KA-50 BLACK SHARK ATTACK HELICOPTER, RUSSIA



Ka-50 Attack Helicopter.

The Ka-50 Black Shark helicopter, developed by Kamov Helicopters JSC, carries the NATO codename Hokum A, Hokum B being the two-seat version, Ka-52. Ka-50 is also known as Werewolf. It is a high performance combat helicopter with day and night capability, high survivability and fire power to defeat air targets and heavily armoured tanks armed with air defence weapons. It entered service in the Russian Army during 1995 and is manufactured at the Sazykin Aviation Company Progress based in Arseniev Maritime Territory, Russia. A first batch of eight Ka-50 aircraft has been delivered. 12 Ka-52 were to be procured for Russian Air Force special operations in 2005, but funding for the programme has been cut from the 2005 budget.

A night attack version, Ka-50N, with Samshit-50T thermal imager, day TV and laser rangefinder has been developed, and Kamov has also joined with Israeli Aircraft Industries (IAI) to produce a version, the Ka-50-2 Erdogan that is compatible with NATO weapons and has an Israeli equipped cockpit.

DESIGN

The coaxial rotor design provides a hovering ceiling of 4,000m and vertical rate of climb of 10m/s at an altitude of 2,500m. The rotor blades are made from polymer materials. The coaxial-rotor configuration results in moments of inertia values relative to vertical and lateral axes being between 1.5 to 2 times less than the values found in single rotor helicopters with tailrotors. Absence of the tail rotor enables the helicopter to perform flat turns within the entire flight speed range. A maximum vertical g-load of 3.5 combined with low moments of inertia give the Ka-50 a high level of agility.

Extensive all-round armour installed in the cockpit protects the pilot against 12.7mm armour piercing bullets and 23mm projectile fragments. The rotor blades are rated to withstand several hits of ground-based automatic weapons.

The Ka-50 is the world's first operational helicopter with a rescue ejection system, which allows pilot to escape at all altitudes and speeds. The K-37-800 Rocket Assisted Ejection System is manufactured by the Zvezda Research and Production Enterprise Joint Stock Company in the Moscow Region.

WEAPONS

A combination of various armaments to a maximum weapon load of 2t can be selected according to the mission, including anti-tank missiles, unguided aerial rockets of different calibres, air-to-air missiles, guns, bombs and other weapons.

The helicopter has small mid-mounted wings fitted with four under wing suspension units and wingtip countermeasures pods. Up to 12 Vikhr supersonic antitank missiles can be mounted on the helicopter's two underwing external stores. The laser beam riding Vikhr missile is stated as having a target hit probability close to one, against a tank at a range of up to 8km, and the capability of penetrating all types of armour including active Armour up to 900mm thick.

The Ka-50 is armed with a 2A42 quick-firing 30mm gun which has an unrestricted azimuth and elevation range mounting for use against airborne or ground targets. The gun is equipped with 460 rounds of ammunition, two types being carried, high-fragmentation and explosive incendiary rounds and armour-piercing rounds. The pilot selects the type of ammunition in flight. The weight of the ammunition is 0.39kg each round, the muzzle velocity is 980m/s and the range is up to 4km. The gun provides an angular firing accuracy of 2 to 4 mrad.

AVIONICS

Flight systems include inertial navigation system (INS), autopilot and head-up display (HUD). Sensors include FLIR (forward-looking infrared) and terrain-following radar.

COUNTERMEASURES

Ka-50 is fitted with radar warning receiver, electronic warfare system and chaff and flare dispenser.

ENGINES

The Ka-50 is powered by two TV3-117VMA turboshafts engines each providing 2,200hp. The engines are placed on either side of the fuselage to enhance the combat survivability. The helicopter also has an auxiliary power unit (APU) for self-contained operation.

SPECIFICATIONS - KA-50 BLACK SHARK ATTACK HELICOPTER, RUSSIA

Dimensions

main rotor diameter	14.5 metres
length with rotating rotors	15.9 metres
overall height	4.9 metres
wing span	7.3 metres
Weights	
empty weight	7,692 kg

normal take off weight	9,800 kg
maximum take off weight	10,800 kg
weight of consumable combat load	610 kg
weight of maximum combat load	1,811 kg
Engines	
two TV3-117vma engines	2 x 2,200 h.p
landing gear	retractable tricycle nosewheel type landing gear
Performance	
maximum level flight speed	310 km/h
diving speed	390 km/h
cruise speed	270 km/h
hovering ceiling	4,000 metres
service ceiling	5,500 metres
vertical rate of climb at 2,500 m	10 m/s;
range of flight with normal take-off weight	460 km
ferry range	1,160 km



Ka-50 is fitted with four underwing suspension units and wingtip countermeasures pods



The Ka-50 entered service in the Russian Army in 1995



Ka-50 Black Shark Attack Helicopter on patrol.



Maximum combat weapon load of 2t is selected according to combat mission



It can be equipped with up to 12 Vikhr laser beamriding antitank missiles



The Ka-52 the 2 seater version of the Ka-50



The Ka-50 is powered by two TV3-117VMA turboshaft engines each providing 2,200hp