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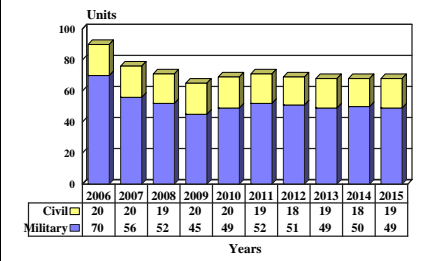
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Russian Medium/Heavy Helicopters - Archived 4/2007

Outlook

- The forecast includes 715 helicopters
- Products in development include the Ka-62 and the Mi-38

10 Year Unit Production Forecast
2006 - 2015



Orientation

Description. A compendium of military and commercial helicopters currently produced or in development in Russia.

Sponsor. Russian Ministry of Transport.

Status. The following are in series production or available to order:

Kamov Ka-27/28/29/31/32 Helix
Kamov Ka-50/52 Hokum
Mil Mi-8/17 Hip
Mil Mi-24/25/35 Hind
Mil Mi-26 Halo

Application. Varies as follows:

Ka-27/28/29/32 Anti-submarine warfare, airborne assault, search-and-rescue, and civil uses such as air ambulance, oil and gas field support, utility transport, agricultural chemical spraying, forestry, and environmental protection.

Ka-31 Airborne early warning.

Ka-50/52 Attack and battlefield support.

Ka-60 Military utility/transport.

Ka-62 Civil utility/transport.

Mi-8/17 Troop and cargo transport, airborne assault, electronic warfare, command/control, and civil uses including passenger transport, oil and gas field support, forestry, and environmental protection.

Mi-24/25/35 Armed troop assault, attack, and battlefield support.

Mi-26 Military and commercial transport, oil and gas field support, construction and engineering support, and logging.

Mi-28 Attack and battlefield support.

Mi-38 Passenger shuttle, energy development and support, construction and engineering support, agriculture and forestry protection, and logging.

Mil Mi-28 Havoc

The following are in design, engineering, and/or flight testing:

Kamov Ka-60
Kamov Ka-62
Mil Mi-38
Mil Mi-54

Total Produced. Through 2005, approximately 14,067 helicopters had been produced in the types listed above.

Russian Medium/Heavy Helicopters

Price Range. Estimated unit prices in 2006 U.S. dollars are as follows:

Ka-27/28/29/32	\$4.5-\$6.5 million
Ka-50	\$12-\$15 million
Ka-60/62	\$1.7-\$6.5 million
Mi-8/17	\$3.5-\$5.0 million
Mi-24/25/35	\$7.0-\$8.0 million
Mi-26	\$8.0-\$12 million
Mi-28	\$12 million
Mi-38	\$12-\$16 million



Ka-50

Source: Kamov

Contractors

Prime

Arsenyev Aviation Production Enterprise	prospekt Lenina 5, Arsenyev, 692335 Primovsky Kray, Russia, Tel: + 7 7 423 6124897, Fax: + 7 7 423 61261301, Prime
Kamov	http://www.kamov.ru , 8a, the 8th March St, Lubertsy, Moscow, 140007 Russia, Tel: + 7 095 700 32 04, Fax: + 7 095 700 30 71, Prime
Kazan Helicopters	http://www.kazanhelicopters.com , Tetsevsкая Str, Kazan, 420054 Russia, Tel: + 7 8432 71 81 81, Fax: + 7 8432 71 82 82, Email: market@kazanhelicopters.com , Prime
Kumertau Aviation Production Enterprise	ulitsa Novozarinskaya 15A, Kumertau, 453350 Russia, Prime
Lukhovitsy Aircraft Production and Test Complex (LAPIK)	Lukhovitsy, 140500 Russia, Prime

Russian Medium/Heavy Helicopters

Mil Moscow Helicopter Plant	http://mi-helicopter.ru , 2, Sokolnichesky val, Moscow, 107113 Russia, Tel: + 7 095 264 9083, Prime
Rostvertol	ulitsa Novatorov 5, Rostov-on-Don, 344038 Russia, Prime
Ulan-Ude Aviation Plant Joint Stock Company	http://www.uuaz.ru , 1, Khorinskaya St, Ulan-Ude, 670009 Russia, Prime
NOTE(S): Kamov, Arsenyev, Kumertau, and LAPIK apply to Kamov line. Mil, Arsenyev, Kazan, Rostvertol, and Ulan-Ude apply to Mil line.	

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Technical Data

See **Variants/Upgrades** section below.

Variants/Upgrades

Ka-27/28/29/31/32 Helix. This series of twin-turbine helicopters is used in a variety of military and civil roles. Similar in appearance to the earlier Ka-25 Hormone, the Helix became operational in 1980. The Ka-27PL Helix-A rotorcraft can operate from the helicopter decks of the Kirov nuclear-powered guided-missile cruiser, the Sovremenny class guided-missile destroyer, the Udaloy class guided-missile destroyer, the Kiev class helicopter carrier, the Moskva class aviation cruiser, and other surface combatants and auxiliaries. The Ka-28 is the export version of the Helix-A, while the Ka-29 Helix-B is a combat assault helicopter initially assigned in 1985 to the Soviet Northern and Pacific Ocean fleets. The Ka-27PS Helix-D is a search-and-rescue variant. The Ka-31 is an airborne early warning version.

The Ka-32 is a civil and military multirole version that has been sold in several subvariants, including the Ka-32T utility transport, ambulance, and flying crane; the Ka-32S maritime helicopter; the Ka-32K flying crane; the Ka-32A utility helicopter; the Ka-32A1 firefighting version; and the Ka-32A7 armed version. A Ka-32A2 version is used by the Moscow Militia.

The Ka-32 has an overall length of 12.25 meters (40.19 ft), a width of 4.0 meters (13.12 ft), a height of 5.5 meters (17.88 ft), and a rotor diameter of 15.9 meters (52.17 ft). Normal takeoff weight is 11,000 kilograms (24,250 lb). Maximum speed is 260 kmph (140 kt). Range with maximum standard fuel is 800 kilometers (432 nm). The Ka-32 is currently powered by twin Klimov TV3-117V turboshafts rated 1,633 kW (2,190

shp) each. However, the 1,860-kW (2,500-shp) Klimov VK-2500 may eventually replace the TV3-117V on the Ka-32.

The Ka-32A is equipped with Klimov TV3-117VMA turboshafts.

Ka-50 Hokum. The Ka-50 Hokum, also known as the Black Shark, is a single-seat military helicopter intended to perform attack and air-to-air combat duties. The Hokum features coaxial rotors with three swept-tip blades each. It has a streamlined fuselage with a tapered nose and retractable tricycle-type landing gear. It has no tail rotor. Powerplants are a pair of Klimov TV3-117VMA turboshafts rated 1,633 kW (2,190 shp) each. The aircraft is armed with up to 12 laser-guided anti-tank missiles or up to eighty 80mm air-to-surface rockets, as well as a 30mm gun mounted on the starboard side of the fuselage. Maximum takeoff weight is 10,800 kilograms (23,810 lb).

A two-seat version of the Hokum, called the **Ka-52 Alligator**, is under development. The initial flight of a Ka-52 prototype, a converted Ka-50, occurred in June 1997. The Ka-52 is intended for use in training and combat roles. It has side-by-side seating. Its engines are Klimov TV3-117VMAs rated at 1,838 kW (2,465 shp) each. The Ka-52 has 85 percent parts commonality with the single-seat Ka-50.

Development has also started on a single-seat, all-weather version of the Ka-50 called the **Ka-50N**. A Ka-50N prototype, which was converted from an existing Ka-50, made its initial flight in May 1997.

Russian Medium/Heavy Helicopters

Kamov teamed with Israel Aircraft Industries (IAI) to unsuccessfully bid a version of the Ka-50, called the Ka-50-2, for a program to supply attack helicopters for the Turkish Army. The Ka-50-2 has also been proposed to other potential customers.

Ka-62. The all-commercial Ka-62 is a single-main-rotor helicopter with accommodation for a pilot, a copilot, and up to 14 passengers. It has a shrouded tail rotor. Composites account for 60 percent, by weight, of the aircraft's structure. The initial prototype was powered by twin Rybinsk TVD-1500V turboshafts rated 956 kW (1,282 shp) each. The TVD-1500V is also called the RD-600. However, in 2002, the 1,120-kW (1,500-shp) Klimov VK-1500 engine was selected to replace the TVD-1500V on the Ka-62.

The Russian-powered Ka-62 version will be built for the domestic market. Western-powered versions may be built for export sales. A Ka-62M version may be built, powered by two 1,212-kW (1,625-shp) General Electric CT7 engines. General Electric has been studying installation of its CT7 engine on the Ka-62 with \$1.0 million in funding from the U.S. Trade & Development Agency. The study is intended to determine the feasibility of the project, and GE has agreed to supply engines for the prototype program. In mid-1996, GE established a joint venture with Rybinsk to build CT7 engines in Russia. The joint venture is called Rybinsk GE Aviation Motors.

A Ka-62R may also be built, and would be powered by two 1,566-kW (2,100-shp) Rolls-Royce Turbomeca RTM322 turboshafts. IAI has a provisional agreement with Kamov that covers assistance in Western sales efforts, including certification as well as subassembly construction.

Mi-8/17 Hip. The original Mi-8 prototype, based in part on the piston-engine Mi-4, flew for the first time in 1961. The first prototype was powered by a single turboshaft and featured a four-blade main rotor. Subsequent models were fitted with a five-blade rotor and a twin-turbine installation. The Mi-8 is powered by two 1,250-kW (1,677-shp) Klimov TV2-117AG turboshafts, while the basic Mi-17 is powered by twin TV3-117MTs rated at 1,397 kW (1,874 shp) each. The Mi-8 is 25.33 meters (83.1 ft) long and 5.55 meters (18.19 ft) high, and has a 21.25-meter (69.72-ft) main rotor diameter and a maximum takeoff weight (for VTO) of 12,000 kilograms (26,455 lb).

The Mi-17 has the Mi-8 airframe and uprated engines. The Mi-17 also differs from the Mi-8 in having its tail rotor repositioned to the port side of the vertical stabilizer. Many Mi-8s have been upgraded to the Mi-17 configuration. A version of the Mi-17 called the

Mi-171 is also available, powered by a pair of TV3-117VMs rated at 1,545 kW (2,070 shp) each. This variant features improvement in rates of climb and hover ceilings. Klimov VK-2500 engines have also been installed on recent Mi-171s.

Mi-24/25/35 Hind. The Mi-24 Hind made its initial appearance in the early 1970s. The Hind's wide range of armament has been progressively updated and improved since then, allowing increases in battlefield performance with the same basic aircraft. Hind armament differs by variant; the Mi-24P Hind-F carries one twin-barrel 30 mm gun, and has the capability to carry anti-tank missiles, rocket pods, gun pods, mine dispensers, and bombs. The Mi-24 Hind-A was an assault helicopter. The Mi-24D Hind-D has a primary role as a gunship, and features heavily armored accommodations for the pilot and weapon operator in tandem seating. The Hind-D retains a transport capability. The Mi-24V Hind-E is similar to the Hind-D but is configured to fire up to eight AT-6 anti-tank missiles. The Mi-24P Hind-F is similar to the E, but is fitted with a twin-barrel 30mm gun on the starboard side of the fuselage. The Mi-25 is an export version of the Mi-24D, while the Mi-35 is an export version of the Mi-24V. Technical data for the Mi-24P are as follows: overall length with rotors turning, 21.35 meters (70.05 ft); main rotor diameter, 17.3 meters (56.76 ft); tail rotor diameter, 3.91 meters (12.82 ft); powered by 1,434-kW (1,923-shp) Klimov TV3-117MT turboshaft engines.

Mi-26 Halo. The Mi-26 has an empty weight of 28,600 kilograms (63,052 lb) and a maximum takeoff weight of 56,000 kilograms (123,450 lb). It is powered by two ZMKB Progress D-136 turboshaft engines rated 8,501 kW (11,400 shp) each. Other technical data include a length (rotors turning) of 40.03 meters (131.32 ft), height (to top of rotor head) of 8.15 meters (26.72 ft), main rotor diameter of 32.0 meters (104.99 ft), a maximum speed of 295 kmph (159 knots), and a flight range (without additional fuel tanks) of 800 kilometers (432 nm). The aircraft has a payload capacity of 20,000 kilograms (44,090 lb).

In 1992, Mil attempted to gain an exemption to allow the Mi-26 to operate in the U.S., but the FAA denied the request.

Mi-28 Havoc. A competitor to the Kamov Ka-50, the two-seat Mi-28 is capable of performing anti-tank and close air support missions. It is also able to conduct air-to-air missions against hostile helicopters, if required. The Mi-28A basic version is 17.01 meters (55.81 ft) long and has a maximum takeoff weight of 11,500 kilograms (25,353 lb). It is powered by two Klimov TV3-117VMA turboshaft engines, each rated 1,636 kW (2,194 shp).

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A day/night-capable version, called the Mi-28N, is under development. The first flight of the initial Mi-28N prototype occurred in late 1996. However, due to funding problems, flight testing was subsequently halted. Flight testing of the Mi-28N resumed in the spring of 1997, with a bank loan providing funding for the development program. The Mi-28N prototype was modified from an existing Mi-28.

An Mi-28N preproduction aircraft made its initial flight in March 2004.

Mi-38. This 15,600-kilogram (34,392-lb) multirole helicopter was first displayed in model form at the 1989 Paris Air Show. It is designed to carry 30 passengers or 5,000 kilograms (11,020 lb) of freight. The twin-engine helicopter will be marketed with a choice of engines: Pratt & Whitney Canada PW127 T/S engines or Klimov VK-3000s.

The initial Mi-38 prototype made its first flight in December 2003.

Program Review

Background. This report consolidates the forecasts of Kamov and Mil medium/heavy helicopters in production or advanced development. Descriptions of the helicopters can be found above. A number of these

helicopters remain in Russian military service. They can also be found in the military fleets of several other countries, including former republics of the Soviet Union, as well as in the civil market.

Worldwide Distribution/Inventories

Military/Government OperatorsMil

Operator	Designation	AC QTY
Afghanistan Air Force	Mi-35	6
Afghanistan Air Force	Mi-8	6
Algeria Air Force	Mi-17	42
Algeria Air Force	Mi-24	37
Algeria Air Force	Mi-8	33
Angola Air Force	Mi-17	10
Angola Air Force	Mi-25	5
Angola Air Force	Mi-35	10
Angola Air Force	Mi-8	47
Armenia Air Force	Mi-24	12
Armenia Air Force	Mi-8	11
Azerbaijan Air Force	Mi-24	15
Azerbaijan Air Force	Mi-8	13
Bangladesh Air Force	Mi-17	14
Bangladesh Air Force	Mi-171	3
Bangladesh Air Force	Mi-8	2
Belarus Air Force	Mi-24	55
Belarus Air Force	Mi-26	14
Belarus Air Force	Mi-8	129
Bhutan Army	Mi-8	7
Bosnia-Herzegovina-Bosniac/Croat Federation	Mi-8	3
Bosnia-Herzegovina-Republika Srpska Air Force	Mi-8	11
Bulgaria Air Force	Mi-17	18
Bulgaria Air Force	Mi-24	18
Burkina Faso Air Force	Mi-17	2
Burkina Faso Air Force	Mi-35	2

Russian Medium/Heavy Helicopters

Operator	Designation	AC QTY
Burkina Faso Air Force	Mi-8	3
Burundi Air Force	Mi-24	2
Cambodia Air Force	Mi-17	2
Cambodia Air Force	Mi-26	2
Cambodia Air Force	Mi-8	4
Chad Air Force	Mi-17	6
Chad Air Force	Mi-25	2
Chad Air Force	Mi-8	2
China, People's Republic of, Air Force	Mi-8	30
China, People's Republic of, Army	Mi-17	61
Colombia Army	Mi-17	11
Congo, Democratic Republic of, Air Force	Mi-24	6
Congo, Democratic Republic of, Air Force	Mi-26	1
Cote D'Ivoire Air Force	Mi-24	1
Croatia Air Force	Mi-8	6
Cuba Air Force	Mi-17	14
Cuba Air Force	Mi-35	12
Cuba Air Force	Mi-8	14
Cyprus Air Force	Mi-35	10
Czech Republic Air Force	Mi-17	21
Czech Republic Air Force	Mi-171	16
Czech Republic Air Force	Mi-24	19
Czech Republic Air Force	Mi-35	10
Czech Republic Air Force	Mi-8	3
Djibouti Air Force	Mi-8	3
Ecuador Army	Mi-171	5
Egypt Air Force	Mi-8	32
Eritrea Air Force	Mi-8	3
Ethiopia Air Force	Mi-24	15
Ethiopia Air Force	Mi-35	3
Ethiopia Air Force	Mi-8	12
Finland Army	Mi-8	4
Georgia Air Force	Mi-17	2
Georgia Air Force	Mi-24	8
Georgia Air Force	Mi-8	2
Ghana Air Force	Mi-17	4
Guinea Air Force	Mi-8	1
Guinea-Bissau Air Force	Mi-8	1
Hungary Air Force	Mi-17	7
Hungary Air Force	Mi-24	21
Hungary Air Force	Mi-8	16
India Air Force	Mi-17	50
India Air Force	Mi-26	8
India Air Force	Mi-35	32
India Air Force	Mi-8	82
Indonesia Army	Mi-35	2

Russian Medium/Heavy Helicopters

Operator	Designation	AC QTY
Iran Air Force	Mi-17	2
Iran Air Force	Mi-171	46
Iran Air Force	Mi-8	4
Iran Navy	Mi-171	5
Iraq Air Force	Mi-171	4
Iraq Air Force	Mi-17	4
Kazakhstan Air Force	Mi-24	20
Kazakhstan Air Force	Mi-26	12
Kazakhstan Air Force	Mi-8	22
Korea (North) Air Force	Mi-8	15
Kyrgyzstan Air Force	Mi-24	10
Kyrgyzstan Air Force	Mi-8	18
Laos Air Force	Mi-17	12
Laos Air Force	Mi-8	9
Latvia Air Force	Mi-8	4
Libya Air Force	Mi-24	3
Libya Air Force	Mi-35	12
Libya Air Force	Mi-8	10
Lithuania Air Force	Mi-8	8
Macedonia Army Airborne Wing	Mi-17	3
Macedonia Army Airborne Wing	Mi-24	12
Macedonia Army Airborne Wing	Mi-8	4
Malaysia Air Force	Mi-171	2
Mali Air Force	Mi-8	1
Mexico Air Force	Mi-17	11
Mexico Air Force	Mi-26	1
Mexico Air Force	Mi-8	11
Mexico Navy	Mi-8	21
Moldova Air Force	Mi-8	8
Mongolia Air Force	Mi-24	11
Mongolia Air Force	Mi-8	4
Mozambique Air Force	Mi-24	4
Mozambique Air Force	Mi-8	3
Myanmar Air Force	Mi-17	11
Nepal Army Air Wing	Mi-17	5
Nicaragua Air Force	Mi-17	9
Niger Air Force	Mi-17	2
Nigeria Air Force	Mi-35	5
Pakistan Army	Mi-17	28
Pakistan Army	Mi-8	10
Peru Air Force	Mi-17	14
Peru Air Force	Mi-24	6
Peru Air Force	Mi-25	10
Peru Air Force	Mi-8	4
Peru Army	Mi-17	23
Peru Army	Mi-26	1

Russian Medium/Heavy Helicopters

Operator	Designation	AC QTY
Peru Army	Mi-8	14
Peru Navy	Mi-8	4
Peru Police	Mi-17	10
Poland Air Force	Mi-8	8
Poland Army	Mi-17	6
Poland Army	Mi-24	43
Poland Army	Mi-8	29
Poland Navy	Mi-17	2
Romania Air Force	Mi-8	5
Romania Police	Mi-8	6
Russian Federation Air Force	Mi-8	59
Russian Federation Army	Mi-24	702
Russian Federation Army	Mi-26	30
Russian Federation Army	Mi-8	1,036
Russian Federation Navy	Mi-24	30
Russian Federation Navy	Mi-8	16
Rwanda Air Force	Mi-17	4
Rwanda Air Force	Mi-24	2
Serbia Air Force	Mi-8	7
Sierra Leone Air Force	Mi-17	2
Sierra Leone Air Force	Mi-24	2
Slovak Republic Air Force	Mi-17	14
Slovak Republic Air Force	Mi-24	18
Slovak Republic Air Force	Mi-8	1
Slovak Republic Government Flying Service	Mi-171	4
Sri Lanka Air Force	Mi-17	9
Sri Lanka Air Force	Mi-24	12
Sudan Air Force	Mi-24	9
Sudan Air Force	Mi-8	5
Syria Air Force	Mi-17	45
Syria Air Force	Mi-24	36
Syria Air Force	Mi-8	51
Tajikistan Air Force	Mi-24	4
Tajikistan Air Force	Mi-8	10
Tajikistan Government	Mi-172	1
Turkey Jandarma	Mi-17	20
Turkmenistan Air Force	Mi-24	10
Turkmenistan Air Force	Mi-8	10
Uganda Air Force	Mi-17	3
Uganda Air Force	Mi-24	1
Ukraine Air Force	Mi-24	18
Ukraine Air Force	Mi-8	48
Ukraine Army	Mi-24	40
Ukraine Army	Mi-8	112
Ukraine Navy	Mi-8	8
Uzbekistan Air Force	Mi-24	40

Russian Medium/Heavy Helicopters

Operator	Designation	AC QTY
Uzbekistan Air Force	Mi-26	1
Uzbekistan Air Force	Mi-8	58
Uzbekistan Government	Mi-17	1
Venezuela Army	Mi-17	3
Vietnam Air Force	Mi-171	4
Vietnam Air Force	Mi-24	30
Vietnam Air Force	Mi-8	58
Yemen Air Force	Mi-24	8
Yemen Air Force	Mi-8	20
Zambia Air Force	Mi-8	7
Zimbabwe Air Force	Mi-35	3

Kamov

Operator	Designation	AC QTY
Algeria Air Force	Ka-32T	3
China, People's Republic of, Navy	Ka-28	8
India Navy	Ka-28	12
India Navy	Ka-31	9
Korea, Republic of (South), Air Force	Ka-32T	1
Korea, Republic of (South), Government	Ka-32T	20
Laos Air Force	Ka-32T	6
Russian Federation Army	Ka-50	10
Russian Federation Navy	Ka-27	85
Russian Federation Navy	Ka-29	30
Syria Navy	Ka-28	5
Ukraine Navy	Ka-27	16
Ukraine Navy	Ka-29	12
Vietnam Navy	Ka-28	7
Vietnam Navy	Ka-32T	1

Forecast Rationale

Mi-38 Development Continues

Despite the withdrawal of Eurocopter from the Mi-38 project in early 2005, the program has continued to make progress. The initial Mi-38 has been undergoing flight testing, and construction of two more prototypes is currently under way. Completion of these two prototypes is targeted for 2007. They are to be used to accelerate the program schedule. Initial delivery of an Mi-38 is now planned for 2008.

The Mi-38 is being developed by a consortium called Euromil, which includes Kazan Helicopters and Mil. Eurocopter had been a partner in Euromil prior to its withdrawal from the program, which was due to Russian legal issues involving intellectual property

rights. Kazan and Mil subsequently chose to continue the program without Eurocopter.

Eurocopter had been tasked with supplying the avionics for the Mi-38, and the company's exit left Euromil looking for a new avionics supplier. In May 2006, Thales, ZAO Transas, and Mil signed an agreement for the design and development of full avionics systems for the Mi-38.

The Mi-38 is aimed at essentially the same market niche as the AgustaWestland EH101 and the Sikorsky S-92. Pending further developments in the program, no production forecast for the Mi-38 is being issued and thus the helicopter does not appear in the chart at the end of this report.

Russian Medium/Heavy Helicopters

The Mi-17V-7, a new version of the Mil Mi-8/17, remains in development. The Mi-17V-7 (also known as the Mi-8MTV-7) has VK-2500 engines, the new VR-141 gearbox, new composite main rotor blades, an uprated transmission, a new tail rotor, a glass cockpit, and increased service ceiling and payload. Installation of the VR-141 makes it possible to utilize the full power of the VK-2500 engines.

Mi-8/17 series helicopters are produced for both the military and civil markets. Much of the civil market for these rotorcraft are in the fields of construction and aerial firefighting.

Rostvertol plans to establish a joint venture company with the Hong Kong firm Lectern Aviation Supplies to promote the Mi-26T in the People's Republic of China (PRC). Among potential PRC customers for the Mi-26T is Flying Dragon, a company based in Harbin that is interested in the helicopter for firefighting purposes.

French to Flight Test Mi-26T

In June 2006, the French DGA armaments directorate signed a contract with the Russian export agency Rosoboronexport for 12 hours of flight trials of the Mi-26T helicopter in 2007. The Mi-26T is a potential candidate to fill an upcoming French Army requirement for a heavy-lift helicopter. The flight trials could lead to a joint upgrade program for the Mi-26T, which may involve Eurocopter as a participant.

Work on the Mil Mi-54 civil transport helicopter resumed in 2002, after being shelved for a few years. Draft design work was completed in 2004. Two prototypes are planned, with initial flight of the first of these targeted for 2007.

The Mi-54 is to have a maximum takeoff weight of 4,500 kilograms (9,920 lb), or 4,700 kilograms (10,362 lb) with an external load. The twin-engine helicopter will be sold with a choice of engines: either the Klimov/Motor Sich VK-800 or the Turbomeca Arriel 2C. Though intended for the civil market, a military version of the Mi-54 might be developed if a customer is found.

As it is early in the program, no forecast for the Mi-54 is included in the chart below.

The Kamov Ka-32 holds certification or validation in at least six countries outside of Russia. These include Canada, Mexico, South Korea, Spain, Switzerland, and Taiwan. Kamov is hoping to gain approval of the export version of the Ka-32 from the European Aviation Safety Agency (EASA).

The main markets for the Ka-32 are in logging and firefighting. In early 2006, Simplex Manufacturing of Portland, Oregon, delivered the first units of its Model 328 fire attack system, which was developed for the Ka-32, to LG International for use by Seoul, South Korea's Daego Fire Dept. (LG International is a South Korean distributor for the Ka-32.) The new water tank system has a computer-controlled door system and a single six-inch AC electric hover pump with a refill rate of 3,800 liters (1,000 gal) per minute. It is also designed to deliver multiple flow rates. Simplex is currently working on a 4,500-liter-per-minute system.

The PRC Navy plans to acquire up to 40 Ka-29 helicopters, more than 20 Ka-31s, and over 15 Be-200 fixed-wing amphibious aircraft. Contracts for the deal might be signed by the end of 2006.

Serial production of the Ka-60 military utility/transport helicopter is planned to begin by 2009. First flight of an initial Ka-60 prototype occurred in 1998. A second prototype, built in the Ka-60U trainer configuration, was completed in 2003. Program plans call for a third Ka-60 prototype, in an assault transport configuration, to be completed. The two initial prototypes have been undergoing flight trials with the Russian Air Force, which might acquire the Ka-60 for use in transport and training roles. A smaller version of the Ka-60 has been proposed to the Russian Navy for use as a utility helicopter.

The Ka-62 is a civil multirole version of the Ka-60. A Ka-62 prototype has been built but it apparently has not yet flown. A least two versions of the Ka-62 are planned: one powered by VK-1500 engines, and the other (called the Ka-62M) powered by CT7s. Little has been heard lately of the latter, however. Pending further news, only the VK-1500-powered Ka-62 is forecast.

Mi-28N Deliveries Under Way

The initial production Mi-28N attack helicopter made its first flight in December 2005. It was delivered to the Russian Air Force in May 2006. A second production Mi-28N was rolled out in the summer of 2006. Currently, the two production machines and two Mi-28N prototypes are undergoing a flight test campaign jointly conducted by Rostvertol and the Russian Air Force.

According to plans by the Russian Defense Ministry, a total of 67 Mi-28Ns are to be purchased by 2015. Eventually, up to 300 Mi-28Ns may be acquired. Also by 2015, a total of 12 Ka-52 attack helicopters are to be purchased for counterterrorism activities. The Mi-28N directly competes for sales with the Kamov Ka-50 and Ka-52.

Russian Medium/Heavy Helicopters

The Russian military has begun an upgrade program for its Mi-24Ps. About 200 of the helicopters are to be upgraded to the new Mi-24PN configuration. In January 2004, the service took delivery of its first five upgraded Mi-24PNs from Rostvertol. The Mi-24PN configuration includes new avionics and armament.

In a second phase of the upgrade effort, the Mi-24PNs may be further upgraded to the Mi-24PM configuration. The Mi-24PM would be powered by VK-2500 engines, and be equipped with the rotor system from the Mi-28N and additional new avionics. The Mi-24PM would also carry a wider range of weaponry.

Ten-Year Outlook

Civil

ESTIMATED CALENDAR YEAR PRODUCTION

Aircraft	(Engine)	Thru 05	High Confidence Level				Good Confidence Level				Speculative			Total 06-15
			06	07	08	09	10	11	12	13	14	15		
KAMOV														
KA-32	TV3/VK-2500	240	8	9	9	9	8	7	6	5	5	4		70
KA-62	TVD-1500	1	0	0	0	0	0	0	0	0	0	0		0
KA-62	VK-1500	0	0	0	0	1	1	2	3	4	4	6		21
Subtotal - KAMOV		241	8	9	9	10	9	9	9	9	9	10		91
MIL														
MI-8/17 (CIVIL)	TV2/TV3/VK-2500	2329	12	11	10	10	11	10	9	10	9	9		101
Subtotal - MIL		2329	12	11	10	10	11	10	9	10	9	9		101
Total Production		2570	20	20	19	20	20	19	18	19	18	19		192

Military

ESTIMATED CALENDAR YEAR PRODUCTION

Aircraft	(Engine)	thru 05	High Confidence Level				Good Confidence Level				Speculative			Total 06-15
			06	07	08	09	10	11	12	13	14	15		
KAMOV														
KA-27/28/29/31	TV3-117	223	0	0	0	0	4	6	6	6	6	5		33
KA-50/52	TV3-117	13	0	0	0	0	2	3	4	4	4	3		20
KA-60	TVD-1500	2	0	0	0	0	0	0	0	0	0	0		0
KA-60	VK-1500	0	0	0	1	0	2	3	4	5	5	6		26
Subtotal - KAMOV		238	0	0	1	0	8	12	14	15	15	14		79
MIL														
MI-24/25/35	TV3-117	2318	11	5	4	4	3	3	2	0	0	0		32
MI-26	D-136	111	2	2	3	2	1	1	0	0	0	0		11
MI-28	TV7-117V	6	6	6	7	6	6	6	7	7	7	8		65
MI-8/17 (MIL.)	TV2/TV3/VK-2500	8824	51	43	37	33	31	30	29	27	28	27		336
Subtotal - MIL		11259	70	56	51	45	41	40	37	34	35	35		444
Total Production		11497	70	56	52	45	49	52	51	49	50	49		523