

reserved for external fuel tanks. Series production continues, and more than 200 Foxhounds have been deployed. Reports of a sale of MiG-31s to China remain without substantiation.

Customers: CIS 300.

Article 1-42 Two prototypes of Mikoyan's fifth-generation fighter, referred to as Article 1.44s, have yet to fly, with the project suffering from serious underfunding. The project stems from the Soviet air force's multi-role fighter requirement established during the early- to mid-1980s. The aircraft is believed to be a close-coupled delta-canard twin-engine single-seat design in the 30t-35t-weight class.

Article 701 The 701 programme was Mikoyan's attempt to fill the Soviet air force's long-range multi-role interceptor requirement. The Mikoyan development has been cancelled. The aircraft may also have had a role as a long-range strike/reconnaissance aircraft.

MiG-AT

Mikoyan is competing with Yakovlev for the air force's replacement for its Aero L-39 Albatros jet trainer. The MiG-AT is a two-seat low-wing monoplane advanced jet trainer, with the prototype being rolled out in May 1995. It is expected to be flown before the end of this year.

MYASISHEV

M-17 Mystic The M-17 is a single-jet-engined high-altitude reconnaissance aircraft with high-aspect-ratio wings and a twin-boom tail. The aircraft was first reported in the West in 1982 as the Ram-M, being operated from what was then known as the Ramenskoye test centre, now known as Zhukovsky. It was intended to replace the Yak-25RD. The M-17 is believed to be powered by a Lotarev D-18T or Soloviev PS-90A turbofan and is capable of 405kt.

M-55 Myasischev's two-engined derivative of the M-17 Mystic, the M-55, was designed to a Soviet air force strategic-reconnaissance specification and is powered by two non-afterburning Soloviev PS-30-V12s, supplying 49kN each. The engine is a derivative of the D-30-F6 used in the MiG-31 Foxhound, with combustion chamber and turbine modified for subsonic, high-altitude flight.

The high-aspect-ratio wing has a lift/drag ratio better than 19:1. The aircraft can thus glide 200km from 66,000ft. Two M-55 prototypes are flying, and the first two pre-production aircraft have been built and are waiting to have equipment fitted. The air force continues low-rate funding to keep the development alive. The sensor package on offer includes an A-84 camera, providing a 120km swathe of coverage centred on the flightpath, from 66,000ft. Testing of the complete surveillance set finished by 1993.

SUKHOI

Su-24 Fencer The Fencer is no longer in production and the air force intends to replace the aircraft in certain roles with the Su-27IB (Su-34). Syria received 20 Su-24 Fencer two-seat variable-geometry all-weather interdiction/strike aircraft in 1990. Deliveries to Libya began in 1989. Some 900 Su-24 Fencers were produced for the Soviet air force, with the low-level, terrain-following aircraft equipping units of Frontal and Naval Aviation.

Six versions have been identified: the Fencer B differs from the initial Fencer A in having a brake-parachute bullet fairing at the base of the fin; the Fencer C, introduced in 1981, has this feature as well as radar-warning receiver antennae on the fin and intakes. A modified Su-24MK Fencer D has an air-refuelling probe and can be operated as a tanker with buddy-refuelling pack. Improved EW systems and special design measures enhanced survivability. The Fencer E is a reconnaissance version retaining missile capability. The Fencer F is an EW aircraft.

Customers: CIS 860+, Iraq 24, Libya 15, Syria 20.

Su-25 Frogfoot The latest development of the Su-25, the Su-25T, remains under test at Akhtubinsk. It intended to improve the aircraft's anti-armour capability with the Vikhr laser-beam-riding anti-tank missile.

The Su-25 is powered by two 40kN un-reheated R-

95Sh versions of the MiG-21's Tumansky R-13 turbojet. The 17,530kg maximum take-off weight includes 4,340kg of stores on ten underwing pylons, the inner pair plumbed for external tanks, the outer pair for short-range R-60 air-to-air missiles. A two-seat Su-25UB operational trainer has been produced since 1987.

A demilitarised Su-25UT variant was also offered as a basic trainer for the CIS air force, because the Czech Republic, the traditional supplier of the L-29 and L-39 jet trainers to Russia, now wants hard currency for its exports. In November 1989, a navalised two-seat derivative, the Su-25UTG, took part in test landings and ski-jump take-offs from the aircraft carrier Admiral *Nikolay Kuznetsov*.

Customers: CIS 250+, Czech and Slovak Republics 50+, Hungary 50+, Iraq 25+, North Korea 20+, Syria 60+.

Su-27 Flanker Russia and China are thought to have resolved payment difficulties which have hampered the sale of a second batch of the Su-27 Flanker to China. An initial batch is now being introduced into service. This is the first export deal for the type, re-opening CIS weapons sales to China after 30 years. Licence production of the Flanker in China now appears a distinct possibility. Powered by two 123kN Lyulka AL-31Fs, the Su-27, Sukhoi project T-10, entered service with the Soviet air-defence forces in 1984. Its pulse-Doppler radar has an estimated range of 185km, offering look-down/shoot-down capability and track-while-scan mode. An infra-red sensor with laser rangefinder is fitted for short- to medium-range target acquisition and tracking, and a helmet-mounted sight presents another option. The two-seat Su-27UB (T-10U) retains full combat capability and is used in both operational and training roles.

Although similar in general layout to the MiG-29, having twin-engined, twin-tailed, configuration, with leading-edge extensions, the Su-27 is about 30% larger overall. The Flanker features an intake screen, which rises to exclude foreign objects when operating from prepared rough strips. The 30t maximum take-off weight includes 10t of internal fuel, giving a range of 4,000km. Development of the Su-27 began in 1969. Twelve T-10 prototypes were built.

The first production-configuration Su-27 was flown on 20 April, 1981. Following extensive land-based testing, landing and ski-jump-assisted take-off trials took place aboard the carrier Admiral *Nikolay Kuznetsov* in late 1989. These involved a navalised Su-27K (T-10K), with moveable foreplanes, folding wings and tailplane, strengthened landing gear and an arrestor hook, but not the Flanker B's infra-red sensor. The first Su-27K squadron is now working up.

Customers: CIS 500+, China 24+.

Su-27M (Su-35) Sukhoi's Su-27M (T-10M) programme is intended effectively as a mid-life update to the basic Flanker. So far, some dozen prototype and pre-production aircraft have been manufactured. The latest to be shown publicly, aircraft 711, was fitted with thrust-vectoring nozzles. As of October 1995, it had yet to be flown. A picture of a fixed phased-array antenna fitted to an Su-35 was shown by NII at the Moscow air show in August 1995.

Su-30/Su-30MK The Su-30 (T-10PU) is intended to provide the Su-27 with a fighter-controller aircraft, capable of handing off targets to other aircraft via a datalink. Sukhoi is also developing the Su-30MK, a multi-role development of the Su-30, for the export market. The Su-30's N-001 radar only has air-to-air modes, while the Su-30MK will have a multi-mode radar capable of air-to-ground operation.

Su-27IB (Su34/Su-32FN) The Sukhoi Su-27IB (Istrebitel-bombardirovshchik-fighter bomber), the side-by-side two-seat variant of the Flanker Interceptor, was exhibited at Minsk in February 1992. At least three aircraft are flying with a fourth also completed. Reports indicate that the Novosibirsk Chkalov production plant is now building a further two aircraft. The role of the Su-27IB was initially deliberately confused. It was first seen making approaches to the carrier *Kuznetsov* but this

was only to evaluate side-by-side seating suitability for carriers. The aircraft has no naval role and the example shown at Minsk had no arrestor hook or wing/tailplane folding.

The aircraft at Minsk was displayed armed for the defence-suppression role, with two high-speed Kh-31P anti-radar missiles carried under the fuselage, 500kg laser-guided bombs on the inner wing pylons and, outboard of them, television- and laser-guided Kh-29 air-to-surface missiles. The outer pylons carried R-73 infra-red-guided air-to-air missiles and a 30mm cannon buried in the starboard chine. A retractable flight-refuelling probe is on the port side of the nose. This aircraft has a metal nose and no radar. The airframe is also likely to form the basis of both Su-27R reconnaissance and Su-27IBP fighter-bomber/jammer projects.

T-60S Sukhoi is working on a bomber programme, referred to as the T-60, to replace the Tu-22M Backfire. The design bureau remains reticent about discussing this project beyond admitting its existence.

Future fighter The design bureau continues to examine future fighter designs, although it has yet to provide any information on what these projects actually constitute.

TUPOLEV

Tu-22M Backfire The Tu-22M is no longer thought to be in production, although the airframe continues to be used as a basis for modifications. The latest to be shown was the prototype Tu-22MR reconnaissance aircraft now under test at Akhtubinsk.

Despite repeated rumours, Tupolev denies that it has supplied any Tu-22Ms to Iran. Ukraine, however, has been looking to offload some Tu-22Ms.

The Backfire, although having almost nothing in common with the Tu-22 Blinder, was designated as a modernisation programme of the latter to ensure the availability of funding. A special decision of the Government and central committee of the Communist party would have been necessary to start development of a new aircraft, but a modernisation programme could be approved at a lower level. Tupolev and the Soviet air force paid the price, therefore, of pretending to develop a refined Tu-22M Blinder to start the work and there were no attempts to give the Backfire a new Soviet designation.

Customers: CIS 400+.

Tu-95/142 Bear Production of the Bear has now ceased. The latest version of the long-range four-turboprop Tu-95 bomber (NATO codename Bear), carrying the subsonic 3,000km-range AS-15 Kent cruise missile, entered service late in 1984. The Bear H carries at least four AS-15s, two under each inboard wing section, and may carry more internally. The Bear H was also intended to carry the long-range AS-X-19 cruise missile, although this programme has been cancelled. The Bear airframe has also been used recently as the launch platform for at least two long range stand-off missile projects, the Raduga Kh-101 subsonic cruise missile, and a *Raduga hypersonic ramjet missile*. India operates eight maritime-reconnaissance Tu-142Ms.

Customers: India 8, CIS 225+.

Tu-160 Blackjack Five Tu-160 Blackjack aircraft are in service at the Russian air force's Engels strategic bomber base. The sustainability of such a small force must remain questionable. The bulk of production Tu-160s remain in Ukraine following the break-up of the Soviet Union. The Mach 2 aircraft became operational late in 1989, carrying 3,000km-range AS-15 Kent subsonic cruise missiles and AS-16 Kickback short-range attack missiles on an internal rotary launcher. Production has been halted far short of the expected 100 aircraft.

Customer: CIS 40+.

Yakovlev Yakovlev's Yak-41 Freestyle ASTOVL fighter and the Yak-44 AEW programme, associated with the Soviet Union's conventional carrier programme have been abandoned.