

formed a joint marketing venture, International Project 140, to supervise production, sales and support. The high-wing aircraft is powered by two Klimov TV7-117BMA-C62 turboprops, and made its first flight in September 1997.

In 1998 Antonov signed a contract with the Iranian government for the licensed production of An-140s, dubbed the IrAn-140. The aircraft are built from KhAPO-supplied kits by Iran's HESA.

Next year production at all three sites is to switch to the improved -100 model, which includes a 1m-longer wingspan and an increased MTOW of 21,500kg, allowing a 300km range increase at maximum payload. The -100 will better meet Iran's hot- and-high performance needs.

An An-140 crash in Iran at the end of 2002 killed many of the project's leading engineers and managers, along with senior representatives of the Iranian, Russian and Ukrainian aviation industries. They were flying to see the roll-out of the second IrAn-140.

Demand for the type is estimated at up to 100 in Russia and 20 in Ukraine, and Iran's requirement has been revised upwards to 200 from the original 80. In July the type secured its second overseas customer when Air Libya ordered five.

Production

The An-140 is produced by Aviakor in Samara, Russia, KhAPO in Kharkov, Ukraine and by Iranian Aviation in Isfahan, Iran. This year Aviakor will build one, KhAPO six, and Iranian four. Next year total production should reach 22-25, and at least 35 in 2005.

In service: 4

An-148

The twin-engined 70-seat An-148 is set for a first flight in March 2004. Developed from the An-74, the stretched, rewinged aircraft has improved range and performance. Design changes introduced this year aimed at further improving performance and boosting reliability

ANTONOV				
	An-32	An-38-100	An-74TK-300	An-140
Length (m)	23.68	15.67	28.07	22.43
Wingspan (m)	29.2	22.06	31.89	24.25
Height (m)	8.75	4.3	8.65	8.03
Wing area (m ²)	74.98	-	98.50	-
Cabin width (m)	2.78	1.87	2.5	2.6
Maximum take-off weight (kg)	27,000	9,500	36,500	19,150
Maximum landing weight (kg)	25,000	-	-	19,100
Operating empty weight (kg)	16,900	5,300	20,200	-
Maximum zero fuel weight (kg)	-	-	-	17,800
Maximum payload (kg)	6,700	2,500	10,000	6,000
Powerplant	2 x 5,180hp Ivchenko Progress ZMKB AI-20D-4/5	2 x 1,500hp Honeywell -TPE33114GR	2 x 14,330lb Progress D-36-4A	2 x Progress TV3-117VMA-02 or 2 x 2,750hp P&WC PW127 turbofans
Standard fuel capacity (litres)	-	2,860	16,250	-
Normal operating speed (kt)	-	205	374	-
Max cruise speed (kt)	286	219	381	310
Max operating altitude (ft)	31,000	14,000	38,715	23,620
Take-off field length (m)	760	350	-	-
Landing field length (m)	470	270	-	-
Accommodation (typical)	50	27	52	52
Design range with pax/payload	1,200km/6,000kg	1,450km/17	-	2,100km/52*

Note: *range data for P&WC-powered version

include switching to more powerful ZMKB Progress D-436-148 engines, which will be derated to extend their lives.

Antonov now plans a two-crew glass cockpit for the fly-by-wire An-148, using five LCDs and mostly Russian and Ukrainian avionics. Antonov is aiming at achieving ICAO Chapter 4-7dB noise compliance.

The An-148-100 will seat 70 in a five-abreast 34in pitch layout, and a stretched 90-seat and shrunk 50-seat variants are being studied. Three different MTOWs will allow the initial variant to have a range of 2,200-5,100km with 75 passengers.

First deliveries are set for late 2005 with Aeroflot, Antonov Airlines, Odessa Airlines and Volga-Dnepr expressing interest in the \$17 million aircraft. Aeroflot is to take 30 examples as it waits for Sukhoi's Russian Regional Jet to be ready after 2008. Total CIS carrier requirement is projected at 180 of the type.

Production

Three prototypes are being assembled at KhAPO in Kharkov, Ukraine, and discussions with VASO in Voronezh concerning Russian production have taken place.

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The former ATR (Avions de Transport Regional) consortium between EADS (formerly Aerospatiale) and Italy's Finmeccanica Alenia Aerospazio became ATR Integrated in 2001 and operates as a single company for marketing and sales of a family of turboprops.

ATR 42/72

The 48-seat ATR 42 first flew in 1984, followed by the stretched 64- to 74-seat ATR 72 in 1988. The latest PW127E-powered ATR 42-500 flew in 1995, followed by the ATR 72-500 featuring six-bladed propellers, increased weights and a new interior, which was certificated in 1997.

In 2000, DHL Aviation launched the ATR 42 freighter with a 5,800kg payload capacity. A large cargo-door 8,500kg capacity version of the ATR 72-200 was certificated last year, with the conversion performed by Aeronavali, and entered service with Swiss express cargo and charter airline Farnair. The first large cargo-door-equipped ATR 42 was delivered in October 2003 to Northern Air Cargo. ATR estimates a market for over 100 conversions, 40% with the large cargo door.

The programme received a boost in January, when FedEx Express confirmed its expected selection of the ATR 42 as its preferred regional freighter. The carrier acquired eight initial aircraft from Continental Airlines, but could operate 30 of the type. ATR believes FedEx requires up to 100 aircraft in the ATR 42's category. Although FedEx



NORTHERN AIR CARGO

Northern Air Cargo received the first ATR 42 fitted with a large cargo door in October