,000lbs (3,175kg) in as little as 1,795ft (547m). At maximum landing weight of 6,650lbs (3,016kg) it can be down and stopped, without using reverse pitch on the propeller, from 50' (15m) in 1,822ft (555m).

Coupled with a climb rate of 3,140fpm at sea level the Kestrel compares favourably with some ultra light and very light jets.

The preliminary specifications suggest that it may well become the benchmark for single engine turboprops of the future – with speeds similar to some ultra light and very light jets and a respectable IFR range.

HERITAGE

The Kestrel is a development of UK-based Farnborough Aircraft. It is an all new eight-seat composite pressurised turboprop and originally was brainchild of Richard Noble – more prominently known for developing the Thrust Supersonic Car.
The company has been embroiled in successful legal action against Aircraft Investor Resources with regard to the use of the Kestrel's wing design in the US company's Epic Jet which it is developing with Tblisi-based TAM.

IN DEVELOPMENT

GROB G160 RANGER

SPECIFICATION

Length	37 '8"	11.5m
Wingspan	46' 11"	14.3m
Height	11' 2"	3.4m
Cabin Length	16' 5"	5m
Cabin Width	5'	1.52m
Cabin Height	4' 8"	1.42m
Max Range (4)	1,800nm	3,300km
Max Seating	1 + 7	
Typical Seating	1 + 4	
Powerplant	1x P&WC PT6A-42A	850shp/634kW
Max Cruise Speed	270ktas	500km/h
Max Ceiling	25,000ft	7,620m
Rate of Climb	1,850fpm	564mpm
Take off Distance	2,415ft	736m
Landing Distance	2,130ft	650m
MTOW	7,937lbs	3,600kg
Max Landing Weight	7,275lbs	3,300kg
Useful load		
Payload with full fuel		
Price	$3m	€2.3m

CERTIFICATION of the all composite Ranger has been delayed primarily because Grob's priority has been switched to the SPn Light Jet, however the Ranger will probably be brought back to life after the SPn development is complete.

It will have a ceiling of 25,000ft (7,620m) and transport four passengers 1,800nm (3,300km). Powered by a single nose mounted Pratt & Whitney PT6A-42A with 850shp (643kW) it can cruise at a maximum of 270ktas (500km/h).

The cabin will feature a four place club with either an additional seat in the rear and lavatory, or simply two extra seats. It offers good short field performance and can clear a 50' (15m) obstacle at maximum take off weight (7,937lbs / 3,600kg) in as little as 2,415ft (736m). Coming back in to land without using reverse pitch it will land from 50' (15m) in 2,130ft (650m) at its maximum landing weight of 7,275lbs (3,300kg).

SPOTTER'S GUIDE

The engine is nose mounted making the nose look long and features a five bladed propeller. There are four passenger windows, and the rearmost on the left is fitted to the cabin door. The wing features a prominent winglet and has a traditional tail with mid-fuselage mounted horizontal stabilisers.

HERITAGE

It made its first public debut at the Paris Air Show in June 2003 however it was officially launched in April 2003 and made its maiden flight on 29 March 2004 at Tussenhausen-Mattsies, Germany. However certification has been put on hold whilst the SPn jet is being developed and brought to market by Grob and ExecuJet.

PIAGGIO P180 AVANTI II

HERITAGE

The Avanti was first launched in 1986 with first delivery in 1990 but its unusual design was a stumbling block and fewer than 100 aircraft were sold in 20 years. There is little exterior difference between the Avanti II and the original model.

SPECIFICATION

Length	47' 3.24"	14.41m
Wingspan	46' 0.48"	14.03m
Height	13' 0.90"	3.98m
Cabin length	14'11"	4.55m
Cabin width	6' 1"	1.85m
Cabin Height	5' 9"	1.75m
Max range (5)	1,509nm	2,795km
Max seating	9 + 2 crew	
Typical seating	6 + 1 crew	
Powerplant	2x P&WC PT6A-66B	850SHP/6.34Kw each
Max Cruise speed	398 KTAS	737km/h
Max ceiling	41,000ft	12,500m
Rate of climb	2,950 fpm	899 mpm
Take off Distance	2,850ft	869m
Landing Distance	2,860ft	872m
MTOW	12,100lbs	5,489kg
Max Landing	11,500lbs	4,965kg
Useful load	3,800lbs	5,216kg
Payload with full fuel	1,548lbs	703kg
Price:	$6.2m	€5.85

THE P180 Avanti II was launched in November 2004 at NBAA and certified by the FAA early in 2006.

The upgrade to the original Avanti was in response to pressure from the emerging range of very light jets and the revamped single-engined turboprops.

New features include Rockwell Collins Pro Line 21 avionics, uprated P&WC PT6A-66B turboprops, an increase in maximum take off weight from 11,960lbs (5,245kg) to 12,100lbs (5,489kg), a higher useful load, and a faster long-range cruise.

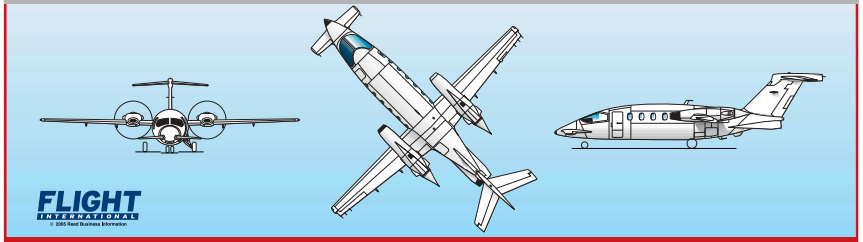
Standard on the Avanti II is a new lavatory designed by cabin interior company Stevens Aviation in the US. Piaggio completes its own aircraft in Europe.

The cabin will provide an extra 14" (10cm) in width, a reduction in weight of around 30lbs (14kg), and more storage space.

The popularity of the Avanti is manifested in the strong sales of the aircraft, notably from North American fractional ownership companies where some 60% of the world fleet is based. New York-based Avantair is the largest user of the type.

The high performance and reduced noise from the twin-pusher turboprop power plants give the feel and sound of business jet but the Italian manufacturers claim a 30 percent saving in fuel costs.

SPOTTER'S GUIDE



The Avanti has been dubbed the "Catfish" because of its unusual fixed forward wing (not a canard) which provides positive lift reducing the trim drag from the horizontal tail.

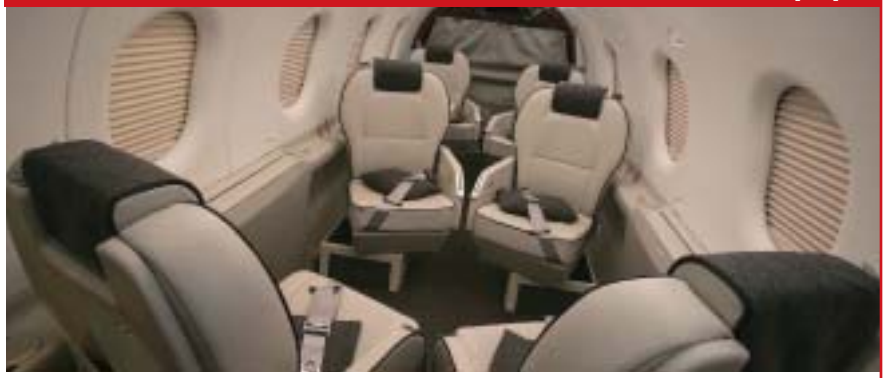
PILATUS PC-12

HERITAGE

The PC-12 was an all new design for Pilatus in their range of single engine PT6 powered aircraft. It was announced at NBAA in October 1989 and flew for the first time in May 1991. Certification was planned for mid 1993 – however Swiss and FAA certification were awarded in March and July of 1994 respectively. The main setback for the delay was a redesign of the wings to include winglets thereby ensuring that performance guarantees would be met.

SPECIFICATION

Length	47' 3"	14.40m
Wingspan	53' 4"	16.27m
Height	14'	4.26m
Cabin Length	16' 11"	5.16m
Cabin Width	5'	1.53m
Cabin Height	4' 9"	1.45m
Max Range (6)	1,106nm	2,050km
Max Seating	2 + 9	
Typical Seating	2 + 6	
Powerplant	P&WC PT6A-67B	1,200SHP/895kW
Max Cruise Speed	270ktas	500km/h
Max Ceiling	30,000ft	9,150m
Rate of Climb	1,600fpm	488mpm
Take off Distance	2,650ft	808m
Landing Distance	2,160ft	660m
MTOW	10,495lbs	4,740kg
Max Landing Weight	9,920lbs	4,500kg
Useful load	4,310lbs	1,955kg
Payload with full fuel	691lbs	313kg
Price	$2.875m	€2.24m

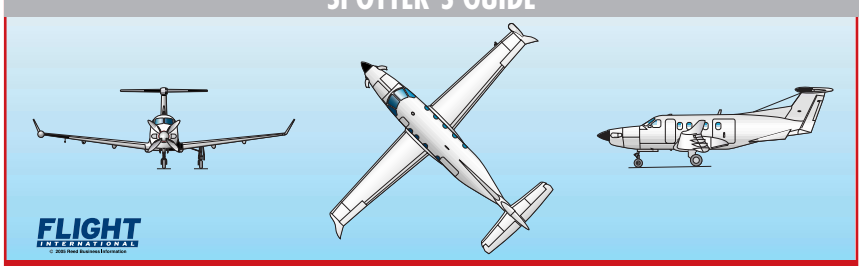


VERSATILITY with Swiss efficiency – that's the Pilatus PC-12. More than 600 of these workhorse aircraft are in operation. It is powered by a single Pratt & Whitney PT6A-67B producing 1,200shp (895kW) and can be configured with three different passenger interior styles – nine seat airliner, six seat corporate or a four seat/freighter combination. The majority of the sold aircraft are fitted with a corporate interior. The cabin is 16' 11" (5.16m) long, 5' (1.53m) wide and 4' 9" (1.45m) high.

It is certified for SPIFR (Single Pilot Instrument Flight Rules) operation and will fly six executives 1,106nm (2,050km) – there need not be a tarmac runway at the other end, the PC-12 is able to land on unprepared strips and is able to take-off and clear a 50' (15m) obstacle at gross weight in 2,650ft (808m), on landing with use of reverse thrust it can be down and stopped from 50' (15m) at maximum landing weight in just 1,830ft (557m).

The PC-12 is a capable aircraft in its class since 2006 it has offered an increased maximum take-off weight, 10,495lbs (4,740kg) and in 1998 a smaller winglet was introduced. It is has a useful load of 4,310lbs (1,955kg) and can cruise at 270ktas (500km/h) and a ceiling of 30,000ft (9,150m).

SPOTTER'S GUIDE



The PC-12 has a nose mounted engine with a four blade propeller. There are five cabin windows on the right-hand side and four on the left-hand side. It has a T-tail with an enlarged dorsal fin. When fitted with a weather radar this is fitted to the starboard wing close to the winglets.

PIPER MERIDIAN

SPECIFICATION

Length	29' 7"	9.02m
Wingspan	43'	13.11m
Height	11' 4"	3.44m
Cabin Length*	12' 4"	3.75m
Cabin Width	4' 1"	1.25m
Cabin Height	3' 11"	1.19m
Max Range	1,000+nm	1,885+km
Max Seating	2 + 4	
Typical Seating	1 + 4	
Powerplant	1x P&WC PT6A-42A	500SHP/373kW take off power
Avionics	Avidyne FlightMax Entegra	
Max Cruise Speed	260ktas	481km/h
Max Ceiling	30,000ft	9,144m
Rate of Climb	1,556fpm	474mpm
Take off Distance	2,438ft	743m
Landing Distance	2,110ft	643m
MTOW	5,092 lbs	2,310 kg
Max Landing Weight	4,850lbs	2,200kg
Useful load	1,720 lbs	780 kg
Payload with full fuel	564lbs	256kg
Price	$1.895m	€1.48m

*Instrument Panel to Rear Bulkhead

PIPER has been building airplanes for 70 years and the PA-46 Meridian is very much among the best ever.

The aircraft is a light six-seat pressurised business turboprop powered by a single Pratt & Whitney PT6A-42A with 500 SHP (373kW). Typically flown with a single pilot and four passengers the aircraft is able to cover 1,000+nm. With a take-off ground roll of 1,650ft (503m) it is also able to utilise smaller airfields and bring passengers close to their planned destinations.

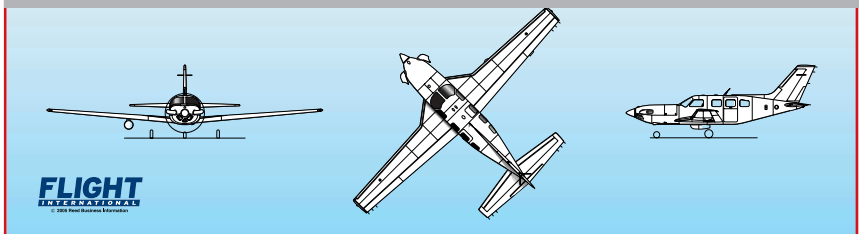
A pressurised cabin allows the aircraft to fly at 30,000ft. It is fitted with the Avidyne FlightMax Entegra and features three 10.4" displays - two Primary Flight Displays (PFDs), one for the pilot and another for a copilot, and the third, centrally mounted, Multi-Function Display (MFD).

HERITAGE

The present day Meridian is the evolution of the Piper PA-46 Malibu which had its first flight in November 1979. The type was announced in November 1982 and was powered by a 310hp (230kW) Continental TSIO-520 piston engine – 404 were built.

The Malibu was among the first aircraft to feature cabin pressurisation, a feature not included on the prototype. Subsequently the Malibu was upgraded in 1988, the changes incorporated a 350hp (260kW) Textron Lycoming TIO-540-AE2A and the new designation PA-46-350P Malibu Mirage, although it is now commonly known simply as the Piper Mirage, this model is still in production. In 1997 Piper announced its plans to develop a turboprop version fitted with the venerable and reliable Pratt & Whitney PT6, certification followed in September 2000 with the designation PA-46-500TP Malibu Meridian, again more commonly known as the Piper Meridian.

SPOTTER'S GUIDE



Although the Meridian looks very similar to the Socata TBM-850, the Meridian is distinguishable on the ramp because of the weather radar radome mounted on a pylon under the starboard wing. The tailplane is mounted horizontally and there are three rectangular windows each side on the passenger cabin.

IN DEVELOPMENT

QUEST KODIAK

SPOTTER'S GUIDE

The Kodiak is a high wing single engine turboprop featuring fixed tricycle undercarriage, however it is available with floats or as an amphibian. It has struts from the wings to the fuselage which join in front of the main landing gear. There are four passenger cabin windows on each side and a traditionally mid mounted horizontal stabiliser.

SPECIFICATION

Length	33' 4"	10.16m
Wingspan	45'	13.72m
Height	15' 4"	4.67m
Cabin Length	15' 6"	4.72m
Cabin Width	4' 6"	1.37m
Cabin Height	4' 9"	1.44m
Max Range	1,075nm	1,991km
Max Seating	2 + 8	
Typical Seating	2 + 6	
Powerplant	1x P&W PT6A-34	750SHP/559kW
Avionics	Garmin G1000	
Max Cruise Speed	190ktas	351km/h
Max Ceiling	25,000ft	7,620m
Rate of Climb	1,700fpm	518mpm
Take off Distance	1,200ft	366m
Landing Distance	1,660ft	505m
MTOW	6,750lbs	3,062kg
Max Landing Weight	6,750lbs	3,062kg
Useful load	3,450lbs	1,565kg
Payload with full fuel	1,306lbs	592kg
Price	$1.295m	€1.01m

BACKWOODS business? Outback, rough terrain or lakeland work? Then this aircraft under development is just right. The simple rugged design and versatility of the undercarriage – be it wheels, floats or an amphibian combination – means the Kodiak can get in and out of almost anywhere. Combine the ruggedness with a propeller clearance of 19 inches and it's certain to be able to handle the bumps and lumps 'off piste'.

At its maximum take off weight of 6,750lbs (3,062kg) it has a ground roll of 700ft (213m) and will clear a 50ft (15m) obstacle in 1,200ft (366m). The wing also makes use of discontinuous leading edge it creates a vortex that keeps airflow moving where you need it most. The result is that at speeds closer to stalling speeds, full aileron control can be maintained and thereby reduce approach speeds.

The Pratt & Whitney PT6-34 produces 750shp (559kW) and will lift a useful load of 3,450lbs (1,565kg). It has a range of 1,075nm (1,991km) and can cruise at a maximum of 190ktas (351km/h).

Up front it features a Garmin G1000 integrated avionics suite consisting of three displays and has VIP seating for six in the cabin. Although the cabin is not pressurised it does feature oxygen systems to allow the maximum cruise altitude of 25,000ft (7,620m) to be attained.

Having an un-pressurised cabin means the airframe is not limited in life by cycles but rather on condition.

HERITAGE

The Kodiak is the first offering form Quest Aircraft which started in 2001. The Kodiak is currently approaching the end of certification testing – having accumulated nearly 500 flight hours. The Kodiak was designed to be STOL (Short Take Off and Landing) with rugged construction. There needn't be tarmac at the other end. It is due to be certified to FAR Part 23 for day/night and VFR/IFR operation.