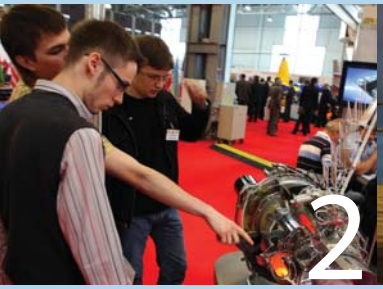
ВЕРТОЛЕТНАЯ ИНДУСТРИЯ

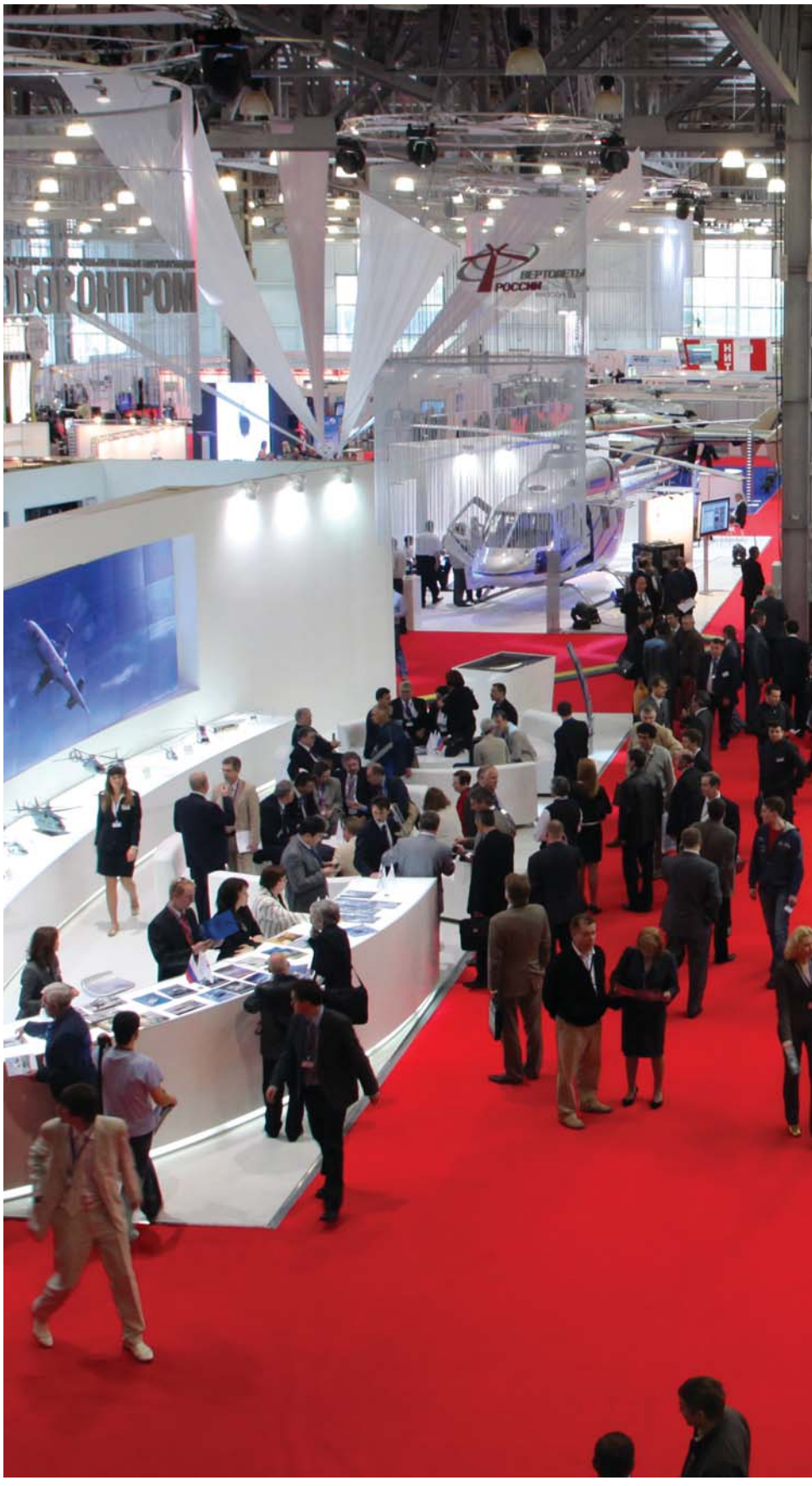
CONTENTS

special edition



HeliRussia – 2009

On May 21-23, 2009 the Crocus Expo International Exhibition Centre (Moscow, Russia) hosted the Second International Helicopter Industry Exhibition HeliRussia-2009 organised at direction No. 8-p of the Russian Government of January 14, 2008. The exhibition was organised by the Ministry of Industry and Trade of the Russian Federation under the initiative of the Helicopter Industry Association. The planner of the exhibition is CJSC Russian Helicopter Systems. The Steering Committee was chaired by Deputy Minister of Industry and Trade Denis Manturov. Eurocopter Vostok acted as the general sponsor of the exhibition.



144 companies from 16 countries participated in the Second International Helicopter Industry Exhibition HeliRussia-2009. These included: Russia, Ukraine, Belarus, Latvia, USA, UK, France, Sweden, Switzerland, Italy, Germany, Columbia, Japan, Poland, New Zealand and OAE. For comparison, the participants of the first exhibition were represented by 129 companies from 10 countries, including 22 foreign companies.

The list of participants of HeliRussia 2009 comprised developers and manufacturers of helicopters, helicopter simulators, components, cabins and special helicopter equipment. The companies providing ground support, radar control and helipads development, service centres and fuel stations also had a chance to demonstrate their products. The list of participants also includes transportation, leasing and insurance companies as well as helicopter dealers.

13 helicopters were demonstrated at the exhibition. Those included: Ka–52 Alligator, Ka–226, Ansat, Mi–171, Mi–2, EC 145, AS 350, BK 117C, Colibri EC 120B and R 44 (4 items).

– Second Time in Russia

In order to mark the opening of the main annual event of the Russian helicopter community on May 21 the helicopter of the Russian Federal Security Service Ka–226 carried the biggest flag of the Russian Federation, with the surface area of over 1,500sq.m. At 1 pm Ka–226 made three circles around Crocus Expo and continued its flight along Moscow Ring Road. At 1:30 pm the helicopter came back to Crocus Expo and made another circle of the exhibition centre commemorating the opening of HeliRussia 2009.

The participants, organizers and guests of the exhibition received letters of congratulations and telegrams from President Medvedev and Vladislav Putilin, the First Deputy Chairman of the Military and Industrial Commission under the Government of the Russian Federation.

The welcoming speech of President Medvedev was read at the opening ceremony by Leonid Reyman, advisor to the President of the Russian Federation and President of the Russian Helicopter Federation.

The following officials took part in the formal exhibition opening ceremony at 12 pm on May 21, 2009 in Pavilion No 1 of the Crocus

Expo Exhibition Centre:
• Mr. Leonid Reyman, Advisor to the President of the Russian Federation,
• Mr. Denis Manturov, Deputy Minister of Industry and Trade of the Russian Federation,
• Mr. Vladimir Popovkin, Deputy Chief of Armaments of the Armed Forces of the Russian Federation, Deputy Minister of Defence of the Russian Federation,
• Mr. Andrey Reus, CEO of OPK Oboronprom,
• Mr. Mikhail Kazachkov, Chairman of the Board of the Helicopter Industry Association,
• And other officials.

Advisor to the President Leonid Reyman declared that thanks to the governmental support the Russian helicopter industry has very good development prospects and this exhibition will also contribute to its growth.

Mr. Reyman read out the message of Russian President Dmitry Medvedev addressed to the guests and participants of the exhibition. It was stated in the document that "the Russian helicopter industry has big scientific and technical potential and traditions". "Such exposition will foster the exchange of technologies and strengthen international cooperation in the helicopter industry", says the message of the Russian President. It also states that "the growing number of the exhibition participants and guests testifies to the good perspectives of this show space".

In his turn, Deputy Minister of Industry and Trade of the Russian Federation Denis Manturov who was present at the ceremony noted that "Russia had always taken pride in its helicopter industry". "The scientific and technical potential that we managed to preserve and the transformation that is happening in the industry now create the basis for coming back to the tasks the domestic helicopter industry has always faced", - he said.
Mr. Manturov added that the Ministry of Industry and Trade together with the helicopter industry representatives consider mutual projects related to the development of a new line of Russian helicopters.

Another participant of the ceremony, Deputy Minister of Defence of the Russian Federation Vladimir Popovkin noted that the military department is interested in the development of the domestic helicopter industry as at the moment the task of fitting out the military units with helicopters is of paramount importance.

CEO of OPK Oboronprom Andrey Reus said that despite the difficult economic situation, the Russian helicopter industry, and the holding company Helicopters of Russia is one of the companies that represents it, managed not only to keep the production volume on the same level but

also increase it. The Helicopters of Russia holding company works a lot on civil and military helicopters, said Mr. Reus. He assured the participants that the domestic helicopter manufacturers will be able to complete the tasks they are facing.

Over a hundred of Russian companies (both members of OJSC Helicopters of Russia and independent manufacturers and operators from the regions) presented a large scope of expositions. Samples of military products were also demonstrated

at the exhibition showing the spectrum of national achievements in this field. The most striking example of defence products was the military helicopter Ka–52 Alligator, which was exhibited before the public outside of Crocus Expo Pavilion No.1.

The helicopter holding company OJSC Helicopters of Russia was in the centre of the Russian exposition. It presented its developments in cooperation with the Ural Optical Mechanics Plant named after Yalamov and CJSC Transas. The exhibition stand of OJSC Helicopters of Russia ran non stop presentations of Russian helicopters, which gathered big audiences.

Russian helicopter manufacturers also demonstrated brand new developments. For example, KB Maslova–Sever, LLC showed their new product – helicopter RU MAS 133. This is a light three-seat single-engine helicopter – a modernized version of the American helicopter with a reciprocating engine. This helicopter is only an interim stage on the way of creating a new twin-engine RU MAS 245, a kind of a flying laboratory for refinement and diagnostics of the company's own developments, which were also presented at HeliRussia 2009.

New agricultural equipment HeliPod III Spray System used on board of helicopter R 44 for irrigation and pollination of agricultural land was presented at the exhibition. Its effectiveness is obvious – one helicopter substitutes 20 agricultural machines. This equipment was presented by Russian Helicopter Systems.

Over 30 foreign helicopter companies took part in HeliRussia 2009. The list included such leaders of the world helicopter market as Eurocopter, Bell Helicopter, MD Helicopters, Turbomeca, Becker Avionics, Pall Corporation, Breeze-Eastern, Honeywell Aerospace, Kamatics, Simplex Manufacturing, Semia and others.

Becker Avionics, Systems Simplex Manufacturing and Breeze-Eastern not only presented their products at the exhibition stands but also held presentations in the conference halls of the Crocus Expo Exhibition Centre. Japanese Gen Corporation made a video presentation of its in-house development – the smallest helicopter in the world, unofficially called a "flying seat". Another Japanese company, Alpha Aviation Co., presented a device for convenient hauling of helicopter R 44, which caused a lot of interest among the owners of these light helicopters.

The exhibition was visited by the representatives of INTERNATIONAL HELICOPTER SAFETY TEAM, and its Program Director Mark Liptak made a presentation at one of the conferences. The Helicopter Association International (HAI) has become a traditional participant of HeliRussia. This year its delegation not only organised an exhibition stand but also participated in the international conference Helicopter Market: Reality and Perspectives.

Ambassadors and military attachés of Bangladesh, Bolivia, Egypt, Korea, Thailand, Peru, Libya, India, Indonesia, Germany, Israel, Canada and other countries expressed their interest in the exhibition.

A big business programme was part of the exhibition. One of the key events was International Conference Helicopter Market: Reality and Perspectives, organized by Helicopter Industry Association with the support of AviaPort Agency. The conference touched upon the parameters of the Rus-

sian helicopter market from the point of view of consumers and helicopter producers. The presentations included: report on the forecast of the world helicopter market by Honeywell Aerospace (Market Analysis Director Charles Park), report on the American helicopter market by Helicopter Association International (Vice-President Edward DiCampli), report on the Russian helicopter market (Chairman of the Helicopter Industry Association Board Mikhail Kazachkov), report on the development prospects of the biggest Russian helicopter operators Aviation Company UTAir. The conference was held on the first day of the exhibition and caused a broad resonance among the Russian helicopter market participants.

There is a big number of Russian helicopters being operated in the world and therefore the helicopter holding OJSC Helicopters of Russia held a conference Safety of the Russian Helicopters, which was interesting both for Russian and foreign operators.

The round table Usage of Liquefied Propane and Butane – Aircraft Condensed Fuel at Mi-8 Helicopters was dedicated to Mi-8 helicopters. The round table was organized by Federal State Unitary Enterprise State Scientific Research Institute of Civil Aviation, Federal State Unitary Enterprise Central Aerohydrodynamic Institute named after Professor N.E.Zhukovsky, and OJSC InterAviaGaz. The usage of a new fuel type that helps to reduce helicopter operation costs is especially important during financial crisis; therefore the topic caused so much interest – representatives of 39 organisations participated in the round table.

Reduction of costs, optimization of business processes and work performance improvement seem to be the most vital tasks for manufacturers of helicopters and components as of today. One of the most powerful and effective instruments for solving these tasks is the world-wide acknowledged methodology of lean production (Lean Production, Lean, Kaizen, Toyota Production System). Almost all the world industry leaders – Boeing, Sikorsky Aircraft Corporation, Bell Helicopter Textron and others – build their production systems on the basis of Lean Production. As part of the business agenda of HeliRussia 2009, Centre Orgprom conducted a presentation seminar Lean Helicopter Manufacturing: Leadership Potential, where it explained the philosophy and methodology of Lean Production using the examples of foreign and Russian companies and presented instruments that help to achieve quick and effective results.

Seminar named Program and Project Management: Industry, Objectives, Implementation Methods organized by PM Expert was dedicated to the optimization of corporate management methods.

It was allowed to demonstrate military products at the exhibition; and for this target group the Military Academy of the Central Command of Armed Forces and the Military and Scientific Committee of the Military Aviation Forces conducted the round table "Development of the State Helicopter Aviation: Problems and their Solutions".

Traditionally, at the Second International Helicopter Industry Exhibition HeliRussia 2009 the Helicopter Industry Association conducted an annual prize award ceremony in three nominations: Pilot of the Year, Designer of the Year, and Engineer of the Year. The ceremony took place on May 22 at 4 pm at the Exposition Pavilion. The Presidium of the Helicopter Industry Association selected the following winners: in

the nomination Engineer of the Year – Olga Ionkina, head of section 20 workshop No.18 of OJSC Stupinsk Machine Building Manufacturing Enterprise; in the nomination Pilot of the Year – Sergey Konyaev, Mi-8 captain of an air squadron of the Strezhevsk branch of Aviation Company Tomsk Avia LLC; in the nomination Designer of the Year – Alexander Bayev,deputy chief designer of the service of Chief and Leading Designers and Specialists Related to OJSC Kamov.

The ceremony of awarding the winners of the competition Helicoptes of the 21st century organized by OJSC OPK Oboronprom and OJSC of Helicopters of Russia, and a photo competition Beauty of the Rotary-Wing Machines, held for the second year by the Helicopter Industry Association, also took place at HeliRussia 2009.

The third day of the exhibition was totally dedicated to the presentations of the educational institutions. Seven training institutions, including the Moscow Aviation Institute and the Helicopter Design Department, held presentations and MAI presented the developments of its design office at the exhibition stand.

The newspaper ShowObserver HeliRussia 2009 was published during the exhibition.

Over three days the exhibition was visited by more than 7 thousand people, including prominent political leaders and public officials of the Russian Federation and other countries, representatives of foreign military departments, businessmen and helicopter amateurs. The exhibition was visited by a big number of families with children who enjoyed exploring the helicopter cabins of different producers.
It should be noted that one of the honoured guests of the exhibition – Head of the Federal Security Service Aviation Nikolay Gavrilov – came to see the exposition in an Ansat helicopter that landed close to the entrance of the exhibition pavilion.

Thus, already now one can come to a helicopter exhibition in a helicopter and for that one does not need to own a helicopter or use the company one – one can use the helicopter taxi services. We did not see anything like this last year. What will happen next year?

The next, third International Helicopter Industry Exhibition HeliRussia 2010 will also be held in Crocus Expo International Exhibition Centre on May 20-22, 2010.

We are confident that it will be even more interesting and diversified.

We look forward to welcoming you at the HeliRussia 2010!

THE KA–32 HELICOPTER

YESTERDAY, TO-DAY AND TO-MORROW

On September 28, 2009 the European Aviation Safety Agency (EASA) issued Type Certificate to the Ka-32A11BC multirole all-weather helicopter for flying in the European Union countries' air space. EASA.IM.R133 Type Certificate permits any operator of the European Union to use the Russian helicopter for commercial purposes.

In 1998 the Canadian Type Certificate was issued to the Ka-32A11BC helicopter under the USA's FAR29 requirements and subsequently national Type Certificates of Chile, Mexico, Japan, China, South Korea, and other countries followed. The Ka-32 is the only Russian helicopter that has obtained Certificates under the USA's and European Airworthiness Regulations. And it is not just the clearance for helicopters operation that the certification ensures; but it also enables the promotion of helicopters in the world market. The fact of certification proves the acknowledgement of the Russian certification system, its regulation basis, and helicopters and engines production quality assurance system.

The Ka-32 helicopter is used extensively both in Russia and outside the country and it takes a leading position in its category regarding the most important parameters: payload capacity, maneuverability and controllability.

Inherently, a helicopter is a double-use aircraft. The Ka-32 developed on the basis of the Ka-27 combat helicopter presents a vivid evidence of the case. It has inherited unique performance of the combat helicopter: it can be based

on ships and perform landings and take-offs from limit-size pads, also under conditions of high pitching and rolling of the ship.

Small dimensions of the helicopter, its ability of ditching using floats, night and all-weather flight capabilities, and resistance to corrosive environment of the sea are only some of the merits inherited by this helicopter from its ancestors.

The Ka-32 helicopter modified from the Ka-27 performed its maiden flight on 11 January, 1980. It was flown by the test-pilot N.P. Bezdetnov. And already in February and March of the same year the helicopter made its successful "start" on the "Sibir" nuclear-powered ice-breaker taking part in the pole expedition through the Barents and the Kara seas.

In 1990 the first flight of the Ka-32A multirole all-weather helicopter took place. It was the first Russian helicopter which obtained the homeland airworthiness certificate. To carry out the certification of this helicopter, the Aviation Register of the Interstate Aviation Committee (IAC AR) and Kamov Company developed special Airworthiness Regulations 32.29 (helicopter) and 32.29 (engine) which took into account both the USA's FAR-29 and FAR-33 Regulations requirements and the requirements of the Russian NLGV-2 Regulations. The specific approach that had been chosen proved to be quite correct later by application for certification abroad.

The on-board equipment and systems of the Ka-32A helicopter have undergone considerable upgrade resulted in significant enhancement of the helicopter performance that ensures its operation from ship decks, off-shore rig pads, and from unequipped sites. The spectrum of the Ka-32A intended use is very wide: transportation of people and cargoes in the transport compartment and of bulky cargoes on the external load sling system, construction and erection, search and rescue and emergency rescue operations, evacuation of patients and casualties, pilots training and others. To a considerable extent, successful completion of these operations is achieved due to easy piloting techniques peculiar to a co-axial rotor scheme helicopter. The Ka-32 boasts the best safety performance by maneuvering close to obstacles. This is particularly important in rescue operations conducted under extreme conditions when the power unit has no reserve power.

Due to a high power-to-weight ratio a co-axial rotor scheme helicopter has the highest hovering ceiling and vertical climb performance if compared to other rotorcraft. This performance is the main component of the helicopter maneuverability and particularly in high/hot conditions.

The experience of the Ka-32 helicopters operation has proved not only their remarkable flight performance but also a high reliability of the helicopters' hardware. For example, the total number of flight hours of three Ka-32A11BC helicopters operation in Canada during the ten-year period amounts to 45,000. And it was for the first time in the national practice when the helicopters were not AOG for overhaul as scheduled repairs substituted for overhaul repairs. The Company is planning to use this practice by the operation of all the Ka-32 helicopters.

Over 160 aircraft of different modifications were built of which more than 80 were exported to Canada, Switzerland, Spain, Portugal, Chile, Mexico, Malaysia, Japan and other countries. The fleet of the Ka-32 helicopters in the South Korea is over 60 units. They are operated successfully by the Forestry Aviation, by the Navy, and in fire fighting operations.

The Ka-32 helicopters are in batch production at Kumertau Aviation Production Enterprise JSC (as well as Kamov Company, it is an associated company of the Russian helicopter holding under the control of the 'Russian Helicopters' JSC that is affiliated to the 'Oboronprom' Joint Industrial Corporation).

It is the interests of operators that Kamov Company puts on the top in its helicopter design and development activities. In response to operators' requests the Company is planning to upgrade the Ka-32 helicopter in order to increase its payload capacity up to 7 tons that will expand the range of the helicopter operation missions and make its flying more comfortable.

Ka-32A11BC Main Performance Data

TAKE-OFF WEIGHT	11,000 KG
ENGINE	TV3-117VMA: 2 X 2,200 H.P. (TAKE-OFF POWER)
SERVICE CEILING	5,000 M
RATE OF CLIMB	15.0 M/S
FLIGHT RANGE	670 KM
PASSENGER CAPACITY	2+13; 2+16

To Latvia. For Test

If somebody had told me some time ago about Mi-26 trials in Riga I would have been very much surprised: why Latvia? Considering the notorious foreign policy changes, such a fact is conceived as nonsense. And nevertheless, the Mi-26 helicopters have belonged to the world for a long time, so the extension of the lifecycle limits of these rotary-wing giants is not only Russian technicians' and designers' concern. As for complexity, scope, depth and multiplicity of factors, such research in the helicopter world is definitely beyond comparison. It is noteworthy that "our Latvians" take a very active part in this process. Indeed, the political map can change its color when it comes to real value.

It's common knowledge that helicopters' life and death depend on authenticity and timeliness of tests. The more accurate the information is, the more correct the forecast of the program "life" prospects will be.

Technical longevity is determined by the ability to expertly manage fleet condition which is impossible without scientifically grounded data received in the course of tests. And helicopters are no exception either.

The Mi-26, a heavy transport helicopter, was designed for military purposes, hence its modest

flying life and issues concerning material selection and primary structure production. As a consequence, when the Mi-26 made in Russian aviation plants had expired their lifetime limits and fuselage cracks turned up, tests became an urgent issue. Where and how could that be done? So we had to seriously consider going abroad, to the country that had recently joined the NATO but where our former test facilities were not only preserved but also updated.

Looking Back

Long ago, in 1960, Riga laboratories were created in the State Research and Development Institute at the Civil Air Fleet. From the very beginning one of their key activities was aviation material and construction reliability research. It all began with testing the Soviet civil aviation flagman, Tupolev Tu-104, then came the Ilyushin Il-18. Starting with the Mi-1 and Mi-4 entry into service there appeared an acute need in research of overhaul period extension for helicopter units. Quite soon a bench base was created not only for first helicopters but for the Mi-2 and Mi-8, advanced at that time.

The crisis of the civil aviation applied science after 1991 and the total cut of funding did not escape the Latvian laboratory. But Aviatest (the center's new name) staff managed to maintain both bench equipment providing for good quality of tests and the staff able to solve the most complicated issues.

In August 1998, when Aviatest existence was at risk, its partners and friends did their best to help the unique test subdivision survive. Scientific research went on. Aviatest was accredited according to

the European standard LVS EN ISO/IEC 17025. The accreditation allowed Aviatest to carry out and support tests on a completely new level. The center was included into a joint European integrated project NICE-TRIP for the new generation rotary-wing aircraft development and test together with AgustaWestland and Eurocopter, European helicopter industry leaders.

Tyumen, Siberia – Riga Special Trip

Let's go back to 2003, when most of the Mi-26 fleet came to service life limit and the aircraft operation could have been stopped but for the State Research and Development Establishment at Civil Air Fleet which took a decision to carry out tests for overhaul-period renewal. The Mi-26 with a renewed overhaul-period was in great demand but nobody was ready to provide an aircraft for tests. A suitable helicopter was found in Tyumen, Siberia. It had to be assembled, brought to flying condition, taken to Latvia and landed in the center of the capital of a not-so-friendly independent state. Landing site: an industrial area, buildings crowding inside it, a tiny site surrounded by trees that were eventually sawn down. Local authorities gave permission for the period from Saturday to Monday. Bad weather reduced the gap to two hours. A huge helicopter flew over the city, hovered over a small bandbox and started landing. Hardly had it touched the ground when the sky turned black and it started snowing. The local press and community became aware only the next day and attacked the Latvian Ministry of Defense when the giant was already in place.

Though the activity algorithm was rather standard, it took two years to develop the test bench and another half-year for helicopter setting and loading diagram refinement. Special dynamic hydro cylinders with 500 and 1000 mm stroke were developed and produced for the aircraft tests. Long life and low friction rate allowed long-term high frequency tests. On September 11, 2006 the bench started to work. All together 10 080 "flights" have been carried out! The weakest points were to be examined. In case of the Mi-26 it was the tail boom and the antitorque rotor pylon splice. Several variants of update were proposed, the most efficient one was selected and the tail boom adjustment was done. Rostvertol representatives fitted two new bulkheads. Further strain measurement confirmed efficiency of the update. Since then tests could be realized under a more rigid program. 200 000 cycles were scheduled, 20 000 per month. At the moment the laboratory has already confirmed that the helicopter life cycle is 4200 hours. In the future 14 000 hours seems real!

Rotary-wing giants will keep on flying still for the benefit of humans thanks to our ex-fellow citizens devoted to helicopter business. On October 25, 2009. Aviatest marked 6 years since the start of integrity tests of the aircraft. It bears repeating a forgotten truth: no tests, no helicopters.

Eugene Matveev

Mi-34S


2007
88
EHC 2007

Eurocopter celebrates

the maiden flight of its new EC175 helicopter

EC175, the latest member of the Eurocopter range, performed its official maiden flight in the skies above Marignane on 17 December, 2009. At the controls were Alain Di Bianca, Eurocopter Experimental Test Pilot, as well as Michel Oswald and Patrick Bremont, Flight Test Engineers. Officials, industrial partners, launch customers and Eurocopter employees were all on hand for the event. This newest addition to the Eurocopter family in the 7-metric-ton class has been developed and manufactured in cooperation with the China Aeronautics Industries Group Corp. (AVIC), a longstanding Eurocopter partner.

"It's an immense pleasure to see the EC175 soaring through the skies," declared Eurocopter CEO Lutz Bertling. "This helicopter was developed in close cooperation with our customers to ensure it would be perfectly suited to their needs—particularly in terms of safety and comfort. This is the product everyone's been waiting for on the civil market. I would like to congratulate and thank our colleagues from China, all our personnel who invested so much time and effort in this project, and, of course, our industrial partners. Their combined efforts have made it possible for the EC175 to perform its maiden flight right on schedule, that's to say exactly four years after the program was launched, which is a real technological wizardry. "

The new generation EC175 has a multi-role design and can carry out a wide scope of civil missions. It slots perfectly into the Eurocopter range between the AS365 Dauphin (4/5 metric tons) and the AS332/EC225 Super Puma (9/11 metric tons) families. It benefits from a mix of proven and advanced technologies, making it a very performing and reliable helicopter. Depending on its configuration, it can hold up to 16 passengers. A total of 114 EC175s have already been ordered by 14 different customers. Certification of the EC175 by the European Aviation Safety Agency (EASA) is slated for 2011, and the first deliveries are scheduled to follow in 2012. Eurocopter expects to sell 800 EC175s over the next twenty years, creating nearly 2000 new direct and indirect jobs.

Cooperation

The EC175 program was launched on December 5, 2005. The helicopter was developed in cooperation with Chinese industry in just four years thanks to innovative new computing tools that offer major time savings. The work teams, separated by some 10,000 km, have been working together under the aegis of the French and Chinese governments. Their cooperation has been exemplary, and has benefitted from 30 years of close ties between the partners, first through the Dauphin and then through the EC120. During the development phase, an average of 50 Chinese employees joined their Eurocopter colleagues in France to define the helicopter's characteristics. Now it's the turn of Eurocopter's employees to reciprocate, and a staff of 30 is currently on

Starting from 2012, Eurocopter's EC175 will join UTair's fleet of helicopters. Russian air company UTair, based in Tyumen, West Siberia, is the biggest helicopter operator in Russia. In 2008, UTair became a launching partner for the EC175 with an order for 15 helicopters and an option for 15 more.

permanent assignment in China to assist the teams with design, quality, production and procurement work.

The development and industrialization work has been equally split between Eurocopter and AVIC according to the specialties of each company. Two different helicopters will result from the common platform: The EC175 manufactured, sold and maintained by Eurocopter in Marignane and the Z15, manufactured, sold and maintained by the AVIC Group.

Missions

The EC175 is a medium-lift twin-engine helicopter that can perform many different civil missions. Initially designed for the oil & gas industry to carry work teams to the platforms, it meets the strictest safety and availability requirements that have become a must for operators in the industry.

The helicopter is also being developed for missions such as search and rescue and emergency medical transport, and can also meet the needs of the commercial aviation industry for VIP and corporate transport.

Technical characteristics

The EC175 benefits from the most cutting-edge technology available. It is powered by twin Pratt & Whitney PT6C-67E engines with dual-channel new generation Full Authority Digital Engine Controls (FADEC). With its completely new avionics, the EC175 has an effective and easy-to-use man machine interface, which considerably reduces the pilot workload. Both the pilot and co-pilot can therefore concentrate more fully on their missions. The EC175 is indeed equipped with a full screen cockpit and a digital four-axis Automatic Flight Control System (AFCS) that outperforms any other automatic pilot system on the market. It also has a five-blade Spheriflex main rotor and an airframe that complies with the most stringent certification requirements.

The EC175 offers the widest cabin of any helicopter in its category, which provides an unmatched level of comfort. The aircraft can be boarded easily using the wide sliding doors on either side of the fuselage and the immense baggage compartment is also accessible from both sides of the helicopter. All very large windows offer a great visibility and can be jettisoned so that passengers and crew can quickly exit the helicopter in the event of an emergency.

The EC175 has also been designed to reduce vibration levels to a minimum; its blade design has taken forward the concepts that have proven so successful on the EC155 and EC225. Special care has been taken to reduce both internal and external noise levels to make the EC175 the quietest helicopter in its class, offering levels well below the limits recently established by the International Civil Aviation Organization.

About Eurocopter

Established in 1992, the Franco-German-Spanish Eurocopter Group is a Division of EADS, a world leader in aerospace, defence and related services. The Eurocopter Group employs approx. 15,600 people. In 2008, Eurocopter confirmed its position as the world's No. 1 helicopter manufacturer in the civil and parapublic market, with a turnover of 4.5 billion Euros, orders for 715 new helicopters, and a 53 percent market share in the civil and parapublic sectors. Overall, the Group's products account for 30 percent of the total world helicopter fleet. Its strong worldwide presence is ensured by its 18 subsidiaries on five continents, along with a dense network of distributors, certified agents and maintenance centres. More than 10,000 Eurocopter helicopters are currently in service with over 2,800 customers in more than 140 countries. Eurocopter offers the largest civil and military helicopter range in the world.

Vertical-T Air Company

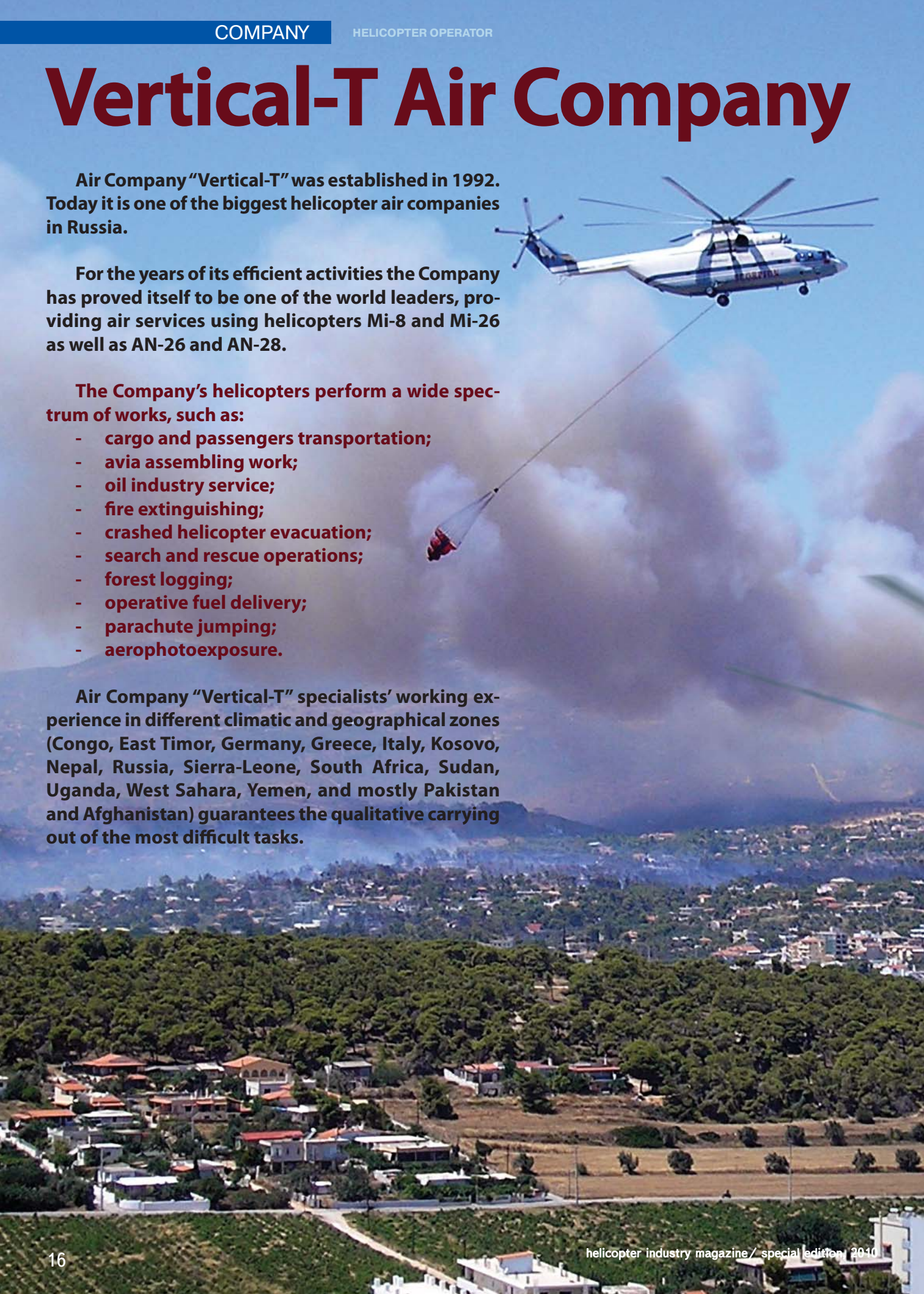
Air Company "Vertical-T" was established in 1992. Today it is one of the biggest helicopter air companies in Russia.

For the years of its efficient activities the Company has proved itself to be one of the world leaders, providing air services using helicopters Mi-8 and Mi-26 as well as AN-26 and AN-28.

The Company's helicopters perform a wide spectrum of works, such as:

- **cargo and passengers transportation;**
- **avia assembling work;**
- **oil industry service;**
- **fire extinguishing;**
- **crashed helicopter evacuation;**
- **search and rescue operations;**
- **forest logging;**
- **operative fuel delivery;**
- **parachute jumping;**
- **aerophotoexposure.**

Air Company "Vertical-T" specialists' working experience in different climatic and geographical zones (Congo, East Timor, Germany, Greece, Italy, Kosovo, Nepal, Russia, Sierra-Leone, South Africa, Sudan, Uganda, West Sahara, Yemen, and mostly Pakistan and Afghanistan) guarantees the qualitative carrying out of the most difficult tasks.



Our helicopters

Mi-8

The middle class helicopter Mi-8 is the most widely spread in the whole world. Air Company "Vertical-T" operates the following types of helicopter Mi-8: Mi-8T, Mi-8P, Mi-8MTV-1 (AMT), Mi-171(172).

Helicopter Mi-8 MTV-1 is suitable for transporting cargoes weighing up to 4 tons (value – 25 cubic metres) inside the fuselage or on the external load sling – up to 5 tons. Its maximum speed is 250 kilometres per hour. Its range (with the additional fuel tanks) is up to 570 (1500) km, ceiling – 6000 m.

Mi-26T

Mi-26T is the biggest helicopter in the world with the unique spheres of application.

It is capable of carrying cargoes weighing up to 20 tons in the cargo compartment and on the external load sling.

Mi-26T belongs to the new generation of heavy helicopters and is equipped with the modern pilot navigation devices and can perform flights either at day or at night time according to the rules of visual and instrument flights.

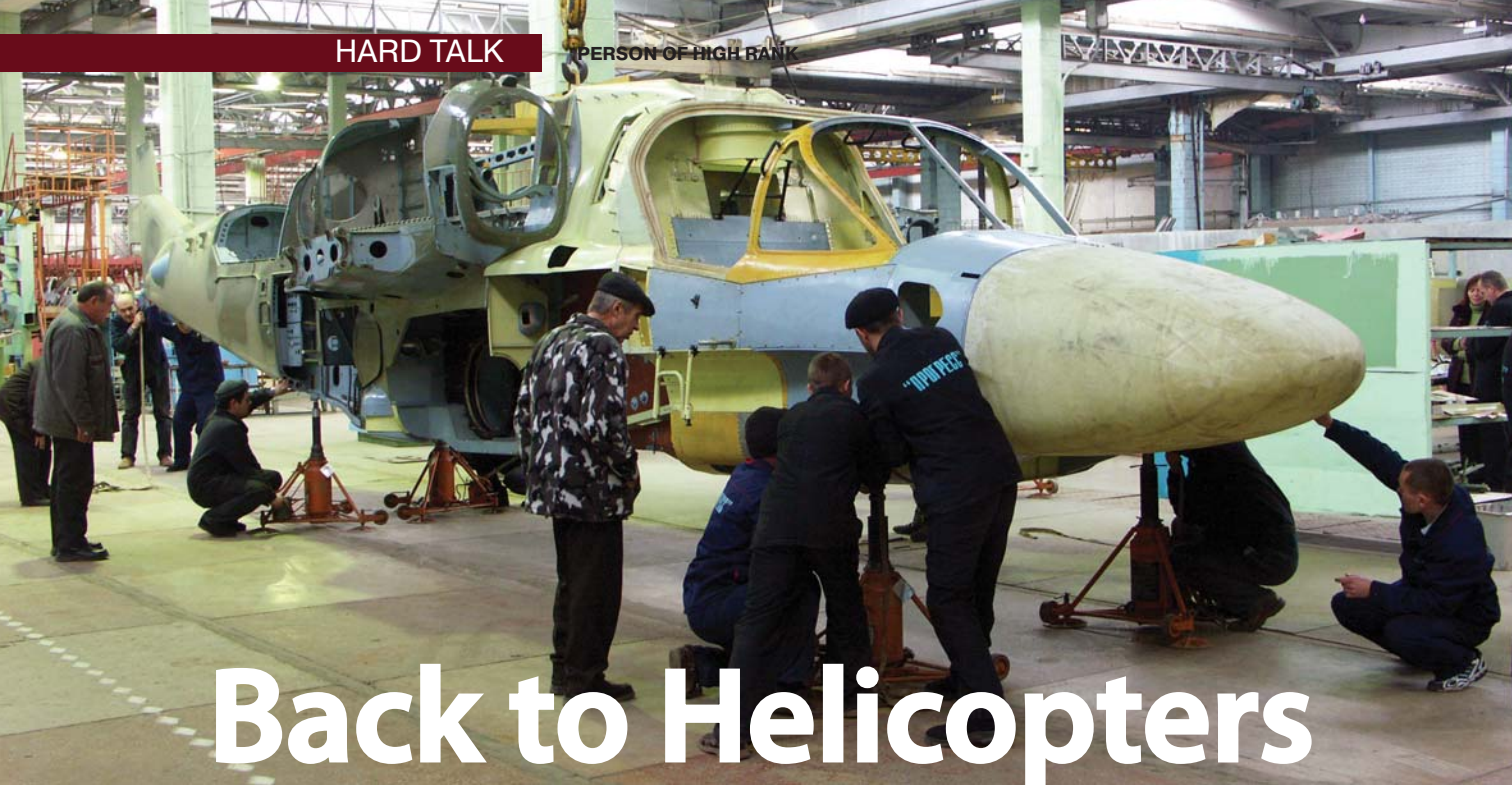
Its maximum speed is 250 kilometres per hour. Its range (with the additional fuel tanks) is up to 900 (1920) km, ceiling – 6000 m.

Customers:

- United Nations (Mi-8 and Mi-26 in Afghanistan, Congo, Kosovo, Nepal and Sudan)
- ISAF/NATO (Mi-8 and Mi-26 in Afghanistan)
- World Food Programme (Mi-8 in Pakistan)
- Supreme – main NATO food provider (Mi-8 in Afghanistan)
- USAID (Mi-8 in Afghanistan)
- US Army (Mi-8 in Afghanistan)

Contact information

The base airport
Address: "Zmeevo" (Airport), Tver, 170007, Russia
Tel./Fax: + 7(4822) 380039
E-mail: info@vertical-t.ru
www.vertical-t.ru



Back to Helicopters

Interview with "Progess" AAC CEO Yuri Denisenko

Now that the "Russian Helicopters" holding has announced its plans to expand output there has turned up a calamity issue of helicopter industry companies revival. In what way is the "Progress" aviation company going to recover former level of production and are there possibilities for that?

Helicopters are machines that are worth the effort. And let us not forget that historically our association is part of a military industrial complex. Worldwide it is a great business advantage. This is on one hand. On the other hand, even those helicopters that are meant exclusively for military purposes are a kind of bridge to some important civil projects. All the more, now this is "number one" topic in aviation. That is why we were so eager to recover helicopter production. Primarily it concerns the machines that have already been assimilated at the plant - Ka-50, for which we had a technological backup. Developing this project further we planned to switch to Ka-52 "Alligator", a two-seated modification of "Black Shark". Certainly it required profound preparatory work of the company's staff. The main thing is that the "Oboronprom" company began consolidation of the companies within the industry. We immediately perceived the support of this company and that of "Rosoboronexport" too.

What kind of assistance was it?

It was bringing us to participate in export programs: we performed a missile contract. Also it was funding under a state missile order.

Please tell us about the Mi-34 helicopter production prospects.

Such a project exists. It represents a separate light aviation production complex including also a sport and pilot Yak-54. I can say with confidence that now there are no problems with the Mi-34 helicopter production at "Progress". There are people, there are technologies. Certainly there are some issues concerning production efficiency, production management efficiency and technological processes efficiency. But there is a program aimed at the reorganization of our production line. We are going to substitute mechanical processing equipment with more up-to-date processing centers and create production in the form of a unique continuous technological chain. We are going to implement new IT-based production planning. Accordingly we will need a different level of staff qualification – from managers to workmen.

These are general program items and how about real steps towards light helicopter production implementation?

Surely there are exact tasks connected with internal production issues. We have a definite Mi-34 program developed by **"Russian Helicopters"**. And the first step there is component production revival on allied plants. And as soon as these companies are ready we will start Mi-34 production in full conformity with requirements for helicopters of this class. Here, as I have already mentioned, technological difficulties may arise. Because some units have fallen out of this chain. And we will need some prompt measures to be taken for complete cycle reconstruction. There is a managing company

working on it that unites the whole helicopter holding. As for the design-engineering department, we are interacting with it using modern digital technologies. That regards requirements to the newest equipment that we are installing and besides mold loft method specialists are very few.

And what about staff (engineers, technologists)?

It's very important that the funding issue is being solved by way of participation in federal target-oriented programs and regional/local programs. So on the basis of this we can refine our production and train our staff according to its needs. Staff training is one of the crucial tasks that the company sets itself. The situation in Arsenyev is rather typical: the company is city forming and its activity affects the standards of living and the social level a lot. No trained specialists – nobody to maintain this level. In Arsenyev there was and there still is an aviation college. On the basis of the Arsenyev technical vocational school we plan to create a resource center for all machine-building industry of the Primorie Territory. This is inspired by the Union of Mechanical engineers. We also train technical staff in this city on the basis of the Far East State Technical University. With our support this institution has already acquired a license for aircraft and helicopter industry engineering staff training. Around 100 specialists are being trained now. We also have an up-to-date program with Komsomolsk-na-Amure University. Composite material specialists are trained in the Moscow Aviation Technological Institute named after K.E. Tsiolkovsky. On the whole staff training program is well underway and as soon as production unrolls we will not remain without specialists.

Increase in orders

for helicopters to support Olympic projects

Krasnaya Polyana is a well-known reserve of the Northern Caucasus, which enjoys great popularity among tourists and sportsmen. This resort with lavish nature will play a special role in Winter Olympics 2014.

Nowadays construction of new sports facilities is at full tilt, infrastructure for the Olympics is being created in Krasnaya Polyana. "The preparation is going on in the right direction,"- noticed Jean-Claude Killy, Chairman of the International Olympic Committee (IOC) Coordination Commission for Sochi 2014, who visited Krasnaya Polyana at the end of April. "I am sure that when sportsmen from all over the world come to Sochi in 2014 they will be dazed at beauty and quality of facilities, which will be used for competitions. I am sure that visitors and mass media will be also pleasantly surprised," – mentioned Committee Chairman.

Even now there are surprising things in Krasnaya Polyana. Recently Mi-26T, a giant helicopter, has appeared there to install power transmission towers in the mountains. This challenge is taken up by specialists of Research - And - Production Complex PANH OJSC from Krasnodar.

Our correspondent aboard the helicopter watched the crew of the helicopter and Sergey AGROV, I class Test Pilot. Our correspondent managed to ask a few questions to the participants of the unique operation.

Sergey PARSHENTSEV, I class Flight Test Engineer:

- All the members of our flight crew are experienced and qualified people. The commander has thirty-seven years of flight work and eleven thousand flying hours. He has piloted five types of helicopters.

This year our crew has been mentioned for participation in a rescue operation. We evacuated people from areas flooded by Kuban spate. The commander was awarded Medal for Courage and other crew members – medal for People Rescue for this operation.

Now we are performing construction works to install high-voltage power transmission towers 220. The line route starts in Tuapse and ends in Krasnaya Polyana. This transmission line will supply power to all Olympic sports facilities, which are planned for construction here.

Sergey AGROV, I class Test Pilot:

- The combination of the commander and the operator is a key element in the team

work. Today Sergey Parshentsev is performing the operator's duties. He directs me to the load and gives all necessary commands: "A meter to the left!", "A meter to the right!", "Think forward!", "Think backward!" Such specific commands are used for construction works. Accuracy of commander's following operator's directions is extremely important for the time spent and challenge result. Installation of a transmission line requires operators watching the left and the right semispheres and the tail. All the helicopter team – seven people – is involved in work. And a ground support team to add to this. That's our collective works for the Olympics, so to speak.

Sergey PARSHENTSEV:

- The topography is very composite. We have to make of external load slings longer, which creates additional difficulties as the amplitude of vibration increases and it is difficult to quench it.

Now we use an azimuth orientation system – experimental technique developed by our company. This system is based on

using a bilateral suspender with a two-point load fastening. The load may be stabilized and moved with on-board LPG-300 hoists. The load may be turned in azimuth in plane parallel to the main rotor plane. When the helicopter approaches an erection joint, the load is orientated in the direction convenient for alignment of technological axes. The equipment, which we use, is not in mass production.

Sergey AGROV:

- Now I'd like to say a few words about people who work on the ground. We have a team of ground support in the company science department. A head of flights with a radio set is constantly present at the stake. He determines wind direction and carries out communication with a helicopter team and a customer. He is always ready to help us in any contingency event. For example, if it is required to immediately release load because of the fire onboard or engine failure. We should always keep in mind that there are people under the helicopter…

… Having received a code signal, Sergey Anatolyevich stopped his speech: - Now, we are getting ready. Come on!– hurried the commander to the rotor plane. I followed him.

The crew members were taking their places. The ground team moved to a safe distance. The airborne auxiliary power roared. The huge blades start their smooth movement gradually spinning up. The humming tumble and vibration intensified. As if unwillingly, the huge machine got off the ground blowing swarms of dust and last year's leaves. A power transmission tower gradually rose to its full height. The full construction left the ground. Higher and higher… The copter with the load slowly changes its direction to straight level.

A glorious view on the highlands opened from above. Snow-capped Aibga ridge sparkled dazzlingly. Splitting against stones and benches, Mzymta waters rushes to the sea. But the crew was too absorbed with its work to feast eyes on the nature beauty.

There was a stake under the helicopter. Operators put on safety harness. All communication facilities were switched on. Our flying crane maneuvered smoothly obeying Sergey Agrov's skilful manipulations. Well... It's done! The construction was installed.

The load was released. Drifting up. Level flight. The task was performed! We returned to the same ground. After the flight

asked the crew commander to share his opinion about the unusual rotor plane.

Sergey AGROV:

- Mi-26T is a wonderful helicopter! It's nearly devoid of any shortcomings if you know how to operate it. Upon the whole it is very reliable. All the principal systems have standbys. What am I worried about now? Our successors. Who can I share my experience with? This is the problem to be solved. More young people should be trained for flights on such machines...

After visiting the Olympic construction sites in Krasnaya Polyana Jean-Claude Killy, Chairman of the International Olympic Committee (IOC) Coordination Commission for Sochi 2014 emphasized: "Here (in Russia) there is a hot team, which keeps a check on this national project. We expect amazing and astonishing Olympics in 2014. Taking into account everything we have seen this week, this team will make the dream of Russian people and athletes of all over the world true".

Perhaps, it should be mentioned that all people involved in maintaining and operating Mi-26T in Krasnaya Polyana have the right to consider themselves members of this team.

Mi-26 History

Development of Mi-26 heavy transport helicopter was started in Mil Design Office in the early 1970-s. The new machine was intended to change the heavy Mi-6, which had been in use since the 1960-s. A new, more powerful helicopter was needed be-

cause of more challenging tasks assigned for the countries' helicopter fleet. It was necessary to develop a helicopter capable of transporting large-sized cargoes of 15-20 t at a distance of 500-800 km.

The research done by the Moscow Helicopter Plant together with the Central Aerohydrodynamic Institute and the Central Institute of Aviation Engine Building determined use of a classical single-rotor design. The new generation heavy helicopter was called Mi-26 (Product—90). Its advance project was approved by the Ministry of Aircraft Production Scientific And Technical Council in December 1971. D-136 engines were used as power units for the helicopter. This engine model was developed by the Zaporozhye Engine Building Design Office named Progress. The VR-26 main gear box was designed and built by Mil Plant.

Specialists of Moscow Helicopter Plant did their best to take into account all experience gained from operation and servicing of Mi-6, Mi-8 and Mi-12 (V-12) to design Mi-26. The helicopter was equipped with a auxiliary power unit. Servicing personnel has a convenient access all main units and systems without any auxiliary equipment. Cargo handling equipment was modernized. The new helicopter was equipped with a navigation set for flights at any time of day in favourable and adverse weather conditions.

The first Mi-26 flight was on the 14th of December, 1977.

It has been in serial production since 1980.

The Mi-26 helicopter was first demonstrated to wide audience in June 1981 in Le Burget Salon, France.

More than 300 helicopters had been built before 2008, 20 of them were exported to 9 countries.

One of the helicopter models – Mi-26T – was certified by the IAC aviation register talking into account FAR-29 requirements and was called Mi-26TS.

The Mi-26 is the heaviest and most powerful helicopter in the world of all helicopters in serial production.

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Editorial/advertising

Editor
Vladimir Orlov
orlov@helicopter.su

English editor
Olga Sheveleva

Maker-up
Irina Danenova

Advertising manager
Ilona Zinovieva
ilona@helicopter.su

Translator
Alex Bondarenko

Photographer
Dmitri Kazachkov

Photos by
Dmitri Kazachkov, Dmitri Lifanov, Alexei Mikheev, Mikhail Bibichkov, Patrick Penna, Eugene Matveev

Publisher

Russian Helicopter Systems
Address: 123308, Silikatny 3rd Proezd, 4
Phone: (495) 785-8547
Fax: (495) 785-8547

E-mail: mike@helisystems.ru
URL: www.helisystems.ru