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That Curious Beast—the Russian Yak-25

A Red Airpower Feature

One thing the Russians are counting on in the event of an all-out war with the United States is that they will be able to defend their homeland from aerial invasion by the US Strategic Air Command. One important set of tools they have in their defense system is the YAK-25 — models A, B, and C.

The first of the YAK-25s appeared in 1951. It soon was code-named Flashlight by NATO, following its appearance of East Germany. Then the type disappeared from the scene for nearly four years, only to reappear again in 1955 in a somewhat souped-up version. The 1955 version had a rounded or blunt nose that stuck well forward of the two engine pods mounted beneath the sweptback wings.

In 1956, two additional versions appeared — the B and C models. Apparently the first and third models, the A and C, were assigned to the Russian equivalent (more or less) of our Air Defense Command. The YAK-25B, which has a “greenhouse” nose for good visibility, is considered as a light bomber, and acts either in support of ground-troop operations or as a reconnaissance airplane.

The YAK-25s — designed by the youngest of the major Soviet airplane designers, Alexander Yakovlev — have large fuselages to handle radar equipment and extra fuel. The wings of the A model are swept back forty-two degrees along the leading edge. The outer sections of the wing have constant chord and grow progressively thinner toward the tip. Those who have seen the A model airplane say it exhibits good flight stability and is reasonable slow on takeoff and landing. There are two boundary layer fences on each wing, attached at the one-third and two-thirds marks.

The vertical stabilizer is large and starts about two-thirds of the way back on the fuselage. The horizontal stabilizer is mounted about halfway up the vertical stabilizer.

Like the French S.O.-4050 Vautour, the YAK-25A has a tandem landing gear, which can be retracted into the fuselage. Auxiliary wheels at the ends of the wings retract into the wingtips.

The fuselage is the fuselage is cylindrical, with air brakes on each side about two-thirds of the way back.

The B and C models of this aircraft are distinguished from the A model by longer engine nacelles, by more sweepback in the inner panels of the wing, a slightly larger wing, and their different noses. The A model has a blunt, rounded nose that apparently houses radar; the B model has the greenhouse nose to afford good visibility; and the C model has a pointed nose that appears to house radar and seems to be constructed of the same material as the A model.

Total wing area of the B and C models has been increased by thirty-two square feet. The change in sweepback undoubtedly has increased the plane's Mach level, and it also has reduced wing loading while increasing the space available for fuel.

The C model is a little faster than the other two (*see accompanying table*), with a top speed of 770 miles per hour, compared to 705 and 695 for the A and B models respectively. Cruising speed for the tree designs, in alphabetical order, is 600, 607, and 640 mph for an altitude of 23,000 feet.

Flashlight A has an operational ceiling of 50,840 feet; Flashlight B will achieve 53,000 feet; and the C model, 57,700 feet.

The B model is slightly heavier when assigned its usual operational load, which includes four one-ton (metric) bombs. All three models are equipped with 76-mm. remotely controlled rockets as well as two 37-mm. Nudelmann guns. Russian rockets, particularly those used in aircraft, are believed to have reached a high state of development, fully competitive with the West.

The rather good rang and speed of these all-weather interceptors and support craft is in keeping with the fact that Russia has few airports (compared with the West) from which aircraft of this type can operate, which means they must be capable of striking an invading bomber force from a considerable distance. Also, Russia must protect a vast border area, which stretches air defenses — and so interceptors must have more range.

For example, because most targets in Russia are rather more inland than those in the United States, invading bombers would have a longer period over Soviet territory. This would give the YAK-25A and C a greater period of time in which to find and hit SAC's bombers.

The engines in Flashlight A are designated TA-10s, possible indicating that they are the work of engine designer Tamasov of the Mikulin engine design bureau. They have ten compressor stages, and a single-stage turbine. They have a static thrust rating of 8,000 pounds each.

There are small hoods sticking out from the starboard side of the engine nacelles, presumable to provide air intakes for oil cooling.

In all cases the aircraft carries a crew of two men — a pilot and radar operator or bombardier. The radar equipment is similar to that used in the US in that it can be locked on target and the rockets fired when Flashlight comes within range. The B's rockets can be used against ground targets.