= Tupolev Tu @-@ 85 =

The Tupolev Tu @-@ 85 (USAF / DoD reporting name ' Type 31 ' , NATO reporting name Barge) was a Soviet prototype strategic bomber based on the Tu @-@ 4 , an unlicensed reverse engineered copy of the Boeing B @-@ 29 Superfortress . It was the ultimate development of the B @-@ 29 family , being over 50 % heavier than its ancestor and had nearly double the range . Only two prototypes were built before the program was canceled in favor of the Tupolev Tu @-@ 95 bomber which was much faster and had the same range .

= = Development = =

Neither the Tu @-@ 4 nor the Tupolev Tu @-@ 80 was a true intercontinental strategic bomber as they both lacked the range to attack the United States from bases in the Soviet Union and return . The Tu @-@ 85 was designed to achieve the necessary range by use of more powerful and fuel @-@ efficient engines , a redesigned wing to increase the lift / drag ratio and the addition of more fuel . A large number of engines were considered before settling on the 4 @,@ 500 @-@ horsepower (3 @,@ 400 kW) Shvetsov ASh @-@ 2K , essentially two air @-@ cooled ASh @-@ 82 radial engines paired together and the liquid @-@ cooled 4 @,@ 300 @-@ horsepower (3 @,@ 200 kW) Dobrynin VD @-@ 4K six @-@ bank inline engine , similar in configuration to the failed German Junkers Jumo 222 . Both engines were given turbochargers and power @-@ recovery turbines which converted them into turbo @-@ compound engines . The Shvetsov design was preferred , but was not yet mature enough for use , and the VD @-@ 4K was selected . A lot of effort was put into refining the design of the wing in collaboration with TsAGI . It had an aspect ratio of 11 @.@ 745 and a taper of 2 @.@ 93 for optimum lift at high @-@ altitudes . The Tu @-@ 85 carried 63 @,@ 600 litres (16 @,@ 800 US gal) of fuel in 48 flexible tanks .

Much of the armament and equipment was derived from those of the late @-@ model Tu @-@ 4 , including the four remotely controlled dorsal and ventral turrets and the tail turret , each with two 23 mm (0 @.@ 91 in) Nudelman @-@ Rikhter NR @-@ 23 cannon . But the Tu @-@ 85 's tail turret had an Argon ranging radar and each of the two bomb bays was enlarged to hold a 9 @,@ 000 kg (20 @,@ 000 lb) FAB @-@ 9000 bomb .

Actual design work began in August 1949 and was ratified by a directive from the Council of Ministers dated 16 September that required the first prototype to be ready for manufacturer 's tests in December 1950 . Construction of the first aircraft began in July 1950 and was completed in September . It first flew on 9 January 1951 and the manufacturer 's tests lasted until October 1951 . On 12 September the first prototype flew 9 @,@ 020 km (5 @,@ 600 mi) with a bomb load of 5 @,@ 000 kg (11 @,@ 000 lb) and landed with enough fuel remaining to have covered 12 @,@ 018 km (7 @,@ 468 mi) . The second prototype , sometimes referred to as the 85D (Russian : dooblyor) or 85 / 2 , incorporated the lessons learned from the first aircraft , including revision and reinforcement of the airframe and a variety of changes to its equipment and systems . It was first flown on 28 June 1951 and its trials lasted until November 1951 . Series production was approved on 23 March 1951 at three factories where it would succeed the Tu @-@ 4 on the production line , but this was reversed later in the year and the program was cancelled : in the Korean War Soviet MiG @-@ 15s brought down many US B @-@ 29 bombers , showing that there was no future for piston aircraft in combat use . Priority was given to the higher performance turboprop Tu @-@ 95 ' Bear ' , as its own turboprop powerplants , the TV @-@ 12 prototype series for the Kuznetsov NK @-@ 12 turboprops that power the Tu @-@ 95 to this day , was already generating 12 @,@ 000 shp as early as 1951 .

= = Specifications (Tu @-@ 85 / 1) = =

Data from Gordon , OKB Tupolev : A History of the Design Bureau and its Aircraft
General characteristics
Crew : 11 ? 12

Length : 39 @.@ 306 m (128 @.@ 96 ft)
Wingspan : 55 @.@ 96 m (183 @.@ 6 ft)
Height : 11 @.@ 358 m (37 @.@ 26 ft)
Wing area : 273 @.@ 6 m ² (2 @,@ 945 ft ²)
Empty weight : 54 @,@ 711 kg (120 @,@ 364 lb)
Loaded weight : 76 @,@ 000 kg (167 @,@ 200 lb)
Max. takeoff weight : 107 @,@ 292 kg (236 @,@ 534 lb)
Powerplant : 4 × Dobrynin VD @-@ 4K turbo @-@ compound radial engines , 3 @,@ 200 kW (4 @,@ 300 hp) each
Performance
Maximum speed : 638 km / h (344 kn , 396 mph)
Range : 12 @,@ 000 km (6 @,@ 500 nmi , 7 @,@ 457 mi)
Service ceiling : 11 @,@ 700 m (38 @,@ 376 ft)
Rate of climb : 17 m / s (3 @,@ 280 ft / min)
Wing loading : 277 kg / m ² (57 lb / ft ²)
Power / mass : 170 W / kg (0 @.@ 10 hp / lb)
Armament
Guns : 10 × 23 mm Nudelman NR @-@ 23 cannons , two each in four turrets plus tail barbette
Bombs : up to 18 @,@ 000 kg (40 @,@ 000 lb) of bombs