

## TUPOLEV

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### TU-154M

The Tu-154M is the current production version of the 160- to 180-seat Tu-154 tri-jet, which was first flown in October 1968. Initial versions (the Tu-154, -154A and -154B-2) were equipped with Kuznetsov NK-8 engines. The Tu-154M was announced in 1983, powered by Aviadvigatel D-30KU turboprops and with increased weights. The first Tu-154M was delivered to Aeroflot in late 1984, and around 400 have been built to date. All Tu-154s have the same fuselage length, with accommodation for 168-180 passengers, depending on layout. A cargo conversion, called the Tu-154S, with a large freight door on the forward fuselage, is also in service.

Tupolev is now offering an upgrade and modernisation programme for the Tu-154. Rybinsk Motors, which makes the D-30KU engine, has developed a modification which it claims reduces fuel consumption by 4-5%. The company is also developing a low-emission combustor, and a Stage 3 hushkit for the engine. Although it acknowledges that the silencer equipment adds weight and reduces economics, Rybinsk says that the kit will enable the maximum take-off weight and flap-setting limitations to be removed.

A twin-engined version of the Tu-154 had been proposed, dubbed the Tu-154M2, which would have been equipped with Perm PS-90s, and have a 2m stretch. The development of this aircraft is now thought to have been suspended.

**Delivered** 1,000-plus

### TU-204/214

The twin-engined Tupolev Tu-204 was first flown in January 1989, and the type was certificated by the Russian authorities in January 1995. ARIA received its first Tu-204, a -204C freighter, in April 1995. The initial version (the Tu-204-100) is powered by Perm PS-90 engines, and a higher-weight model, equipped with the PS-90, has also now been developed. Designated the Tu-214 (formerly the Tu-204-200), this aircraft had its first flight in March 1996, and has a MTOW increased to 110t.

A Westernised R-R RB.211-535E4B-powered variant, dubbed the Tu-224-120, was flown in August 1992. This aircraft is being marketed by Sirocco Aerospace International, which has been formed by the Egyptian company Kato Aromatic, ordering 30 Tu-204-120s for sale and lease in August 1996. A R-R-powered version of the Tu-204-200, dubbed the Tu-204-220 or Tu-224, is also planned.

The first five Sirocco Tu-204-120s will be completed with Russian avionics, but will have a new interior developed by the UK's Diamonite. The "Phase II" version will have an AlliedSignal Engines auxiliary-power unit and new navigation and communications equipment, while the definitive aircraft is being fitted



Sales of the R-R-powered Tu-204-120 are taking off, with Sirocco undertaking the marketing

with avionics supplied by AlliedSignal and Honeywell, including a system based on the latter's Versatile Integrated Avionics VIA2000 avionics suite.

Russian certification of the Tu-204-120 was awarded in July 1997. Work for JAA approval is under way, and certification is expected within two years. In August 1997, Sirocco signed deals with two launch customers involving 15 aircraft. KrasAir, based in the Siberian city of Krasnoyarsk, has concluded a deal for ten aircraft, while new Egyptian carrier Air Cairo has signed for five.

Aviastar Asia (AAC), a joint venture involving Aviastar and several South-East Asian financial institutions, opened its office in Taipei, Taiwan, in July 1996. The consortium will provide leasing, financial and technical support for the Tu-204. AAC is expected to order 20 Tu-204s and Tu-234s. AAC aims to place Tu-204s in what is perceived as the traditional Russian-airliner markets - Africa, Asia, the CIS, Eastern Europe, the Middle East and the Pacific rim.

**Production** The basic PS-90-powered Tu-204, R-R-powered Tu-204-120 and short-fuselage

Tu-234 are built by Aviastar at its factory in Ulyanovsk. Aviastar is targeting a production rate of six aircraft a month by 2001. A second assembly line at the Kazan Aircraft Production Factory in Kazan produces the higher weight Tu-214.

Tupolev is also said to be holding talks with Iranian officials over manufacturing the Tu-204, and the Tu-334, in Iran.

**Delivered** 16

### TU-234

Tupolev unveiled the Tu-234 in September 1995, a shortened version of the Tu-204. Formerly known as the Tu-204-300, the aircraft is powered by Aviadvigatel PS-90A turboprops and seats 160 passengers. A R-R powered version is also planned.

The Tu-234 has a fuselage 6m shorter than that of the Tu-204, and the prototype, which was created by the conversion of a Tu-204, was rolled out in August 1995.

This aircraft has not been flown, however, and the first production Tu-234 was completed by Aviastar in 1996. The timetable of the air-



Tupolev and Rybinsk are working to reduce the noise and emissions generated by the Tu-154M