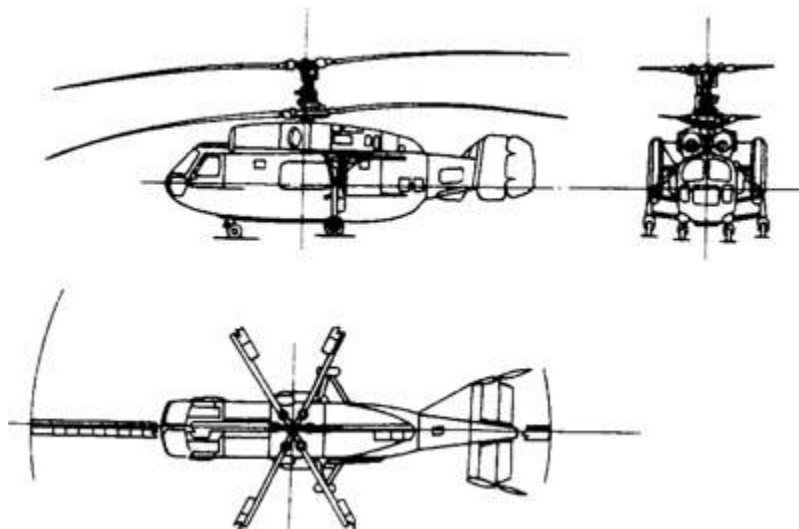


Attack Helicopter Ka-32 Helix-C



W. (tons):	12,6
Speed (km/h):	250
Dimensions (m):	15,9props/? x ?
Alt. (m):	5'500
Range (km):	800
M./Engine:	2 TVD, TV3-117B, 2 x 1'638 kw
Man./Crew:	2

Armament:	
Missiles:	8 Vih 80 NURS
Artillery:	30mm DP
Other:	no



Ka-32 - last machine of N. Kamov. The helicopter has made the first flight of December 24 1973, after a month after death of the designer. Military variant of this helicopter is the helicopter Ka-27. In West the helicopters of the given type for the first time are known(!known) to steel in a 1981, when they were remarked on Baltic onboard a rocket cruiser «Udaloy» in time of training flights. Later these helicopters were demonstrated in Minsk during realization of scientific conference on use of flight vehicles in a national economy. The helicopters Ka-27/Ka-32 are created for a replacement of helicopters Ka-25/Ka-25K. The installation(aim) has supplied(ensured) two of drives by Isotov TVZ-117V almost double magnification of a potency on a comparison with other helicopters. In an outcome it the carrying capacity was increased up to 500 kgs. The helicopters of a type Ka-32/Ka-27 have a carrier system from two three-blade of screws of opposite rotation, pilot and cargo cabins and tail. For want of manufacturing of blades of bearing screws Ka-32 the experience of ten years' batch production of glass-fibre blades for the first time designed in OKB to them is used. The hinged strengthening of these blades to cartridges of bearing thorns provides their addition above a tail beam for want of storage of helicopters on the aircraft carriers. The fuselage of the helicopter is executed, in main, from aluminium alloys with three doors: from both sides of a pilot cabin for two members of crew and on port side of a cargo cabin. As push to creation Ka-32 the acute transport problems connected to assimilation of regions of Extreme North have served. For want of it the problems of posting of caravans of courts on northern marine path were assigned to them (give a state information of ice at the rate of caravan) and unloading of courts on the move (« the Flying crane(valve) » transports on the external suspension the consignment up to 5000 kgs on a distance(span) of 80 kms, and in a cargo cabin - 1500 h a distance(span) up to 800 kms). Besides the helicopters Ka-32 have found broad application in mountain conditions: auaieza of wood,

construction LEP and realization of rescue work. The navigational equipment Ka-32/Ka-27 allows to realize flight on a selected route in an automatic mode. For this purpose it is enough to set geographical coordinates of points of a route, and «electronics engineering» itself will conduct the helicopter till a Nim with an exactitude, sufficient for visual contact. The flights of helicopters Ka-32/Ka-27 are possible(probable) in the day and night, both in simple, and in complicated meteorological conditions.

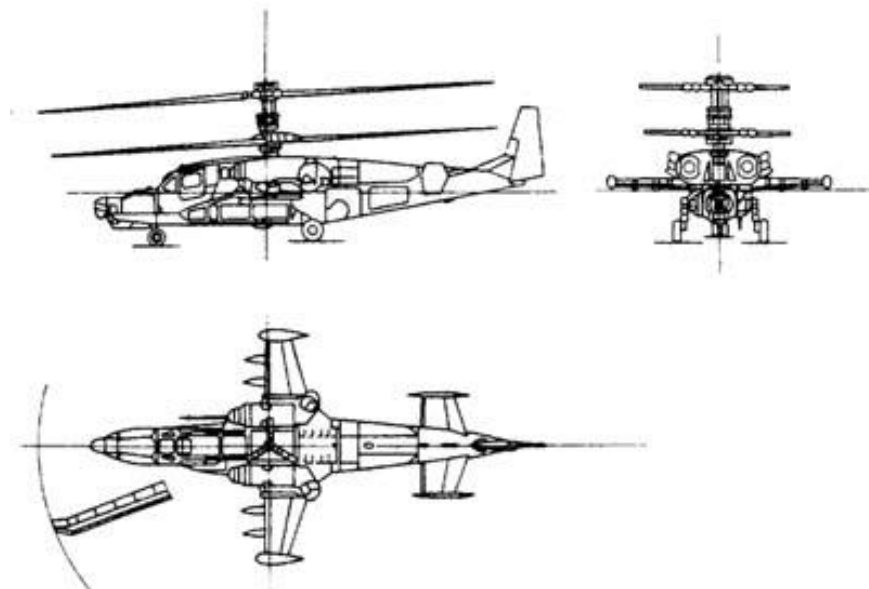
These possibilities are ensured with installation(aim) of the complicated equipment for a system of automatic control and application electrical antiice system of blades and frontal glasses of a pilot cabin. By helicopters Ka-32 the number of official records is established(installed): - lifting for want of completely female crew (gang of height 6000 m for 4 minutes and 46 seconds); - Rise of the consignments (2000 kgs on height 6400m; 1000 kgs on height 7305 m; rise of the helicopter without the consignment on height 8250 m). Ka-32A - first russian helicopter received certificate of the validity MAK CIS in a 1993. In the beginning of the 80-th years on basis(!on the basis of) Ka-27 the helicopter of firing support of descents, received a label Ka-29 was developed. The helicopter has an armored guard of a crew cabin and vital aggregates, and also high-power arms (gun of 30 mm with 250 shells, 8 AT missiles and up to 80 missiles of calibre of 80 mm). On it(him) the laser range finder and new automatic system is established(installed). The helicopter Ka-29 can be used in transport variant and to transport 16 marines or 2000 kgs of the consignment in a cargo cabin and up to 4000 kgs on the external suspension. In this variant instead of a gun the machine gun of calibre of 7,62 mm with ammo of 1700 patrons is installed

Attack Helicopter

KA-50 Hocom (Werewolf)



Dimesions (mm):	14,5props/15,9 x 4,9 x 7,3
Maximum speed (km/h):	390 (diving) 270 (cruise) 310 (max I flight)
Seiling.:	5500/4'000
Weight (kg):	7692 (empty) 9800 (normal take off) 10800 (max) 1811 (combat load part)
Engine:	2 TVD, TV3-117VMA, 2 x 2,200 h.p.
Range (km):	1'160
Armament:	12 AT Vihr 80 NURS 30mm DP 2A42 (460 rounds; 980 m/s, 4'000 m, 2 - 4mrad) bombs
Crew:	1



Combat helicopters had to experience harsh times, when their combat role was completely denied, only to be acknowledged as an indispensable weapon for any successful modern operation of ground forces. Today, many countries have developed combat action concepts based on employment of army aviation helicopters. According to published data, combat helicopters in the late 1970s and early 1980s always enjoyed the upper hand in duels with tanks during military exercises at a ratio of 1:10, 1:14 and even 1:20 in their favor. This led to urgent rigging of tank units with air defense artillery and air defense missile systems to protect them from combat helicopter attacks. Then combat helicopters, fitted with antitank guided missiles boasting a range of up to 5 km, became easily vulnerable targets for air defense artillery and air defense missile systems.

The development of the Ka-50 Black Shark and AN-64A Apache combat helicopters aimed to redress this disparity and make the helicopters able to defeat tanks armed with air defense weapons. The Ka-50 combat helicopter can be used to defeat targets on the battlefield within wide ranges of

launching high-precision supersonic antitank missile systems, including launches from more than a 6-km range within a stand-off zone of air defense artillery and air defense missile systems. The Ka-50 combat helicopter is intended to defeat modern armored and mechanized materiel, air targets and hostile manpower.

This co-axial helicopter features a high flight performance and ease of piloting via automated flight devices. It can successfully execute combat missions day/night owing to high survivability under hostile fire, powerful armament and comfortable pilot's cockpit.

The helicopter was tested in simulated combat conditions. It met all the requirements for combat helicopters and won a Ministry of Defense tender.

The Ka-50 helicopter is unrivalled in the world in terms of the 'cost-efficiency' criteria. In 1995 the Ka-50 combat helicopter entered service and is now series produced at Progress Arsenyevsk-based aviation complex.

The success of any combat operation to support ground forces on the battlefield depends to a large extent on the joint combat actions of group combat helicopters. A group commander flying in a combat formation is responsible for control over subordinate helicopters. His helicopter should be fitted with more sophisticated equipment compared to the rest of the group to make him see better targets on the battlefield and be able to ensure target designation and distribution, provide for constant control over group combat helicopters and maintain communications with a ground command post. The scope of tasks assigned to the commander frees him from helicopter piloting. Consequently, he should fly in a two-seat flying combat vehicle.

The Ka-52, designated Alligator, multi-role all-weather combat helicopter, is intended for this purpose as a two-seat modification of the Ka-50 combat helicopter. Pilots accommodated side-by-side in one cockpit can fly this helicopter and handle all on-board systems. The Alligator retained all combat capabilities of its predecessor, including the whole array of weaponry. It is outfitted with a multifunctional on-board integrated electronic flight, navigation and weapon control system. Its passive/active observation/search and sighting systems ensure target search and their attack day/night in any weather conditions. The Sextant Avionic of France and Thomson company take part in creation of this helicopter. The Ka-52 Alligator is 85 percent identical to the Ka-50 base helicopter in terms of its airframe and main systems. Pilots escape via an ejection system. The Ka-52 Alligator can also be used as a trainer. Pilot accommodation and the availability of new multifunctional equipment system led to an increase in the weight of the empty helicopter and a certain deterioration in flight performance, compared to the Ka-50. However, it did not affect the integrated quality of this flying machine as a whole.

Externally, the Ka-52 combat helicopter differs from its predecessor in the front part of the fuselage, shape of the cockpit and arrangement of round-the-clock observation/search and sighting systems. Pilots are rigged with pressurized helmets fitted with built-in displays to provide for required flight and sighting data. The Ka-50 and Ka-52 helicopters feature interchangeability, thereby reducing costs for series production and joint operation in combat units.

Naturally, Alligator is more expensive than Black Shark. However, this is attributable to payments for the capability to perform combat missions on higher and more efficient levels. The advent of Ka-52 does not mean its automatic substitution by the Ka-50. They can be used more effectively in the interests of the ground forces, owing to their optimal joint employment in groupings. A similar approach is also adopted by the U.S. army aviation. The more costly and sophisticated AN-64D and AN-64D LongBoy helicopter versions do not replace, but instead reinforce the AN-64A Apache helicopter groupings, thereby increasing their efficiency.

In the near future the Ka-52 will be subjected to tests. The Kamov company and its foreign partners are convinced of the successful results of the tests that will enable the Ka-52 helicopter to occupy a leading position in its class. It is up to foreign buyers to decide whether to choose the Ka-50 or the Ka-52 or a hybrid to meet their requirements.

Transport Helicopter

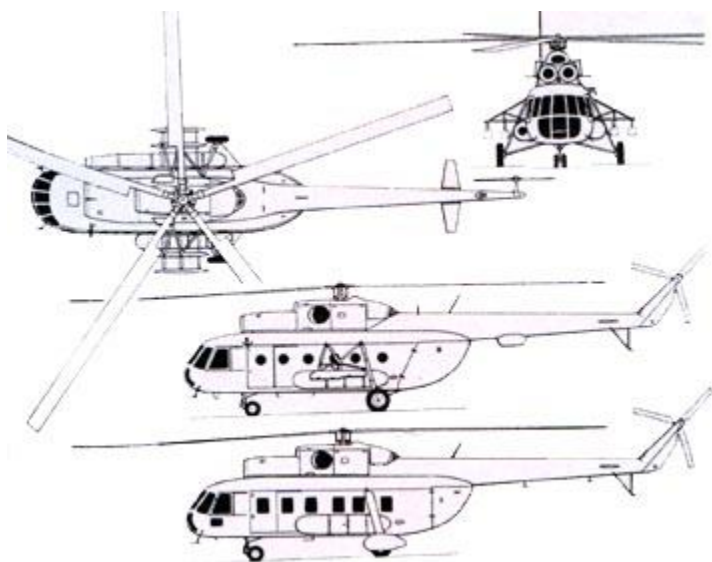
Mi - 8

NATO Codename "Hip"



Tactical-technical characteristics of the Mi-8T Transport Helicopter	
Entered service in	1965
Crew	3
Dimensions and weight	
Weight (empty)	6 965 kg
Take off weight	11 100 kg
Maximum take off weight	12 000 kg
Rotor diameter	21 290 mm
Overall length (without rotors)	18 220 mm
Wing span	4 750 mm
Overall height	4 500 mm
Cargo load	
Useful cargo load	2 355 t
Maximum useful cargo load	4 000 t
Maximum slung load	3 000 kg
Cargo compartment dimensions	5 340 x 2 340 x 1 800 mm
Passengers	24 equipped troops or 12 patients
Armament	

Machine gun	7.62-mm PK
Engines	
Engines	2 x TV2-117
Engine power	2 x 1 500 hp.
Cruise speed	225 km/h
Maximum speed	250 km/h
Flight range (with normal load)	465 km
Flight range (with additional fuel tanks)	950 km
Maneuverability	
Hovering ceiling	800 m
Service ceiling	4 500 m



The Mi-8 Transport Helicopter is the most massively produced helicopter in the world. In Soviet Union there were developed more than 50 various modifications of this helicopter and built approximately 12 000 helicopters including 3 600 built for export. These helicopters are still built at Mil Moscow Helicopter Plant, Kazan Helicopter Plant and Ulan-Ude Aviation Plant. The Mi-8 Transport Helicopters took part in a great number of military conflicts all around the world including Afghanistan and both Chechnya wars. At the moment Mi-8 with it's various modifications are operational in over 50 countries of the world including some NATO countries.

Development of the Mi-8 Helicopter began at the beginning of 60-ties. Helicopter's name as Mi is shortened it's general designer's surname. This helicopter was intended to replace the outdated and lighter Mi-4 helicopter. First prototype of the Mi-8 with a 4-blade rotor was tested in 1962. Tests showed that prototype has a number of disadvantages and after it's improvement in 1963 began tests of the second machine with a 5-blade rotor. Tests showed that this new transport helicopter had 2.5-fold better weightlifting and 1.4-fold higher speed comparing with the Mi-4. This version was adopted and it's serial production began in 1965.

The Mi-8T is a base version of the transport helicopter available in civil and military versions. It's cockpit accommodates three crew members - commander, navigator, and flight mechanic. The cockpit can be armored (military version). The helicopter has external hardpoints for external armament such as unoperated aviation missiles, bombs and a slung load. A slung load is up to 3 000 kg.

Helicopter's landing-transport equipment can be used to load light towed combat material and armament with winches and for people rescuing from the ground or from the sea by an electrically operated 200 kg capacity hoist. The cabin has cargo tiedown points on the floor. Ramps are provided for loading light vehicles.

Fuel is carried in two flexible internal and external fuel tanks (1 870 l capacity both). Range of flight with normal load is 465 km. However the fuel capacity can be increased up to 3 700 l for 950 km flying range. The Mi-8 "Hip" uses aviation kerosene.

Helicopter has a transmission scheme very similar to the Mi-4. Fuselage is clinched from aluminum plates. Main and turn rotors have 5 and 3 blades consequently. The main rotor features hollow longeron blades made from pressed high quality aluminum alloy. Longerons are fitted with icing prevention system's heating elements operated in automatic or manual modes. All main rotor blades are fitted with pneumatic failure alarm system.

The Mi-8 "Hip" Transport Helicopter is powered by two Klimov TVZ-117 type turboshaft engines. Engine air intake deflectors prevent ingestion of dust. It is also fitted with electricity generator, hydraulic pumps, cooling fan. The Mi-8 Helicopter engines are ignited by reaction starter motor which can be used as additional electricity source. In case of one of the main engine failures during flight the other main engine power is increased. One engine power is enough to keep horizontal flight without losing altitude. This feature determines high helicopter flight safety and reliability.

Helicopter has a three bearing fixed chassis fitted with a rubber wheels. Both rear bearings have absorption devices. The Mi-8 "Hip" is fitted with fire prevention, icing prevention, air conditioning systems.

Protection systems contains exhaust gas spreading, infrared trap launching, and infrared beam impulse generation systems to counteract against enemy guided missiles based on infrared guidance. Helicopter is fitted with an explosion resistant foam filled fuel tanks.

Navigation, piloting, and radio equipment completed with Mi-8 allows to make flights at any day-night time and meteorological conditions. Piloting control system is doubled and based on hydraulic mechanisms. Helicopter is fitted with a four-channel autopilot stabilizing the helicopter in 4 flight coordinates - axis and height, course, alteration, and speed. Navigational devices contain doubled aviahorizont, giromagnetic course compass, radio altitude finder, Doppler effect based speed and side deflection meter.

Threw the helicopter improvement and redesigning for special tasks works there were developed later mentioned and a number of other modifications:

- Mi-8P - Passenger Helicopter used in the civil air lines and for commercial purposes. This helicopter has 28 passenger seats;
- Mi-8S - Improved Passenger Helicopter;
- Mi-8PS - Improved comfort luxury Passenger Helicopter intended for 7 - 11 VIP passengers. Such helicopters are built on special orders in limited editions for presidents and government members. M. Gorbachiov and B. Jelcin had this helicopter;
- Mi-8TV - Military Transport Helicopter with increased armament. It is an armored variant of the Mi-8T Helicopter. In addition it has increased reinforced external hardpoints for slung load up to 4 000 kg and armament. The turning screw was placed from left side what made it more effective. It is fitted with 7.62mm built-in machine guns and six external weapons racks with S-5 aviation missiles. The helicopter can also carry AT-2 Swatter 9M 17P "Scorpion" anti-tank missiles. Mi-8TV is also capable of laying minefields. The helicopter has more powerful TV3-117VMA engines that provide increased hovering ceiling in 3 950 m compared to the 1 760 m compared with the Mi-8TM. The helicopter can be fitted with an infrared jammer;
- Mi-8TBK - Export variant of the Mi-8TB Helicopter;
- Mi-8ATM - Amphibious Helicopter;
- Mi-8TM - Improved Multipurpose Helicopter. This helicopter was designed for improved capabilities at a high altitudes and hot climate zones. The helicopter has a hovering ceiling in 1 760 m. It is some kind of conversion into a Transport-Attack Helicopter. It was completed with more powerful TV3-117MT - 1 950 hp. engines with additional gas turbine. It has cruise and maximum speed of 240 and 250 km/h consequently with a normal payload. These helicopters were involved into Soviet Union-Afghanistan War in 1979 - 1988;
- Mi-8TMV/[Mi-17](#) - Improved Multipurpose Helicopter with improved capabilities at a high altitudes and hot climate zones with increased armament. The Mi-8TMV was intended for the Soviet Army while the [Mi-17](#) is it's export name. The helicopter is completed with more powerful TV3-117VMA - 2 200 hp. engines. It has a hovering and service ceilings in 3 980 and 4 900 m consequently;
- Mi-8MTV-2/Mi-17-1V - Heavy Armed Multipurpose Helicopter one of the most powerful in it's class. This helicopter improvement works are made recently. It has armed with 4 aviation guns, unoperated aviation missiles, and various bombs. There is ability to mount 8 machine guns in the fuselage side windscreens;
- [Mi-14](#) - Amphibian Anti-Submarine Helicopter built on Mi-8TM base and entered service in 1977;
- Mi-8VZPU - Electronic Warfare Helicopter;
- Mi-9 - Radio Retranslation Helicopter. One of it's functions was to take part in the informational war;
- Mi-8PP and Mi-8PPA - Helicopters intended to generate radio electronic strays. Such helicopters were intended to block enemy communication systems;
- Mi-8BT - Sea Mine-Trawling and Mining Helicopter;
- Mi-8TZ - Fuel Carrier;
- Mi-8R - Reconnaissance Helicopter;
- Mi-8VKP - Air Command Post;
- Mi-8K - Artillery Reconnaissance and correction Helicopter;
- Mi-8AV - Miner Helicopter;

- Mi-8MPS - Sea Search and Rescue Helicopter. Such helicopters is fitted with radio-beacons to mark the dirrect zone. It carries rescue team and can lift 10 people at a time on a sling with light rescue raft. It is completed with an emergency landing device on sea for up to 30 minutes drift. The Mi-8MPS has increased fuel capacity, additional radar system, thermal search system, navigation system and rescue equipment. These helicopters are used for a spacecraft recovery missions. It delivers technical groups with rescue equipment to the craft landing zone. It returns to a nearest aerodrome cosmonaut and space objects up to 3 000 kg weight.

- Mi-8ATS - Agricultural Multipurpose Helicopter.

Also there are such versions as the Fire Fighter Helicopter, Ambulance Helicopter and other.

Main features

Excellent survivability. Engine reliability and ability to keep flight with one engine out of service.
Powerful armament installed on some modifications.

Helicopter MI-17MD



Mi-17MD HELICOPTER: VERSATILE CAPABILITIES

The Mi-17MD (Russian market designation – Mi-8MTV5) multipurpose helicopter is a further development of the Mi-17 helicopter well-known throughout the world. Flight and technical characteristics and power-to-weight ratio of the helicopter are considerably enhanced due to employment of the new TV3-117VM engines that enable it to fly at altitudes up to 6,000 m, achieve a level flight speed of 270 km/h and acquire a climb rate of up to 20 m/s.

The Mi-17MD is intended for airlifting of troop units to areas of combat action. While performing the shuttle flights, several Mi-17MDs can carry out heliborne operations to deliver several hundred airlanding troopers or infantrymen to an assigned area in the enemy's deep rear, providing them with air cover by means of onboard armament.

A loading/unloading ramp and two sliding doors of the cargo cabin make it possible to perform embarkation/debarkation of 35 troopers in just 15 to 20 s.

The crew cabin lighting equipment allows the pilots to use night vision goggles that considerably extend the flight capabilities during dark conditions, improve search conditions of ground objects and victims, and enable the crew to fly special missions at night and perform low-altitude flights.

Upgraded armor for the crew cabin and vital systems protects the helicopter against small arms, while onboard chaff dispensers defend it against ground-to-air heat-homing missiles.

The modernized fuel system enables the helicopter to fly a ferry range of up to 1,600 km and perform patrolling of the assigned area or searches for people in distress lasting 10 to 12 hours.

The Mi-17MD can be used in several versions.

Troop-carrying version. The helicopter is capable of airlifting up to 35 fully armed troopers in the cargo cabin. An enlarged port-side sliding door, as well as a starboard sliding door and a remotely extended loading ramp outfitted with a hydraulic drive enable the heli-borne troopers to embark/debark in a matter of seconds after landing. A training airlanding heliborne system provides for leaving the helicopter in air through two doors and opening of the removed loading ramp. The helicopter's design enables the trooper parties (up to four troopers at a time) to leave the helicopter by means of SU-R cable-type landing facilities while the helicopter hovering at a height of up to 30 m above the ground.

Transport version. This helicopter is capable of airlifting cargoes of up to 4,000 kg in the cargo cabin or up to 5,000 kg on an external cable suspension. A Bamby Bucket water discharging device may be installed for firefighting missions, which enables up to 4 tons of water to be scooped from open water basins and discharged over a target area in any flying mode. Its cargo cabin allows the transportation of cargoes up to 10 m long and requires no modifications for the purpose.

Ambulance version. This helicopter can carry up to 12 stretchers with sick persons and also up to 20 sitting sick persons or victims accompanied by a medical attendant.

Search and rescue version. To perform search and rescue operations, this version is equipped with an SX-16 searchlight, which has a luminous intensity of several million luxes and allows the crew to search for victims and ground objects from a high altitude, and an SLG-300 hoist system intended for lifting a cargo or two victims from a height of up to 60 m. To increase the visual searching time, the crew can use the night vision goggles that enable the crew to perform visual observation of the ground surface from an altitude of up to 300 m at a natural illumination intensity ranging from 1 to 0.0005 lx.

Combat version. This version can carry bomb armament with a total weight of up to 3,000 kg, universal gun pods with 23mm guns, and up to 80 pieces of 80mm unguided rockets. Work is underway to equip the helicopter with guided missiles.

The helicopter design makes it possible to easily convert it to any version or perform flights in combined versions: transport/combat, ambulance/transport, search/combat, etc.

One of the Mi-17MD versions is equipped with a set of Western avionics, incorporating the EDS-756 electronic display system manufactured by the Honeywell of the United States, D-60350 air data system manufactured by the Penni&Jails of Great Britain, Honeywell's attitude measuring system, GH-3000 emergency display system manufactured by the U.S. company Goodrich, Honeywell's Primus-II integrated radio navigation and radio communications system, AA-300 low-altitude radio altimeter, Honeywell's Primus-700 weather radar, and the TNL-2101 I/O satellite navigation system manufactured by the Trimble Navigation company. The avionics set fully meets the requirements of the FAR-29 International Aviation Regulations.

The furnishing of the helicopter with this equipment set decreases the helicopter empty weight by 100 kg and simultaneously provides for double redundancy of all communications, navigation and flight control systems.

The digital communications and navigation system, the easy-to-interpret colored presentation of flight and navigational information on displays, possibility to obtain by each pilot his own radar picture from one weather radar and provision of a personal digital director system for each pilot, as well as the instrument landing system, put the Mi-17MD equipped with the new avionics on a par with the best modern helicopters



The SX-16 searchlight



The pilots' cabin equipped with the set of Western avionics



The SX-16 searchlight



The Igla (on the left) and the Shturm (on the right) guided missiles on racks



The enlarged port-side sliding door and the unguided rocket pod suspended from the rack



The Mi-17MD with the extended loading ramp and a long-size cargo in the cabin



The protective system against ground-to-air missiles

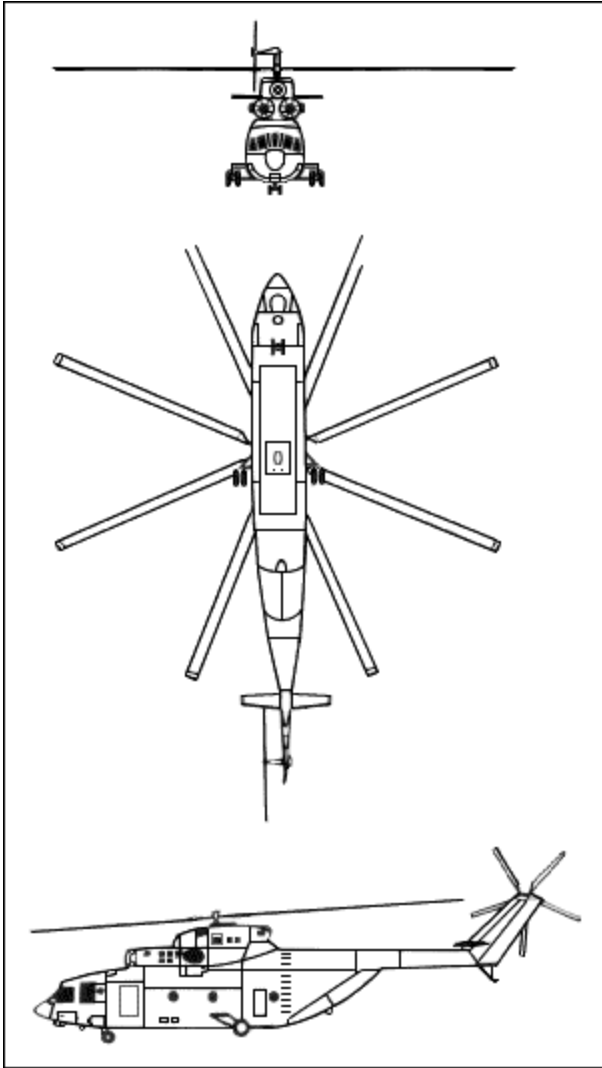
Heavy Transport Helicopter

Mi - 26



Entered service in	1980
Crew	5
Dimensions and weight	
Weight (empty)	28 000 kg
Maximum take off weight	56 000 kg
Rotor diameter	32 000 mm
Cargo load	
Maximum slung load	20 000 kg
Passengers	82 full equipped or 60 stretched
Engines	
Engines	2 x D-136 turboshaft
Engine power	2 x ~9 000 - 10 000 hp.
Maximum speed	295 km/h
Flight range (with normal load)	800 km
Maneuverability	
Hovering ceiling	1 700 m
Service ceiling	4 600 m





The Mi-26 Heavy Military Transport Helicopter made its first flight in 1978. This helicopter was intended to carry passengers and cargo in the cargo cabin or large cargo on the external slung. The Mi-26 "Halo" was intended to replace the Mi-6 Heavy Transport Helicopter which had lower useful cargo load and smaller cargo compartment as the analysis of the new and perspective Soviet Army infantry vehicles showed that 80 - 90% of all motorized infantry division cargo must be transported by helicopters.

The Mi-26 has an 8-blade main and 5-blade tail rotors consequently. The helicopter features low weight level of the main systems and devices. The main rotor has steel longeron, fiberglass frame and special paper thinned blades. Such blade has weight of 375 kg compared with 705 kg on the Mi-6. A special titan abrasive shoes provide erosion wear protection. This method was first used in helicopter building.

To increase the main rotor aerodynamic characteristics in drift regime blades were completed with various profiles. Such blade aerodynamic scheme allowed to increase the main rotor pull power in drift regime. A heavy planetary main reducer scheme was replaced by a lighter 3-stage multischeme.

Composite materials are used in fuselage design such as a special alloy which has a 26% lighter weight comparing with usual aluminum alloys. The helicopter features special cabin shape and new tail boom connection scheme.

The Mi-26 "Halo" high fuel economy is reached by its aerodynamic improvements and usage of the new D-136 turboshaft engine. The D-136 in its weight to power ratio is among the best helicopter engines of the world and is unique in the fuel economy. Mi-26 has increased capacity built-in fuel tanks. Fuel capacity increased from 8 600 l to 11 600 l compared with the Mi-6 Heavy Transport Helicopter. This feature allowed to increase flying range with usual load up to 800 km.

A number of fairings are installed on the helicopter to optimize fuselage streamlines. Helicopter designers rejected wings and external fuel tanks. Engines are also fitted with additional fairings to increase fuselage streamlines. A tail boom was completed as a keel. It has a square of 11 m². An unoperated stabilizer was placed at the rear boom to increase longitudinal stability. This stabilizer was placed out of the main rotor reach.

Helicopter is fitted with a three channel autopilot.

The Mi-26 "Halo" Heavy Transport Helicopter carries up to 20 000 kg cargo on the external slung. It can carry 82 passengers or 60 wounded stretched soldiers.

The helicopter has no armament and was also produced in civil versions.

Main features

Great cargo carrying capabilities including cargo weight and flight range. High-economy engine which is unique in it's class.

Ka-60 Helicopter



Number and type of the engines	2 RD-600 turbo-shafts
Engine power, h.p.	1,300
TO weight (maximum), kg	6,500
Maximum load, kg - inside the transport cabin - on external sling	2,000 2,750
Main rotor diameter, m	13.5
Tail rotor diameter, m	1.4
Transport cabin dimensions, m - length - height - width	3.4 1.3 1.78
Flight speed, km/h - maximum - cruise	300 265
Ceiling, m - hovering - service	2,100 5,150

Practical flight range with internal fuel, km	700
Number of equipped troopers, persons	14
Crew	1...2



The helicopter can carry a rifle squad with full combat gear in its passenger cabin which features a volume of 9.8 m³. Two sliding doors (one on each side of the cargo cabin) measuring 1,250 x 1,300 mm make it possible to perform embarkation/debarkation of nine troopers within 5 to 6 seconds.

In the ambulance version, the Ka-60 helicopter can carry six stretchers with wounded persons and three medical attendants, as well as up to 14 sitting patients.

The maximum internal load-carrying capacity is 2,000 kg.

The maximum takeoff weight is 6,500 kg.

In the search and rescue version, the helicopter is equipped with a searchlight and a LPG-300 hoist with a load-carrying capacity of 300 kg that is able to lift two persons or cargo. For operations over water areas, the helicopter is equipped with inflatable ballonnets.

The Ka-60 may be used in other capacities when provided with special equipment and weapons. A civilian version, designated Ka-62, is being developed on the basis of the Ka-60 helicopter.

The helicopter's performance, reliability and power-to-weight ratio has been considerably improved in comparison with its counterparts due to an updated aerodynamic configuration of the airframe. This helicopter also includes retractable landing gear and two RD-600 engines. The helicopter can fly in a

wide range of contrasting temperatures, at altitudes of up to 6,000 m and high cruising speeds to a range of 600 km.

The engines, specially created for the Ka-60 by the Rybinsk Motors company, develop a takeoff power of 1,300 hp each and are the most up-to-date Russian engines. The modular design features and promising technological/design solutions ensure a high fuel efficiency and maintainability of the engines. The digital two-channel automatic control system provided with the backup hydromechanical channel and developed monitoring and diagnostics system, considerably increases the operating reliability of the power source.

Should one engine stop during the takeoff or during regular flight, output to the other engine increases automatically (without pilot's intervention) thus enabling the flight to continue.

The helicopter is not susceptible to ice and high dust content. The main rotor blades are provided with an electrical anti-icing system, while the engine inlet devices are also equipped with a hot-air anti-icing system. The engine inlet duct is furnished with a dust-protection device. The leading edges of the main rotor blades are provided with an erosion-resistant coating.

If required, the engine and the main-rotor gearbox can operate in emergency power conditions exceeding the takeoff power by 20 to 25 percent. Its gearboxes can operate without oil for an appreciable length of time.

The control system rods and drive shafts have been proven to continue functioning when pierced by the 7.62mm and 12.7mm bullets. The main-rotor blades, made of composite materials, retain their survivability when hit by a 23mm projectile. Its main systems and units are duplicated; the main and backup systems are arranged on different sides of the airframe to prevent their being damaged by one projectile. The self-sealing fuel tanks are provided with an explosion-proof system.

In the pilot's cabin two sets of controls enable the crew to fly the helicopter from either of the two seats. This makes it ideal for the initial training of pilots, as well as for improving one's flying technique.

In case of an emergency landing while flying on low altitudes, the safety of the crew and passengers is ensured by an additional (emergency) stroke of the landing gear shock struts, and by the energy-absorbing seats for the crew and passengers. The strong fuselage and heavily secured units exclude injuries to the crew and passengers possibly caused by the airframe and equipment during crash impact. The design of the personnel compartments allows for injury-free impacts.

The helicopter's standard equipment includes navigational facilities, flight control equipment and data display systems. Provision is made in the fuselage nose section for the installation of a radar and a night vision system. Its maintainability, up-to-date diagnostics methods, and ease of servicing make it possible to sustain the required level of combat readiness. Its high operating qualities have been achieved due to a wide use of composite materials, the employment of maintenance-free bearings, and a system-oriented arrangement of equipment in maintenance zones. An automated onboard monitoring system along with the powerplant control unit, make it possible to promptly detect problems and represent the required information via the onboard or ground-based display system.

One of the Russian helicopter manufacturing plants has set out to begin serial production of the Ka-60. For our customer convenience, the Kamov company is committed to provide helicopter sales, a guarantee of continuous after-sales servicing, logistic support, training of flight personnel and technical staff, as well as training facilities, etc. Having a wide experience in the development of various-class and various-purpose helicopters, the Russian certificate for the development and

production, as well as the foreign certificate for production of aviation materiel, the Kamov company is ready, together with cooperating production plants, to offer high-quality services for users of the unique Kamov helicopters.

- [Ka-52 Alligator](#) Attack Helicopter