= Alekseyev I @-@ 212 =

The Alekseyev I @-@ 212 was a twin @-@ engined , jet fighter designed in the USSR in 1947 at OKB @-@ 21 (OKB - experimental design bureau) . It was a two @-@ seat variant of the I @-@ 21 (Istrebitel ' - Fighter) designed in response to a requirement for a very long @-@ range fighter issued by the Voenno @-@ Vozdushnye Sily (VVS) , (Soviet Air Forces) , in 1946 . Intended as an escort fighter , it was also designed for use as a night fighter and reconnaissance aircraft . Sources are unclear whether a prototype was built , but it is known that the aircraft never flew .

= = Development = =

After working as Lavochkin 's right @-@ hand man during World War II , Semyon Alekseyev was appointed as Chief Designer of OKB @-@ 21 at Gor 'kiy in 1946 . The Council of the People 's Commissars directed Alekseyev , among others , to develop jet fighters using more powerful engines than the captured German examples and Soviet @-@ built copies . The OKB was tasked to design a single @-@ seat jet fighter that could meet the very demanding specification of a maximum speed of 980 km / h (610 mph) and a range of 3 @,@ 000 km (1 @,@ 900 mi) with drop tanks . The OKB responded with the I @-@ 21 , which was planned to be built in several variants .

Development of the I @-@ 212 , one such variant , began in 1947 as a twin @-@ engined , all @-@ metal , two @-@ seat jet fighter . The round , streamlined fuselage was optimized to reduce drag and house the considerable amount of equipment and fuel required by the VVS . It had mid @-@ mounted straight laminar flow wings and the engine nacelles were mounted in the middle of the wing , with the wing spars continued by banjo rings around the engines . The cruciform tail unit was swept at 45 ° . To save weight , the main load @-@ bearing structures of the airframe were constructed from V @-@ 95 aluminum alloy and high @-@ strength steel . Elektron (a magnesium alloy) was used for many components and castings . The aircraft used a tricycle undercarriage with the main wheels retracting into the fuselage . Hydraulically actuated air brakes were fitted either side of the rear fuselage .

The pilot and gunner / radio operator sat in tandem , back to back in a single pressurized cockpit , protected by armour plates to their front and rear , as well as by a bulletproof windscreen , seated on ejection seats . The aircraft was intended to use Klimov VK @-@ 1 engines , a derivative of the Rolls @-@ Royce Nene , but the Klimov engine was still under development , so Kuznetsov RD @-@ 45s were substituted instead . The aircraft carried a Toryii @-@ 1 radar for use by the gunner / radio operator .

Armament was to have been mounted in the nose and a remote controlled tail barbette , with variations of 20 mm (0 @.@ 787 in) Berezin B @-@ 20 cannon , or 23 mm (0 @.@ 906 in) Nudel 'man Suranov NS @-@ 23 cannon in a remote @-@ controlled barbette and 23 mm (0 @.@ 906 in) Nudel 'man Suranov NS @-@ 23 cannon , 37 mm (1 @.@ 457 in) Nudel 'man Suranov NS @-@ 37 cannon and 45 mm (1 @.@ 772 in) Nudel 'man Suranov NS @-@ 45 in the nose of the aircraft . A single hardpoint under each wing could carry a single 500 kg (1 @,@ 100 lb) bomb or a drop tank carrying 550 kg (1 @,@ 210 lb) of fuel .

A prototype reportedly began taxiing tests on 30 June 1948 , but there is no evidence that it flew at any time , however , it is also unclear if a prototype was actually built . A training version designated UTI @-@ 212 was planned if the aircraft had gone into production . The I @-@ 217 variant , in two versions with forward @-@ swept and sweptback wings , did not proceed beyond the drawing board .

= = Variants = =

I @-@ 212
Initial version , never built .
I @-@ 214
Proposed version with the tail barbette replaced with a rearwards @-@ facing radar and heavier

forward @-@ facing armament .
I @-@ 217
Project with forward @-@ swept and sweptback wings .
UTI @-@ 212
Proposed training variant of the I @-@ 212 .

= = Specifications (I @-@ 212 RD @-@ 45 engines) = =

Data from The Osprey Encyclopedia of Russian Aircraft 1875 @-@ 1995 , Early Soviet Jet Fighters

General characteristics
Crew : 2
Length : 13 @.@ 08 m (42 ft 11 in)
Wingspan : 16 @.@ 2 m (53 ft 2 in)
Wing area : 33 m2 (360 sq ft)
Gross weight : 9 @,@ 250 kg (20 @,@ 393 lb)
Max takeoff weight : 10 @,@ 500 kg (23 @,@ 149 lb)
Powerplant : 2 × Kuznetsov RD @-@ 45 centrifugal compressor turbojet , 22 kN (5 @,@ 000 lbf) thrust each
Performance
Maximum speed : 1 @,@ 000 km / h (621 mph ; 540 kn)
Range : 2 @,@ 300 km (1 @,@ 429 mi ; 1 @,@ 242 nmi)
Ferry range : 3 @,@ 100 km (1 @,@ 926 mi ; 1 @,@ 674 nmi)
Service ceiling : 14 @,@ 800 m (48 @,@ 556 ft)
Rate of climb : 30 m / s (5 @,@ 900 ft / min)
Armament
Guns :
4x 23 mm (0 @.@ 906 in) Nudel 'man Suranov NS @-@ 23 cannon with 150 rpg .
2x 20 mm (0 @.@ 787 in) Berezin B @-@ 20 cannon in a remote @-@ controlled tail barbette .
or
1 × 37 mm (1 @.@ 457 in) Nudel 'man N @-@ 37 cannon .
2 × 23 mm (0 @.@ 906 in) Nudel 'man Suranov NS @-@ 23 cannon .
2x 20 mm (0 @.@ 787 in) Berezin B @-@ 20 cannon in a remote @-@ controlled tail barbette .
or
2x 23 mm (0 @.@ 906 in) Nudel 'man Suranov NS @-@ 23 cannon with 150 rpg .
1x 45 mm (1 @.@ 772 in) Nudel 'man Suranov NS @-@ 45 cannon with 40 rpg .
2x 23 mm (0 @.@ 906 in) Nudel 'man Suranov NS @-@ 23 cannon in a remote @-@ controlled barbette .
Hardpoints : 2 with provisions to carry combinations of :
Bombs : 2x 500 kg (1 @,@ 100 lb) bombs .
or
Other : 2x 550 kg (1 @,@ 210 lb) capacity drop tanks .
Avionics
Toryii @-@ 1 radar , Navigation aids and radios .