RUSSIAN AVIATION & MILITARY GUIDE

Special analytical export project of Industrial Weekly

№03 (10) Special Edition 2017

Aerospace and Naval Innovations for ASEAN

LIMA'17

Special Partnership

Russian Aviation Military Guide

#03 (10) Special Edition 2017

'Industrial Weekly' special export project

Registered in the Federal Service for Supervision of Communications, Information Technology and Mass Media (Roscomnadzor) 09.12.2015

PI № FS77-63977

The magazine 'Russian Aviation & Military Guide', published by the United industrial edition, is a winner of National prize 'Golden Idea 2016' FSMTC of Russia

General director
Editor-in-chief
Valeriy STOLNIKOV

Chief editor's deputy
Julia GUZHONKOVA
Elena SOKOLOVA

Commercial director
Andrey TARABRIN

Managers
Tatiana VALEEVA
Natalia MOZHAEVA
Andrey PARAMONOV

Designed by
Olga Filippova
Alexey ZINOVYEV

There are materials from the information agencies and from the press services of the federal authorities of the Russian Federation used in the project.

Edition is 3 thousand copies

Editorial office:
Novy Arbat, 21/1
Moscow, 119019
Tel.: +7-495-690-3108, 778-1447, 7293977

Media postal address:
Moscow, Russia, 123104, mailbox 29

doc@promweekly.ru
promweekly@promweekly.ru
www.promweekly.ru
The materials marked with R published on a commercial basis

CONTENTS

EDITORIAL

Integration with ASEAN

Russian defense cooperation with ASEAN states is developing very actively. Experience in the supply of Russian technology to countries in the different confirms the high quality and reliability of these weapons and military equipment. Today efficiency and reliability are the main criteria. This is especially important given the difficult situation on the world stage. Threat of local conflicts to be evolved into global ones, failure of worldwide system of safety and non-ending crisis — all of this leads to an unstable and dangerous situation. One can predict raise of defense means market in times like this. But together with developing of defense technologies in order to secure people's safety, rivalry among sellers of weapons and defense systems increases in order to achieve such goals as increasing profits and market share.

World experience shows that it is not about how many weapons you have, but quality and possibilities of every single one of them is what leads to victory on the battlefield. Other significant factor is technological independence from seller — modern technologies make it possible to shut down any device from any place of the globe if you have appropriate access. With hi-tech technology, solid after-sales service and proven reliability of products, Russia is honest and friendly partner for many countries, ready for mutual work. At the exhibition LIMA'2017 Russia again represents their best products, prepared for use in Southeast Asian and in the Asia-Pacific region.

Valeriy Stolnikov

SPECIAL TRAINING

A delegation of aeronautical engineers from India have gone to Novosibirsk for a special training, where they are studying the repair of Mi17-1V helicopters, Russian Helicopters said in a press release. The engineers are being trained at the Novosibirsk Aircraft Repair Plant, which is owned by Russian Helicopters. Currently, the plant is carrying out repairs on a batch of five Mi-17-1V helicopters that are owned by India. The repairs are expected to be completed in June 2017. The Novosibirsk Aircraft Repair Plant will repair 30 Indian Mi-17-1V helicopters by mid-2018. India is using a range of Mil Mi-17 helicopters, produced by the company. The country also signed a joint venture agreement on Ka-226T helicopters manufacture with Russia in October 2016. Russian Helicopters, a Rostec holding, is the sole developer and manufacturer of helicopters in Russia, and is also one of just a few companies in the world possessing the ability to design, manufacture, test, and maintain modern civilian and military helicopters. The company is expanding its presence in the rapidly expanding markets of India, China, countries in Central and South America, Western Asia, and Africa.

INTEREST TO SU-35

The United Arab Emirates is interested in possible deliveries of Russia's Su-35 multirole air superiority fighters, the chief executive of Rostec Sergey Chemezov said at the IDEX 2017 exhibition. The Su-35 is a multifunctional 4++ generation fighter. It is made based on Su-27/Su-30 fighters, and the 'thirty fifth' is a conceptually new fighter employing fifth-generation combat avionics. Mr. Chemezov said there had been separate discussions about the potential purchase of Russia's Sukhoi Su-35 fighter jets. As it was already said before, 24 Su-35 fighters were sold to China under the first export contract. According to Mr Chemezov, Russia also plans to develop a fifth generation joint light fighter aircraft with the UAE. Sergey Chemezov said an initial agreement has been signed and work was expected to start on the 'long-term project' as early as next year. Speaking at the International Defence Exhibition (IDEX), he said it was too early to put a value on the project. The creation of the fifth-generation fighter jet is one of the parts of the cooperation agreement with the Emirates in the field of military and industrial cooperation. The aircraft that is set to be developed with the UAE is expected to be a variation of the MiG-29 fighter jet.

Single-Window System

Russian Helicopters, part of State Corporation Rostec, is working to improve services and create a 'single-window system' — a new form of cooperation with foreign customers based on a new after-sales service strategy. A pilot project is currently being implemented in India.

The new format focuses on centralization of all processes related to after-sales services, and is the first step in providing integrated support and transitioning to helicopter service contracts covering their entire life cycle. Russian Helicopters, which designs and manufactures rotorcraft, intends to utilize existing cooperation with other Russian companies taking part in helicopter building to ensure operability throughout the full lifespan of the machines.

'For us, it is important to provide timely and quality service for Russian helicopters in India. As part of the single-window system, the holding company and parts suppliers for Russian-made helicopters will develop a complete structure of services for such helicopters for foreign operators. We will implement these acquired best practices into the global after-sales system of Russian Helicopters,' said Igor Chechikov, Russian Helicopters' Deputy CEO for Aftersales Service, during Aero India 2017 exhibition.

Per Russian Helicopters specialists, the single-window system will increase quality of service to beat foreign competitors. With the implementation of this system, operators will avoid negotiating with hundreds of parts manufacturers as they will have 'the single window' to obtain the entire range of after-sales services for the Russian made helicopters.

The system will not only significantly ease the process of setting up maintenance and repair for operators but will also reduce time to provide such services. In addition, operators will get spare parts and services certified by Russian Helicopters.

Russian Helicopters is currently involved in the process of approving long-term contracts on supply of spare parts and provision of services with operators. The holding company is also testing a method and conditions for cooperation with parts suppliers for the Russian helicopters operated by foreign customers through the 'integrated center for after-sales services'.

Russian Helicopters is one of the global leaders in helicopter production and the only helicopter design and production powerhouse in Russia. Russian Helicopters was founded in 2007 and is headquartered in Moscow. The company comprises five helicopter production facilities, two design bureaus, a spare parts production and repair facility, as well as an aftersale service branch responsible for maintenance and repair in Russia and all over the world. Its helicopters are popular among Russian ministries and state authorities (Ministry of Defence, Ministry of Internal Affairs, Emergency Control Ministry), operators (Gazpromavia, UTair), major Russian corporations. In 2015 its IFRS revenues increased 29.5% to RUB 220.0 billion. Deliveries reached 212 helicopters.

The Alternative to Blu-Ray

A major Russian tech firm has announced the discovery of a new plant-based storage medium which it claims is set to make Blu-ray (and indeed other optical discs) irrelevant. The new technology utilizes principles of photonics to record and store data on a film-like medium.

Rostec notes that its new technology utilizes principles of photonics to record and store data on a film-like medium. The layers comprise of a substance known as chromones (formed in plants), and the resulting storage device beats out Blu-ray in terms of not just capacity but also on the performance front.

Rostec is saying that the potential capacity we're talking about here is up to 1TB — 10GB of data can be stored in a single functional layer — with transfer rates of up to 12Gbps being claimed at this point. At the moment, this is still very much in the early stages of development, with the initial sample having been created, and the tech to be licensed in due course. So there's no news on pricing yet, although the company is saying that the new media will be cost-effective.

As well as the field of storage, Rostec has its hand in many technological pies including telecoms, optics, security systems, robotics and more. So while details are relatively thin on the ground at the moment, this is a development which is clearly worth keeping an eye on.

PRIZE FOR THE QUALITY

The laureate diploma of Russian Federation Prize in the field of quality was awarded with General Director of JSC 'Admiralteiskie Verfi' Alexander Buzakov by Prime-Minister of RF Dmitriy Medvedev at high-profile award ceremony in Government Reception House. Advanced technologies, consistent policy in the field of quality, flexible and efficient management combined with the experience of three centuries, smart human resources management received a high appraisal from the expert committee, which investigated the enterprise in 2016.

The plain evidence of the quality of the enterprise's traditions called the award Alexander Buzakov: 'The vessels of 'Admiralty shipyards' always beginning from the period of Peter I were best known for quality and reliability. Currently our enterprise from the perspective of the experience of past generations introduces high-efficiency quality management methods and constructs reliable, competitive vessels, world marketable products. And we are proud that in the course of 312 years the shipyards' personnel not only retained but also increased the traditions of 'Admiralty Shipyards!'

The expert committee assessed the activity of JSC 'Admiraltieskie Vefi' for compliance with 9 criteria of the Government award model. Modernization of production, high performance work organization and interwork with customers and subcontractors, upgrade of qualification level of personnel, preservation of traditions and experience are the underwriters of high quality products of JSC 'Admiralteiskie Verfi'.

This year the prizes in the field of quality were given to 11 Russian enterprises from various branches for top results in the field of quality of products and services and adaptation of high-performance quality management methods.

Main criteria of the award are significant successes in the field of improvement of effectiveness and labor productivity, realization of recommissioning programs, utilization of advanced equipment, high level of production automation, effective quality control means of products and training of personnel.

KALASHNIKOV DEVELOPS

Kalashnikov will acquire the stake from the Kurganpribor holding, which manufactures a wide variety of civilian and military products. The management of Kurganpribor and the Institute of Applied Physics said that the investment by Kalashnikov into the company would allow both organizations to increase their exposure to the Russian Ministry of Defence, as well as develop new weapons systems. The institute's general director, Alexei Baryshev, said that the company would begin working with Kalashnikov on systems for fast naval boats.Kalashnikov Concern is Russia's largest manufacturer of automatic and sniper weapons, guided artillery shells, and a wide range of civilian products, including hunting rifles, sporting rifles, machines, and tools.

'Made in Russia'

Vnesheconombank and the Roscongress Foundation have agreed on joint information support for the promotion of Russian exports as part of the 'Made in Russia' National Brand project. The corresponding cooperation agreement was signed by Vnesheconombank Chairman Sergey Gorkov and Roscongress Foundation CEO Alexander Stuglev at the Russian Investment Forum in Sochi.

The document envisages the establishment of partnership relations as part of the development of the 'Made in Russia' National Brand concept as well as advertising, marketing, branding and communications support for the export of Russian goods and services. To this end, the parties agreed above all to build an effective communications system, conduct joint specialized events (meetings, sessions, roundtables, conferences, etc.) and to also provide mutual expert and consulting support in order to promote the interests of Russian exporters. 'Made in Russia' is the first communications project for the promotion of exports, business and culture, which includes the international media, the 'Made in Russia' logo and sectoral catalogues.

Laser lighting systems

At the Photonics-2017 exhibition in Moscow Ruselectronics showed laser lighting systems. They can function in corrosive media or under water, and are resistant to radiation. Engineers of Ruselectronics have developed lighting systems based on the use of laser radiation and remote phosphor. They can function in corrosive media or under water, and are resistant to corrosion, radiation, most types of damage, and climate fluctuations.

The systems are designed by Optron, a factory which is located in Moscow and belongs to the holding company, and are based on the self-engineered blue lasers with III-N heterostructures basis (group-III metal nitrides: aluminum, gallium, and indium.) Lighting devices possess high luminous efficiency of up to 100 lm/W, and luminous power of up to 2000 lm.

The use of fiber optics allows to use this product without the risk of fire or explosion. Because of diode lasers, lighting systems are highly efficient and ultra-low-cost. Lights can be used both indoors and outdoors, including dangerous facilities, such as chemical plants, nuclear power stations, and mines.

The 12th International Specialized Exhibition for Laser, Optical and Optoelectronic Technologies Photonics, World of Lasers and Optics is one of Moscow Expocentre's leading innovative projects implemented in cooperation with Laser Association. The trade show is supported by the Russian Ministry of Industry and Trade. This year the latest accomplishments and solutions in photonics are demonstrated by 160 companies from 13 countries: Armenia (first time participation), Austria, Belarus, China, Finland, France, Germany, Japan, Lithuania, Russia, Sweden, Ukraine, USA.

Make in India

India and Russia are going to create a joint venture to make light helicopters in India.

India needs to replace hundreds of ageing utility helicopters deployed along its Himalayan border with China as well as in Jammu and Kashmir region. This means an initial order of 200 Kamov-226 helicopters, of which 140 will be built in India as part of Prime Minister Narendra Modi's drive to build a domestic defence industrial base and cut imports, is expected to be increased.

A team will assess the Indian manufacturing facilities over the next few months. 'We are keeping our fingers crossed about launching production this year,' an executive at Russian Helicopters said. The executive, who did not want to be named, said the joint venture will be modelled along the lines of Brahmos, the India-Russia entity producing supersonic missiles, which which military analysts say are among the deadliest in their class.'

LIGHT FIFTH-GENERATION FIGHTER

The head of Rostec, Sergey Chemezov, told in Abu Dabi that Rostec would partner with the UAE Defense Ministry to develop a light fifth-generation fighter jet based on the MiG-29. Development is slated to begin in 2018, and production should launch seven to eight years after that.

'It takes quite a long period of time to develop,' Chemezov told Defense News in an exclusive interview. 'We anticipate local production here in UAE, for the needs of UAE.'

The announcement comes as Russia is engaging in a region-wide diplomatic and economic press to rebuild old alliances and forge new ones. And after 18 months of aerial operations in Syria, countries that have strong appetites for fighter jets are taking closer looks at what Russia has to offer.

The deal with UAE likely took some in the industry by surprise, says Dr. Theodore Karasik, senior advisor at the Washington-based Gulf State Analytics. Several Western firms have seen high-profile fourth-gen fighter deals with UAE fall through in recent years, but efforts to hash out an agreement have continued.

The Russians have given UAE a good deal, argued Karasik. Under the agreement, Russia is set to provide UAE with fifth-generation fighter technology, produced locally in partnership with UAE defense firms. 'This in itself is completely different than any previous aerospace deals between UAE and the West,' Karasik says. 'Whether it will work is another question.'

Russian defense industry officials have long aspired for a light fifth-generation fighter to complement Sukhoi's heavier T-50. Recently, MiG has reportedly been working on a design. At the unveiling of the 'generation 4+++' MiG-35 multi-role fighter in January, Deputy Prime Minister Dmitry Rogozin again promised the creation of a fifth-generation MiG.

While Russia will be the first to deploy the Sukhoi stealth fighters, India helped finance the fighter's development in exchange for Russian assistance in developing a two-seat version for the Indian air force.

The project has not been without its setbacks. India demanded a 50:50 work split, but with delays and costs mounting, it has dropped that requirement.

The project looked to be on shaky ground, with disagreements over the future of the project delaying the signing of a detailed contract. These issues were apparently resolved during a meeting of Vladimir Putin and Indian Prime Minister Narendra Modi last year. India has agreed to invest $4 billion in the development of the Indian version of the aircraft.

Russia has remained competitive in the fighter market. Over the past five years, aircraft exports have made up around 44 percent of Russia's revenue, according to data compiled by the Stockholm International Peace Research Institute.

Center for Counteracting Cyber Threats

Last year Rostec Corporation has established the Center for Counteracting Cyber Threats. The company's cybersecurity center does not seek publicity, and it has only a modest sign in a quaint little lane in old Moscow, and an open-space office where seemingly ordinary IT specialists sit behind computer monitors. You will not even see an electronic map of Russia on the wall, as you might see in a Hollywood film about cyber defenders.

Around-the-clock the center protects more than 700 Rostec corporate subsidiaries from cyber attacks. Among these are the maker of High-Precision Weapons, the United Instrument Manufacturing Corporation, which produces microelectronics, and Tekhmash Concern, a producer of artillery ammunition.

'We have about 1,000 employees,' said Alexander Evteev, the center's director. 'They're graduates of the best technical universities and are the most experienced Russian programmers from every corner of the country. We constantly exchange information with the Federal Security Service (FSB), as well as collaborate with cybercrimes investigators and antivirus producers.'

The center's security experts see an advantage in simultaneously protecting a large number of companies. They can observe and track events related to information risks, and quickly act to provide protection. Defending a high-tech military company from hacking is different from your average company. Rostec's subsidiaries, for example, use firewalls and intrusion detection systems, which are based on behavioral analysis and search for anomalous activity with special algorithms.

'Most frequently the infection occurs through unwitting employees,' said Evteev. 'For example, an employee receives a phishing letter with interesting content that is practically impossible to distinguish from the real one. It can be a letter containing a statement that the employee was expecting.' A virus that isn't in an antivirus database is often placed directly in a PDF or Word file, said Evteev.

Discovering this type of hack is very difficult, and such espionage can last years. The Rostec center has systems that detect anomalies in the behavior of information systems, and after the discovery is made, the unknown harmful files are sent to a security laboratory, such as Kaspersky, which adds them to its antivirus programs.

The Rostec center must quickly warn state corporations about planned threats and neutralize them. The objective of the cyber security specialist is to make the hacking process for the criminal so complex and expensive that he'll think twice next time before doing it.

Navy's Joint Training Center

In the water area of JSC 'Admiralteiskie verfi' (which is integrated in United Shipbuilding Corporation) were conducted training exercises of the marines of the Navy's Joint Training Center for release of a ship conventionally captured by sea pirates. The training exercises were arranged as a part of scheduled training of the marines for carrying out missions onboard the Navy's ships within anti-terror groups.

In the course of the training, the marine unit practiced the landing elements on a suspicious vessel, checking of its main deck, erections and indoor spaces as well as release of the ship from sea pirates. Besides, during the training the marines drilled the components of anti-terror defenses of a stationing site.

Tugboat 'Vladimir Beltsov' of JSC 'Admiralteiskie verfi' with deadweight over 400 tons and length of 25 meters was designated as the vessel, captured by the pirates. The choice in favor of JSC 'Admiralteiskie verfi' as a ground for carrying out of the exercises was contributed, to a large extent, by availability of up-to-date shipboard personnel and required infrastructure at the enterprise.

'For our part, we did our best to carry out the exercises. The crew of tugboat 'Vladimir Beltsov', headed by Alexander Korolyov, substitute captain's mate, strictly followed the implementation plan pointed out Alexander Medvedev, the main captain of JSC 'Admiralteiskie verfi'. All components, included in the training scenario: attack of the ship by the pirates, seizure and release of hostages, beaching, went within prescribed period and without any lacks of coordinations.'

'The marines, participating in the training exercises, arrived at Joint Training Center of Russian Navy from Pacific, Northern, Baltic Fleets, Black Sea and Caspean Sea Fleets, noted captain Leonid Zinchenko, chief of Joint Training Center of the Navy. The practical knowledge, which acquire participants of similar exercises, let them feel at ease onboard the ships.'

POSITIVE EXAMPLE

Malaysia nowadays is one of the main Russia's trading partners in the South East Asia, Russia in its turn is the leading trading partner of Malaysia in the Europe and CIS region. Relations between our countries are characterized by stability, trust, friendship and mutually beneficial. During a meeting last year in Sochi, President of Russia Vladimir Putin and Prime Minister of Malaysia Najib Razak reiterated the key principles of cooperation and outlined ways for development. Two leaders discussed prospects for the two countries' relations, in particular in the humanitarian sphere, the economy, investment, and military-technical cooperation.

At the meeting in Sochi President of Russia Vladimir Putin said: 'Next year, we will celebrate the 50th anniversary of the establishment of diplomatic relations between our countries. It is a pleasure to see the positive development in our relations, and all the more pleasing to say that we see this development in practically all areas.

As I looked through various reference materials, I saw that 15 percent of all doctors in your country received their training at Russian universities. We are very happy to continue developing our humanitarian ties, as well as our economic and investment ties, and of course, our military-technical cooperation and relations in the military sector too.'

Prime Minister of Malaysia Najib Razak was agreed with these thoughts: 'I do thank you for all of the arrangements you have made, and particularly for the opportunity for us to be here in this beautiful resort of Sochi. I'd like to compliment you for creating this beautiful resort and I'm sure it will be one of the resorts that will be admired around the world.

I think we have come to the stage where we can move our bilateral and multilateral ties to a stronger footing so that we can take advantage of the opportunities both in ASEAN as well as with respect to the developments in Russia. On the economic front, we are quite pleased with the level of trade between our two countries, although in the first two months of this year the figures had a slight drop, understandably given the global economic situation. But we believe that if we can explore with a means to increase — significantly increase — our level of bilateral trade, this will certainly strengthen our bilateral ties.

In this respect, I'd like to suggest that we look into the distinct possibility of embarking on a free trade arrangement between Malaysia and the EAEU in the near future because we see that such an arrangement could lead to a significant increase in our bilateral trade and even investment.

We would also like to consider greater connectivity between our two countries. Tourism is a sector that can promote our bilateral ties, not only business-to-business, but also people-to-people. Given the security concerns in many other places in the world, Malaysia can provide Russian tourists with a safe haven for their holidays abroad, so we would like to see more charter flights into Malaysia and begin exploring direct flights from Kuala Lumpur to Moscow and other parts of Russia.'

In Sochi Vladimir Putin hosted a reception in honor of the heads of delegations taking part in the Russia-ASEAN Summit and held a number of bilateral meetings with the heads of the delegations to the summit. Welcoming the participants, Vladimir Putin said: 'It is a genuine pleasure to welcome the heads of delegations and all guests from the ASEAN countries to Russia, to Sochi, a city renowned for its warmth and hospitality, and a city that has also now become a symbol of the Olympic movement, the essence of

which is to bring people together. This year marks the 20th anniversary of the partnership between Russia and ASEAN. Right from the start, our cooperation was built on the principles of mutual advantage and respect for each other's interests. We also share similar approaches to resolving many of today's problems. This is the first time Russia is hosting a meeting in this format. We view this as confirmation of the ASEAN countries' growing interest in stronger ties with our country.

We have prepared for this summit the Sochi Declaration, which sets out our main task — to take the partnership between Russia and ASEAN to a new, strategic level. This will enable us to make better use of our potential to develop cooperation in the political, economic, cultural and humanitarian fields, and of course, to work together on regional and international security issues.

It is important that both Russia and the ASEAN countries support stronger integration and links between the big economic projects underway in the Asia-Pacific region. Tomorrow, we will discuss the prospects for developing a broad transboundary partnership between the Eurasian Economic Union, ASEAN, and the Shanghai Cooperation Organization.'

The meetings between Vladimir Putin and Najib Razak in Vladivostok and in Beijing, which took place four and two years ago, also were historical for both countries.

In Vladivostok President of Russia said: 'We are developing very kind, good, constructive relations with your nation. Earlier, it was due to the support of your nation specifically that Russia became an observer in the Organization of Islamic Cooperation. Since then, we have been developing constructive relations in all areas, including our economic relations. At overall we have positive trends. I am referring to such areas as cooperation in air and space: with our support, the first Malaysian astronaut went into space. I am also referring to prospects for cooperation in aviation and other areas.'

Prime Minister of Malaysia Najib Razak: 'Once again, congratulations for hosting APEC, and congratulations for your accession to the World Trade Organization. So many congratulations in order. I share with Your Excellency that our bilateral relations are based on very strong footing. They are very constructive relations spanning many years. You rightly said that with your assistance, we put our first man into space, and we have entered into some very important defence procurement with your country. I oversaw those practices when I was defence minister, especially the last one, with the purchase of the Sukhoi Su-30MKM — that equipment is serving us well. But the time has come for us to broaden the relationship and to look into new areas of cooperative relationship with you.'

Two years later, at a meeting in Beijing President of Russia Vladimir Putin said: 'As for our bilateral ties, they continue their development, including in the economy. Our bilateral trade increased 1.5-fold last year, and grew by a further 30 percent over the first nine months of this year. Of course, we always need to discuss the current situation too and look at the prospects ahead.'

'I think we have come to the stage where we can move our bilateral and multilateral ties to a stronger footing so that we can take advantage of the opportunities both in ASEAN as well as with respect to the developments in Russia. On the economic front, we are quite pleased with the level of trade between our two countries, although in the first two months of this year the figures had a slight drop, understandably given the global economic situation. But we believe that if we can explore with a means to increase — significantly increase — our level of bilateral trade, this will certainly strengthen our bilateral ties.'

Najib Razak, Prime Minister of Malaysia

'It is a pleasure to see the positive development in our relations, and all the more pleasing to say that we see this development in practically all areas. As I looked through various reference materials, I saw that 15 percent of all doctors in your country received their training at Russian universities. We are very happy to continue developing our humanitarian ties, as well as our economic and investment ties, and of course, our military-technical cooperation and relations in the military sector too.'

Vladimir Putin, President of Russia

The Russian-Malaysian trade and economic relations are regulated by the Agreement on Economic Cooperation (signed 2000) and Agreement for the Avoidance of Double Taxation (1987) and it were greatly contributed by signing of the protocol on completion of bilateral talks with Malaysia on Russian accession to the WTO (December, 2005). The new trade possibilities arise from signing of the cooperation agreement between Russian and Malaysian Chambers of Commerce in December 2005. The Agreement on Science and Technology Cooperation between Russia and Malaysia was signed in 2003.

Russia's exports to Malaysia is mostly dominated by chemical fertilizers and other chemical products, rolled metals and metal products and less by machines and equipment (mainly spare parts for aircraft equipment). Imports consist of home E&E appliances, palm oil and palm oil products, plastics, cocoa powder and cocoa butter.

Both countries pay attention to promotion of scientific and technical ties. A number of talks were held between ministers of science and technology of Russia and Malaysia on a wide scope of joint projects — in Moscow and in Kuala Lumpur. The first Malaysian micro satellite was orbited by a Russian launcher in September 2000. In December 2006 the satellite 'MEASAT-3' was also launched by a Russian rocket. Under the Russian-Malaysian cooperation project in the space field the launch of the first Malaysian astronaut to the international space station is scheduled in October 2007. Regular contacts have been maintained between Russian and Malaysian specialists in the fields of meteorology, space exploration, Antarctic studies. The latest Russian technologies are presented in Malaysia.

Perspective areas of interaction in the field of modern information and telecommunication technologies were considered during exchange of visits by representatives of the Ministry of Communication and Informatization of Russia and the Ministry of Energy, Communications and Multimedia of Malaysia.

The Minister of Culture, Arts and Tourism of Malaysia paid a visit to Moscow and St.Petersburg. He held negotiations with Russian agencies and tourist operators on the prospects of increasing tourist and cultural exchange.

An important component of bilateral cooperation is represented by the educational ties. Now the Russian institutions of higher education (medical) have about 2500 Malaysian students both on government and private basis. There are prospects of further increase of their number thanks to the official recognition by the Malaysian Side of the Russian diplomas in medicine.

The Russian students are constantly participating in the International Public Speaking Contest — Deputy Prime Minister's Trophy. In March 2007 student of the Asia and Africa Institute of the Moscow State University won the 1st place in the above mentioned contest. /RA&MG/

RUSSIAN-MALAYSIAN COOPERATION

Mikhail Petukhov: 'We are always ready to make a step towards our partners'

Federal Service for Military-Technical Cooperation ('FSMTC of Russia') shall be a decision making authority on import to and export from the Russian Federation of military purpose products as decreed by the President of the Russian Federation, also in the established manner and as authorized by the Russian Federation President, issue of licenses to military-technical cooperation-affiliated entities for import to and export from the Russian Federation of military purpose products. The Russian Federation has a very effective system to manage military-technical cooperation with foreign states. The main element of this system — 'FSMTC of Russia'. Before the LIMA-2017 'Russian Aviation & Military Guide' magazine asked a few questions to the head of the official Russian delegation at LIMA-2017 exhibition, deputy director of 'FSMTC of Russia' Mikhail Petukhov.

— Mr. Petukhov, what types of Russian military equipment are the most familiar in Southeast Asia? In what areas cooperation is most active today?

— As per the volumes of Russian defense products' exports to the Southeast Asian countries aviation is number one. As we all know, Southeast Asia (SEA) has historically been a naval region. Therefore naval equipment is in high demand here as well. We also cooperate in the field of the land forces materiel. Our partners are interested in the newest highly maneuverable land systems and equipment designed on the modular basis.

Our equipment is well-known in the countries of Southeast Asia. And, as far as we know, our partners are quite satisfied with its technical parameters and operational capabilities. We believe that the test of time is the best advertisement one can ever have.

— What main competitive advantages does Russian military equipment have in terms of being used in the region?

— The main competitive advantage of Russian defense equipment is the optimum ratio of price, quality, reliability, easiness of operation and maintenance. Russian defense manufacturers are also ready to offer overhaul and repair on the spot without involving their technicians, which makes repair easier and much cheaper..

Talking of the specific conditions in Southeast Asia related to defense equipment operations one should not forget that the region has extreme climate and landscape. Despite this, our equipment has proved its high capacity, reliability and efficiency in all types of difficult conditions.

— When did the military-technical cooperation between Russia and Southeast Asia start?

— The military-technical cooperation with some of the Southeast Asian countries has a story that totals dozens of years. For example, the military-technical cooperation with the Republic of Indonesia has been successfully developed since 1958. But it is not about the dates. We are happy with the open and constructive mode of cooperation we share with both our traditional and new partners in the region.

The military-technical cooperation with some of the Southeast Asian countries has a story that totals dozens of years. For example, the military-technical cooperation with the Republic of Indonesia has been successfully developed since 1958. But it is not about the dates. We are happy with the open and constructive mode of cooperation we share with both our traditional and new partners in the region.

We believe that the test of time is the best advertisement one can ever have.

— What can the Russian Federation offer to its partners form SEA in terms of modernization of Russian military equipment?

— Initially all exported Russian military products have a huge potential for modernization, and the military equipment supplied to SEA is no exception.

Proceeding from the nomenclature of the materiel previously supplied to the Southeast Asian countries, our customers are, mainly, interested in modernization of aviation and helicopter equipment, as well as air-defense means.

Jointly with our partners we analyze their requirements pertaining to modernization of defense equipment that has been supplied to them earlier. We always try to find a mutually beneficial solution that would cater to their needs. Russian companies are flexible in the issues of repair and modernization, we are always ready to make a step towards our partners.

— What pieces of equipment presented at LIMA-2017 will potentially raise high interest among partners?

— Well, at LIMA-2017 we will showcase a wide range of defense solutions. Certainly, aviation equipment will be of interest to our partners. I primarily mean our fighter jets of the 'Sukhoi' and 'MiG' families as well as Yak-130 aircraft. We hope that partners will show interest in the Russian naval equipment, including project 636 diesel submarines, 'Gepard' patrol ships, missile and patrol boats of various classes. Our experience at previous exhibitions in Southeast Asia show that potential customers display interest in air defense missile systems and complexes and antitank guided missile systems of Russian produce.

— Is Russia ready to consider joint ventures in SEA countries? Is there any existing experience of such kind of cooperation?

— Setting up joint ventures on repair and maintenance of Russian arms and military equipment, as well as building service maintenance centers on the soil of foreign customers is a major backbone of after sale support system for defense products.

Major areas of FSMTC of Russia activities shall be:

- To perform control and supervision functions in the area of military-technical cooperation in compliance with laws of the Russian Federation;
- To participate jointly with other federal government authorities in elaboration of state policy in the area of military-technical cooperation and submit in the established manner relevant proposals to the President of the Russian Federation, the Government of the Russian Federation, and Defense Ministry of the Russian Federation;
- To ensure jointly with other federal government authorities implementation of key state policy guidelines in the area of military-technical cooperation as set by the President of the Russian Federation; and Within its competence and jointly with other federal government authorities, to implement state regulations in the area of military-technical cooperation.

Russia is ready to offer joint venture (JVs) to the countries of Southeast Asia with which we cooperate actively in the military-technical field. Moreover, we already have positive experience of JVs in SEA.

For instance, in Malaysia the service maintenance center for Su-30MKM is put into operation. In the Republic of the Union of Myanmar the project of building a service maintenance center for MiG-29 fighters is well under way. Together with the leading Indonesian industrial enterprises we consider setting up similar centers for helicopters and armor materiel repair and servicing in the country. Whereas in the Socialist Republic of Vietnam we are planning to establish naval servicing centers for submarines and surface ships. Hope all these projects will soon be operational. **/RA&MG/**

In conformity with laws of the Russian Federation, FSMTC of Russia shall perform control and supervision functions relating to:

- Compliance, of activities in the field of military-technical cooperation of federal government authorities, government authorities of the Russian Federation constituencies, and Russian organizations empowered in the established manner to carry out foreign trade activities regarding military purpose products, corporate developers and manufacturers of military purpose products, other legal entities, officials and individuals, with legal acts and regulations of the Russian Federation and key state policy guidelines in the field of military-technical cooperation, requirements of the Russian Federation laws on export control over procurement of military purpose products;
- Implementation of underlying state policy principles in the field of military-technical cooperation including state monopoly;
- Efficient functioning of state regulatory system in the field of military-technical cooperation;
- Fulfillment of international treaties of the Russian Federation in the field of military-technical cooperation;
- Activities in the field of military-technical cooperation of representative offices of military-technical cooperation–affiliated entities in the Russian Federation and foreign states, as well as those of other organizations;
- Marketing, advertising, and exhibition activities in the field of military-technical cooperation;
- Efficient application of funds allocated from the federal budget to finance activities in the field of military-technical cooperation, as well as efficient use of federal property by military-technical cooperation–affiliated entities;
- Level of foreign trade prices for export and import military purpose products with due regard to protection of economic interests of the Russian Federation;
- Level of local prices for military purpose products to be funded out of the federal budget, and supplied to foreign customers under international treaties of the Russian Federation.

WORLD BESTSELLERS

Rosoboronexport introduces a wide range of defense innovations

Being a traditional participant in International Maritime and Aerospace Exhibition taking place in Malaysia Russia shows the best innovations of armament and defense equipment. The Russian display is sponsored by JSC Rosoboronexport (part of the Rostec State Corporation) — the sole Russian state intermediary agency, which is responsible for import/export of the full range of defense and dual-use end products, technologies and services.

Only Rosoboronexport has the right to supply the world market with a full range of arms and military equipment manufactured by Russia's defense industrial complex and approved to be exported. Rosoboronexport accounts for more than 85% of Russia's arms exports. Rosoboronexport is among the major operators in the world market for arms and military equipment. Last year JSC Rosoboronexport marked its 16th anniversary. Rosoboronexport was set up by RF President's Decree as a federal state unitary enterprise tasked to implement the national policy in the area of military-technical cooperation between Russia and foreign countries. Since 1 July 2011 Rosoboronexport has been operating as an open joint stock company. Rosoboronexport operates under the strict supervision of the Russian President, the Russian Government and in full conformity with the UN arms control treaties and the relevant international agreements. Director General of Rosoboronexport — Alexander Mikheev.

Within the frameworks of the integrated Russian exhibit at LIMA-2017 JSC Rosoboronexport introduces more than 270 products made by twenty Russian defense enterprises. The head of JSC Rosoboronexport delegation, marketing department chief of the company Vladimir Ereschenko says: '45% of all deliveries made by Rosoboronexport accrue to Asia-Pacific region. Here

The first Soviet state intermediary agency for military-technical cooperation with foreign countries was created on 8th May 1953 after the USSR Council of Ministers had decided on forming the General Engineering Department within the then Ministry of Domestic and Foreign Trade. Other special foreign trade bodies were created later on to provide for further expansion of military-technical cooperation activities. In the late 1990s there were two federal state unitary enterprises in Russia acting as state arms exporters Rosvoorouzhenie State Corporation and Promexport.

In November 2000 the two enterprises were merged into a single one — Rosoboronexport Federal State Unitary Enterprise, the sole state intermediary for export/import of defence products, by the Presidential Decree No. 1834 dated 4th November 2000 aimed at restructuring the system of military and technical cooperation of the Russian Federation with foreign states, and improving its performance. Since September the 1st, 2014 Rosoboronexport has been operating as a joint stock company.

Among the best products for Asia-pacific region Rosoboronexport experts single out super-maneuverable multifunctional fighter planes Su-35, Su-30MKM and Su-30MKI, combat helicopters Mi-28NE and Ka-52, unmanned flying vehicle systems Orlan-10E and Takhion. Besides, there is an expected attention to be paid to frigates 22356 and 11356, corvettes 20382, patrol ships 11661 Gepard 5.1 and 22160, patrol boats 12150 Mangust and14310 Mirazh, as well as such armament systems for the region's naval ships as 30-mm automatic artillery mount AK-630M, lightweight artillery mount AK-306, and remote weapon station Rumb.

Rosoboronexport expresses its full confidence in success of Russian enterprises at LIMA-2017.

The official status of the exclusive state intermediary agency gives Rosoboronexport unique opportunities to expand long-term mutually beneficial cooperation with foreign partners, provide guaranteed state support of all export-import operations, and strengthen Russia's leadership in the world arms market.

The main result of biography of Rosoboronexport, despite the difficult economic conditions and fierce, often unfair, competition in the global arms market, that company have managed not only to carry its sales, but also significantly enlarge its footprint in the traditional and new arms markets. Through integrated marketing strategies, company have ensured that order book today exceeds US$ 46 billion.

The special exporter makes painstaking efforts on a daily basis to increase Russian arms exports resulting in more than a thousand contract documents signed with foreign customers every year. Over the period of its operation in the international market, Rosoboronexport has delivered hundreds of thousands of units of military equipment and weapons worth more than US$ 120 billion to 115 countries.

Rosoboronexport pays great attention to both major billion dollar contracts and small deals. The company seeks to operate flexibly and efficiently by using modern and advanced marketing and customer settlement methods. The special exporter cooperates with more than 700 Russian defense-industrial enterprises and organizations, which enables it to offer partner countries the comprehensive and cost-effective solutions for strengthening their defense capability and national security.

By concluding export contracts, Rosoboronexport supports the Russian defense industry, which is especially important under difficult conditions in the global market. High-tech products are in increased demand in the world arms market today and thus the company is interested in developing smart manufacturing in Russia.

In addition, Rosoboronexport is actively involved in a number of charitable and sponsorship projects. The company provides assistance to military hospitals, military historical museums, and children's educational institutions. Rosoboronexport supports major sporting events and various sports federations, acts as we are engaged in military and technical cooperation with our traditional partners and develop new military markets including those dedicated to air force and navy. Many aviation and naval products as well as unmanned flying vehicles shown in Langkawi had been battle-tested during anti-terrorist operation in Syria. The company now sees the intense interest taken by foreign clients in these products'.

Core areas of activities of Rosoboronexport

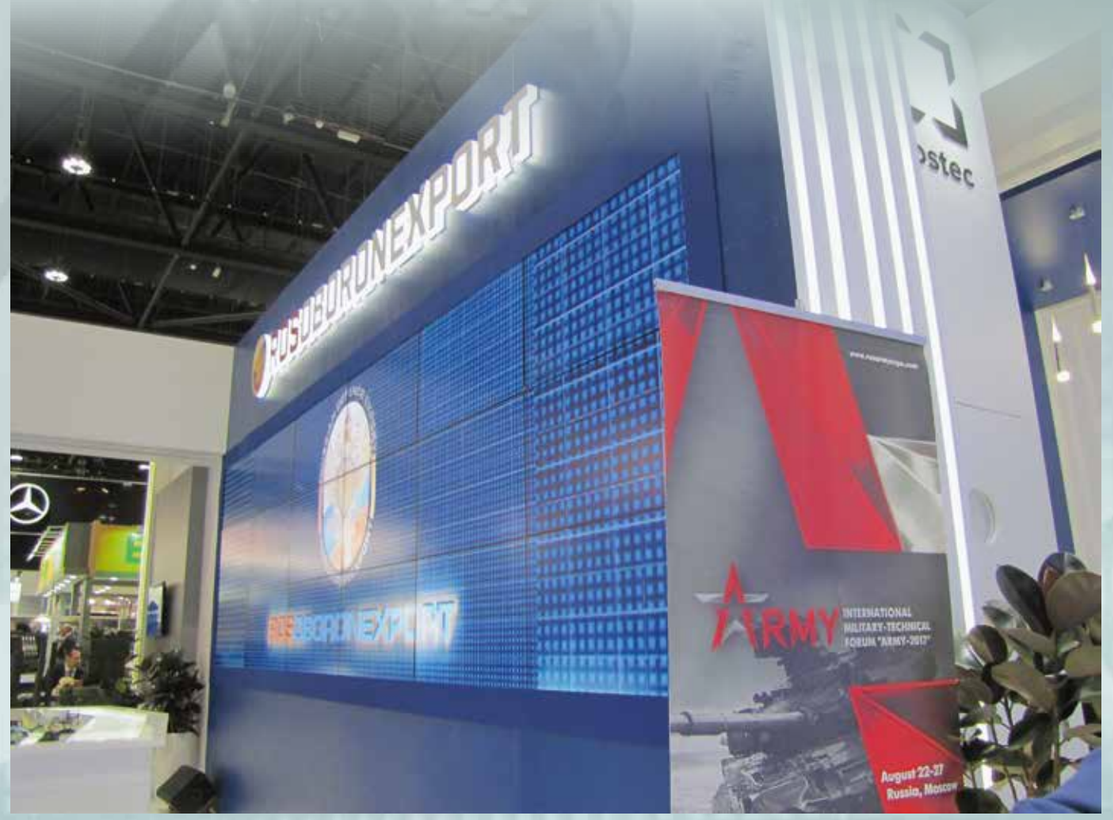
- Export / import of all types of conventional weapons, military and dual-use equipment and services.
- Organization of licensed production of armaments and military equipment abroad, joint R&D efforts with foreign partners.
- Maintenance and repair of earlier supplied weaponry and military equipment.
- Modernization of Russian-made weapons and military equipment.
- Training foreign specialists in Russia and customer countries in the operation and maintenance of supplied military equipment.

sponsor and partner of the largest industrial exhibitions and cultural events held in Russia and abroad.

Rosoboronexport pursues a marketing strategy targeted to expand the geography, range and volume of export deliveries. A number of special programs and projects for exporting products to specific countries have been developed based on a comprehensive analysis of the arms markets and foreign partners' needs. Rosoboronexport seeks to operate flexibly and efficiently in the market, using modern and advanced marketing and customers' settlement methods.

Foreign customers are offered package solutions for national systems intended to defend land, air and seaside borders, which feature the optimal trade-off between cost and performance. These solutions may include both the supply of military products and services and organization of licensed production in customer countries, the setting-up of joint ventures to manufacture and maintain equipment, as well as joint R&D efforts. Rosoboronexport widely uses the optimal offset programs. With regard to foreign customers' interests and the opportunities of the Russian defense industrial complex to increase its exports, Rosoboronexport pays much attention both to major billion-dollar contracts and small deals worth the hundreds of thousands to several millions of dollars. **/RA&MG/**

Foto: Pavel Gerasimov, Valeriy Stolnikov



HIGH-PRECISION WEAPONS

NUDELMAN PRECISION ENGINEERING DESIGN BUREAU

PALMA

AIR DEFENSE MISSILE & GUN SYSTEM

HIGH PRECISION WEAPONS FROM RUSSIA

Special innovative solutions for a wide range of defence tasks

This year at IDEX-2017 Russian holding company High-Precision Weapons as always shows the best of the best in its class examples of the innovative systems. This holding is a leader not only the Russian military-industrial complex, it is one of the leading developers of the most advanced combat systems in the world. Not a coincidence that at all exhibitions where the company participates, its exposition has become one of the most popular.

The High-Precision Weapons Holding (a part of the Rostec State Corporation) was founded in 2009. The holding consists of a number of largest leading defense enterprises that are well known on the world arms market. It is sufficient only to mention such brands as the JSC 'Shipunov KBP Instrument Design Bureau', the 'Tula Arms Plant', 'Tulatochmash', the 'Tactical Missiles Corporation', the 'Nudelman Precision Engineering Design Bureau', the 'Kovrov Electromechanical Plant', the 'V.A. Degtyaryov Plant', the 'All-Russian Scientific Research Institute 'Signal', and others. As of today, there are 19 companies joined in the holding. Most of them are national and international leaders in their segments.

are Russian ones. Their income has increased by a total of 48.4%.' It also can be noted that the High-Precision Weapons Holding belongs to the top 10 world's defensive rankings by an overall production and supply increase rate.

There is no doubt that the main task of the High-Precision Weapons Holding is to strengthen the defense capability of Russia and to supply the Russian Army with the most modern and the most reliable high-precision weapons. Within the scope of the contract, the holding regularly transmits to the Russian

High-Precision Weapons Holding plays an increasingly important role on the world arms market. The holding is the Russian largest developer and manufacturer of the most modern and innovative high-precision weapons. The importance and potential of the Russian holding increase worldwide as well: On a scale of the top 100 weapons manufacturers in the world, the Stockholm International Peace Research Institute (SIPRI) rates the High-Precision Weapons Holding from Russia at 39.

Such a success (the holding did not belong to the world's top 100 weapons manufacturers before) can be explained by increasing deliveries both to the Armed Forces of the Russian Federation and to the foreign market. According to an SIPRI expert, 'the Russian companies ride the ground-swell of boosts in military spending and arms export. Eleven companies from the top 100 list

High-Precision Weapons Holding plays an increasingly important role on the world arms market. The holding is the Russian largest developer and manufacturer of the most modern and innovative high-precision weapons. The importance and potential of the Russian holding increase worldwide as well: On a scale of the top 100 weapons manufacturers in the world, the Stockholm International Peace Research Institute (SIPRI) rates the High-Precision Weapons Holding from Russia at 39.

Ministry of Defense the corresponding quantity of planned weapons. There are 'Iskander-M', 'Pantsir-S', 'Verba', 'Shturm-SM' and other systems among the most critical supplies. Due to the holding, the Russian Army is armed with the best weapons in the world.

Holding is existing export contracts and the conclusion new is being conducted almost constantly. There is every reason to believe that results of 2017 will surpass last year's figures, when the High-Precision Weapons recorded the high efficiency of their foreign economic activities.

The products of the holding's companies are well known on all continents and much sought after on international arms markets. Interest in the products of the 'High-Precision Weapons Holding' grows due to the objective situation. The exports of the holding are based on warfare systems well known on the international market such as 'Pantsir-S1', 'Palma', 'Kornet-E', 'Konkurs', 'Metis-M1', 'Igla-S', 'Arkan', 'Verba', 'Shmel', 'Kapustnik' and others as well as on training systems, armored vehicles upgrade, and so on.

The holding's products are well known and much sought after on the markets in the Middle East, the Gulf, Northern Africa, Latin America, India, Central and Southern Africa. The holding is constantly expanding the geography of its exports. This is due to product line extension, development of new models and upgrade of products in demand as well as well thought-out service policy.

The holding invests much into the development of promising designs of weapons and military equipment, enhances and augments its development and production potential, and invests in the development of models of tomorrow.

In 2016, the High-Precision Weapons holding toped the planned revenue value by more than one milliard US dollars. The holding is gradually taking a more important position in the global arms market. A considerable amount of holding's production enterprises supplies is carried out serving the interests of many regions. Moreover, the arms produced by the holding constitute the basis of high precision weapon park of many countries. The High-Precision Weapons holding is the biggest developer and producer of the top-notch high precision weapons in Russia.

It is evident that the demand for high-precision weapons only increases around the world. They do not miss. They are mobile, fast, maintenance-friendly, reliable, and the most modern. The newest technological solutions are used. 20 years ago, the proportion of high-precision weapons used in local conflicts amounted to up to 7%. In recent years, this share has increased by up to 90-95%. The most designs of the High-Precision Weapons Holding are the best in the world and determine the technological vectors of development in their segments.

In 2016, the High-Precision Weapons holding toped the planned revenue value by more than one milliard US dollars. The holding is gradually taking a more important position in the global arms market. A considerable amount of holding's production enterprises supplies is carried out serving the interests of many regions. Moreover, the arms produced by the holding constitute the basis of high precision weapon park of many countries. The High-Precision Weapons holding is the

biggest developer and producer of the top-notch high precision weapons in Russia.

High Precision Weapons the leading Russian designer and manufacturer of wide variety state-of-the-art military and special equipment, including but not limited to land systems, small arms, air close and short range defense systems, is now opening new business opportunities for partners. Moscow-based and ranked among top 50 global producers of military equipment by SIPRI chart, JSC 'High Precision Weapons' is legally authorized since November 2016 to provide full spectrum of maintenance and overhaul, modernization and upgrade works and services worldwide.

Experts in the global arms market confident that interest in high-precision weapons in the world will only grow. Therefore, the demand for the products of the leading Russian holding will also grow from year to year. **/RA&MG/**

Foto: Pavel Gerasimov, Valeriy Stolnikov

High Precision Weapons the leading Russian designer and manufacturer of wide variety state-of-the-art military and special equipment, including but not limited to land systems, small arms, air close and short range defense systems, is now opening new business opportunities for partners. Moscow-based and ranked among top 50 global producers of military equipment by SIPRI chart, JSC 'High Precision Weapons' is legally authorized since November 2016 to provide full spectrum of maintenance and overhaul, modernization and upgrade works and services worldwide.

RUSSIAN AIRCRAFT INDUSTRY OUTLOOK

United Aircraft Corporation increases share of its civil products

In early March the first meeting of the Aviation Collegium under the Government of the Russian Federation was held in Moscow. The Collegium is focused on overall coordination of efforts of government authorities and manufacturers to develop the Russian aircraft industry. Speaking at the meeting, Yuri Slyusar, President of the United Aircraft Corporation confirmed that Russia will be developing and manufacturing both military and civil aircraft. Meanwhile the share of its civil segment is to grow at an outperforming rate. Bringing to market new advanced civil aircraft along with traditionally successful combat airframes will make UAC a much bigger player in possession of wide range of innovative aviation products. Besides, according to Yuri Slyusar, now UAC is establishing a global after-sales maintenance system dedicated to servicing Russian civil aircraft.

UAC PORTRAIT

The United Aircraft Corporation of Russia (UAC), which under one company represents the most well-known Russian aviation brands such as Sukhoi, MiG, Tupolev, Yakovlev, Beriev and others, is today among the world's biggest manufacturers and suppliers of aircraft. In December 2016 as part of an effort to expand foreign presence UAC was given a military-dedicated foreign trade license that allows to directly render services to foreign customers. The military-dedicated foreign trade license has been issued by Federal Service for Military and Technical cooperation. This will help UAC improve maintenance and repairs of equipment previously delivered abroad, which includes all previously supplied Su, MiG, Il, Yak and Tu aircraft.

Due to the success of its products UAC's revenues have been lately growing on average more than 20% per year. Sukhoi Superjet 100 civil airliners, Su-30 and MiG-29 fighters, Yak-130 operational trainers are among the most popular aircraft exported by UAC.

The document received by UAC is to much more simplify foreign market procedures, which is good news for present-day and future UAC's partners worldwide.

Alongside with the right for direct maintenance and repairs of the equipment previously delivered abroad, the document also specifies UAC's capabilities to update such equipment and train foreign personnel to maintain and repair UAC products. Besides, the license authorizes UAC to establish joint ventures abroad which can maintain and repair aircraft.

The license enables UAC to proceed to coordinated efforts in this area, develop a single enterprise after-sale service system based on current experience and ensure the most efficient activities at markets with several brands available.

The new capabilities confirm there is a steadily growing demand for UAC aircraft. Moreover, operational reliability and competitive prices become increasingly significant. In this regard there is a reasonable increase of export of Russian aircraft having better reliability, up-to-dateness and well-balanced prices both for airplanes and further maintenance. According to experts, it is Russian aircraft which in terms of life-cycle cost appear today as the most attractive in international markets.

UAC products include many aircraft which are proven international bestsellers. Thus, Su fighters exported by Russia number in the hundreds making these fighters come second and first worldwide. In 2011-2014s Su planes were the first in amount: in four years customers have received 139 aircraft, while Lockheed Martin delivered only 89 and Boeing delivered 60 planes.

UAC places big stakes on supplying fighter planes given that many countries plan to have their fighter fleets upgraded. Among the most world popular planes is the Yak-130 operational trainer which has been already delivered and is being delivered to a number of countries. This is a top-class aircraft. It can be upgraded as a light fighter or close support plane which is highly demanded by air forces in the world.

However, Russian aviation export is notable not only for military aircraft. In recent years good results have been shown by the civil segment for which UAC has been making big plans. Among Russian civil aircraft the new generation Sukhoi Superjet 100 regional aircraft is the most popular at foreign markets. The aircraft combines new aircraft engineering technologies, passenger comfort, significant economic advantages for airlines and proper environmental specifications.

The key advantage of the Sukhoi Superjet 100 is lower operational costs as compared to its competitors. Operational costs are minimized due to higher fuel efficiency and lower take-off weight. According independent data, its ownership cost is averagely 15-20% lower than the other similar class aircraft. The highly competitive lease rate supported by a state guarantee of residual value is also worth being taken into account.

The SSJ100, capable of carrying up to 98 passengers, is the first in its class aircraft featuring five-across seating, with big 32-inch seat pitch. Thanks to a combination of wider seats and higher cabin (over 2 meters) SSJ100 has more cabin space and bigger stowage bin capacity than such of competitors. The airplane has been built with the use of the latest design procedures and technologies by leading international manufacturers such as Snecma, Thales, Goodrich and Honeywell. One of the versions of the interior has been designed by Italian office Pininfarina. In February 2012 the aircraft was certified by the European Aviation Safety Agency (EASA).

At the same time UAC is working on creating a 150-210-seat MS-21 narrow-body aircraft family. Estimated volume of production is up to 72 aircraft per year. Today the backlog for these aircraft is 175 orders. There is also interest towards the future aircraft in foreign markets.

'We should sell internationally hundreds of aircraft. This is our goal in the civil segment', emphasized Yuri Slyusar.

RUSSIA AND MALAYSIA

Aviation relations between Russia and Malaysia have quite deep and multi-faceted history. It is enough to mention that in 2007 Russia supported the space flight of the first Malaysian cosmonaut Sheikh Muszaphar. In October 10, 2007 as a crew member aboard Soyuz TMA-11 spacecraft he went to the international space station and spent 11 days in space, which were so fateful for Malaysia.

Besides, let us recall that as early as in 1996 Malaysia purchased 18 MiG-29 fighter planes from Russia. Not later than seven years after the countries signed a contract under which Russia was to deliver to Royal Malaysian Royal Air Force 18 Su-30MKM planes totaling to about $900 million. Noteworthy is that the contract was signed while Russian President Vladimir Putin was visiting Kuala Lumpur.

In addition to just production and delivery under Su-30MKM deal Russia undertook training of pilots and maintenance personnel of the Royal Malaysian Air Force, which was conducted in Malaysia, to operate

UAC has released an up-to-date forecast for civil aviation market development within the next 20 years. According to the forecast the volume of world air transport service will keep growing and annual growth rate account for 4.6% per year.

The leaders of the current growth rating are still the USA and China which have large domestic air transport market as well as UAE, UK and Germany whose airlines carry out the majority of international air transportation. Russia remains the country with high technology aviation and has the 7th rating position in terms of air transport service as of 2015 and growth of domestic passenger traffic is stable. Russian airlines have been adapting to changing economic conditions and finding mechanisms to optimize their activities.

All this helps us look to the future with cautious optimism and suppose that by 2020 the volume of Russian air transportation will have reached its pre-crisis level. Annual growth rate of national passenger traffic within the next 20 years is to be close to international rate and equal to 4.4%.

An important factor affecting on air transport service market is the reduction of oil prices. Within the period of

those latest fighter planes. Besides, the contract covered the delivery of armament and inventory required for the planes.

Su-30MKM has been modified to suit Malaysian specific requests and character of operations and climate. The plane has been based on well-known Su-30MKI used by the Indian Air Force since 2002. Chief Designer Alexander Barkovsky believes that 'Su-30MKM is another step in the development of the Su-30 platform'. The Malaysian version has a number of distinctive features mostly related to avionics.

The ceremonial delivery of the first two serial Su-30MKM held in Irkutsk was attended by a substantial Malaysian delegation headed by Malaysian Royal Air Force commander-in-chief General Azizan Bin Ariffin. The first Su-30MKM were delivered to Malaysian Air Force airbase Gong Kedak in Kelantan. The ceremonial induction into service of Su-30MKM was held at the Subang airfield near Kuala Lumpur and was attended by Malaysian Vice Prime Minister and Defense Minister Najib Abdul Razak and Head of the Army General Paduk Abdul Aziz Zainal. So far all 18 Su-30MKM have been delivered. The aircraft are well regarded by Malaysian pilots.

There is also cooperation between our countries in civil aviation with quite a number of good examples. Thus, Malaysia takes an active interest in Russian medium haul MS-21 aircraft. The aircraft was unveiled last year. The dedicated works are being carried out as scheduled. The first flight is expected soon.

Malaysia is also familiar with unique Russian amphibian airplanes considered to be the most efficient in firefighting. In October 2015 two multi-purpose amphibious Be-200ChS aircraft were involved in fighting large forest fires in Kalimantan and Sumatra islands. The fires caused much smoke in Indonesia, Malaysia, Singapore, Thailand and Philippines.

Much attention in the Asia-Pacific region is also paid to the new Russian passenger Sukhoi Superjet 100 aircraft.

INCREASING VOLUME OF SSJ100

According to UAC President Yuri Slyusar the Corporation has stable rate of mass production of the Sukhoi Superjet 100. There are plans to deliver not less than 30 aircraft every year to customers. Today about one hundred SSJ100s are being operated including those in a number of world regions, from South America to Southeast Asia.

Currently with available manufacturing capabilities UAC enterprises are capable of producing up to sixty Sukhoi Superjet 100 per year. The Russian aircraft sparkles profound interest in Southeast Asia and Latin America. Experts confirm that in the context of 70-100-seaters this aircraft is becoming the most attractive for many international airlines. When interviewed Yuri Slyusar says UAC is intended to focus on further development of the Sukhoi Superjet 100 aircraft family to offer customers a range of regional planes.

It is worth noting that today a business jet version of the SSJ100s is also available. As a result of a number of upgrades, including auxiliary fuel tanks installation and other engineering solutions the range of the business version of the SSJ100 is increased to about 8,000km-long nonstop flight.

By the way, last year two VIP versions of the Sukhoi SuperJet aircraft were delivered to the Royal Air Force of Thailand. The business version aircraft (Sukhoi Business Jet (SBJ)) are designed to carry country leaders and defense establishment of Thailand. The delivered SBJs are the first business jets of the company purchased by an Asia Pacific customer.

/RA&MG/

WORLD PREMIERE OF MIG-35

World premiere of the MiG-35 state-of-the art multirole aviation complex was held in Lukhovitsy, Moscow region January 27, 2017 in the production venue of the Russian Aircraft Corporation 'MiG'(a UAC subsidiary).

The event was attended by more than 30 delegations from foreign countries, such as India, Peru, China, Vietnam, and other countries of Latin America, Middle East, Middle Asia, Europe and the CIS. Deputy Prime Minister of the Russian Federation Dmitry Rogozin, Commander-in-Chief of the Air and Space Forces of the Russian Federation, Col.Gen. Victor N. Bondarev and representatives of Rosoboronexport and Federal Service for Military and technical cooperation also took part in the ceremony. The state-of the art MiG-35 fighter was presented to the general audience by Mr. YurySlyusar, UAC President; Sergey Korotkov, UAC General Designer, Vice President for Innovations; and Ilya Tarasenko, RAC 'MiG' Director General.

Addressing the audience Deputy Prime Minister Rogozin said: 'That's the first presentation of a combat aircraft in 2017, up ahead on the agenda is a presentation and the maiden flight of the narrow body passenger MC-21 airliner, in summer we plan the maiden flight of the IL-112 light military transport aircraft. That proves that the potential of combat aviation and the designers of Russian aircraft companies is capable of making high quality competitive aircraft. Russia is a great aviation state and today we 've got a serious proof of this fact'.

In his address towards the aircraft industry workers Commander-in-Chief of the Russian Air and Space Forces gave a high appraisal to the new fighter and confirmed the aircraft prospects in the Army: 'Many thanks for such an excellent creation that proved once again that nowhere in the world there are better aircraft than in Russia. This multirole fighter is capable to attack ground, sea surface and air targets and perform aerial maneuvering combat. I feel proud to say that we shall be pleased to take the aircraft — we need them'.

Commander-in-Chief of the Russian Air and Space Forces expressed his deep gratitude to the staff of the UAC and MiG Corporation for such an excellent aircraft. 'Within some time we shall replace all light fighter aircraft with this type., — concluded the Commander-in-Chief.

'Aircraft capable of resolving so many tasks — is the most modern perfect aircraft, crowning the MiG aircraft family. Designed on the proven and tested platform it'll be in demand in both national and foreign Air Forces. It seems to me that this

'This aircraft also has strong export potential, I mean, over 30 countries actively operate another aircraft — the MiG-29, and a solid infrastructure was set up in these countries to support this fighter, and there are trained specialists there. It is feasible that the industry and everything linked with operating the aircraft — all should be ready to offer our potential partners maximum required services in the modern world to support this equipment'…

Vladimir Putin

project has a bright future, so I would like to wish success to it and all of us', said YurySlyusar, UAC President, in his remarks opening the presentation of the new fighter.

Both Russian and foreign guests could watch the MiG-35 flight within the framework of the flight test programme after the presentation. Chief pilot MichailBelyaev and test pilot Stanislav Gorbunov demonstrated flight capabilities of the new fighter.

After the test flight Dmitry Rogozin informed media that in the beginning of spring a military-industrial conference will be held in India, where supplies, repair and maintenance of the Russian weapons, as well as establishing of joint ventures within the framework of 'Make in India' concept would be discussed. The Russian party should be ready to offer the new fighter MiG-35 to India, pointed out D. Rogozin.

It is interesting, that one day before prezentation there was a video conference with report to the President of Russian Federation on the beginning of the flight tests of the new multirole MiG-35 fighter aircraft. Vladimir Putin congratulated designers, engineers, workers and pilots who took part in the process of aircraft production and testing on this important occasion.

'I do expect that our army shall be considerably enhanced by this aircraft — I mean our Defence and Space Forces. But this aircraft also has strong export potential, I mean, over 30 countries actively operate another aircraft — the MiG-29, and a solid infrastructure was set up in these countries to support this fighter, and there are trained specialists there. It is feasible that the industry and everything linked with operating the aircraft — all should be ready to offer our potential partners maximum required services in the modern world to support this equipment', — said Vladimir Putin.

Russian Federation Deputy Prime Minister Dmitry Rogozin, RF Trade and Industry Minister Denis Manturov and RF Minister of Defence Sergey Shoigu also watched the demonstration test flight. The new aircraft was presented to the Head of State by the PJSC UAC President Mr. YurySlyusar, UAC General Designer-Vice President for Innovations Mr. Sergey Korotkov and RAC MiG Chief test pilot Michael Belyaev, who took the aircraft to the air at the production site of the RAC 'MiG' in Lukhovitsy (Moscow region).

YurySlyusar reported to the President of Russian Federation that the new MiG-35 fighter was designed specially to perform combat activities in areas of high intensity conflicts, in high density air defences. Strong performance is achieved due to new defence suite, new opto-location station and reduced radar cross section signature.

that production of a commercial aircraft has been planned in the RAC 'MiG' production sites. This aircraft will be flying on domestic routes.

UAC President informed that here, in Lukhovitsy, on the basis of the RAC 'MiG' production site the IL-114-300 regional turboprop aircraft assembly is being set up. 'Decisions that were taken during the meeting in your office half a year ago are being implemented, the budgeting provided to the PJSC UAC has been distributed between the companies-executors (RAC 'MiG' and 'Ilyushin'). Along with that the design bureau is preparing the documentation to be handed over to the plant. The same facility that will be used for MiG-35 assembly will be used to make 12 IL-114 per year. This will allow us to harmonize the Corporation's product portfolio and fulfill our strategic targets — to increase the share of commercial aircraft in our revenues up to 45 per cent by 2025', said Mr. Slyusar in conclusion. /RA&MG/

> ***'Aircraft capable of resolving so many tasks — is the most modern perfect aircraft, crowning the MiG aircraft family. Designed on the proven and tested platform it'll be in demand in both national and foreign Air Forces. It seems to me that this project has a bright future, so I would like to wish success to it and all of us'…***
>
> ***Yury Slyusar***

Test pilot Michael Belyaev reported that the flight was performed to demonstrate MiG-35 stability, controllability and maneuverability features. All the systems worked normally, crew positively evaluated aircraft.

In his turn UAC General Designer Mr Sergey Korotkov underlined that the RAC 'MiG' was able to design a new multifunctional system integrated with armaments and installed on board MiG-35 aircraft. Together with other systems a 4++ generation complex was designed. MrKorotkov also expressed hope for a future contract with the MoD of the Russian Federation, and high interest of foreign customers.

In the course of a video conference Vladimir Putin also pointed out

Mikhail Andreev

AGAINST ANY TANKS

The best in the world Kornet-EM multipurpose missile system

As of today the IIIrd generation Kornet-E portable/transportable laser beam-rider system developed by KBP and adopted in 1998 is the weapon de-finitively complying with the concept of advanced ATGW, being state-of-the-art specimen of multipurpose tactical short range weapon system allowing en-gagement of virtually any small-size target within the system's line of sight. Aiming for further enhancement of Kornet-E ATGW combat capabilities, KBP Instrument Design Bureau developed a new multipurpose missile system — Kornet-EM.

Antitank guided missile systems (ATGM) have been developed and pro-duced globally for already half a century. Since then they became the most popu-lar and wanted type of high precision weapons (HPW) thanks to their usability and relatively low cost. A future ATGM system must be a versatile defensive-offensive guided weapon, whose portable and combat vehicle transportable mod-ifications ensure a wide range of applications in close range tactical zone in vari-ous combat environments.

The weapon is designed as an automatic combat system, incorporating, be-sides the firing unit itself, both reconnaissance and control assets, and ensuring full automation of all combat operation constituents — target detection and distri-bution, issuing and processing of target designation, missiles' guidance. The operator's task within such system is limited to supervision of its proper function-ing and launch of missiles.

The open architecture of the system in terms of data exchange with higher-rank and peer units along with its combat capabilities makes it a vital element of Army network-centric system.

Kornet-EM multipurpose missile system provides for engagement of mod-ern and future tanks, various fortifications (pillboxes, bunkers) and low-velocity aerial targets (helicopters, assault aircrafts and UAVs) in day&night and adverse weather conditions under enemy ECM and optical jamming at ranges up to 8-10 km.

The Kornet-EM system comprises:

• combat vehicle with two automatic launchers and operator's panel with a display;

• battery commander's reconnaissance and control vehicle, equipped with combined surveillance system including TV, IR and radar reconnaissance aids, navigation, communication and data exchange systems, automated control suite and weapon system (Kornet-EM ATGM and PKTM machine-gun),

• guided missile with HE warhead with impact and proximity fuses and firing range of up to 10 km;

• an antitank guided missile with a maximum firing range of 8000 m and shaped charge warhead armour penetration of 1100-1300 mm which enables the Kornet-EM system to engage modern and future tanks bearing in mind the ten-dency to growth of their armour protection.

Due to implementation of state-of-the-art but, however, low cost technical solutions, Kornet-EM acquired a number of new features, allowing significant broadening of its combat capabilities to counter both conventional ground tar-gets, as well as non inherent to this class of systems ability to engage lowe-velocity aerial targets:

• the use of computer vision along with automatic target tracker makes it possible to exclude an operator from missile guidance process and in fact imple-ments the 'fire-and-forget' principle, thus giving a 5-times increase in accuracy of target tracking during real combat.

• engagement of targets in automatic mode reduces psychophysical stress to operators, requirements to their skills and duration of their training.

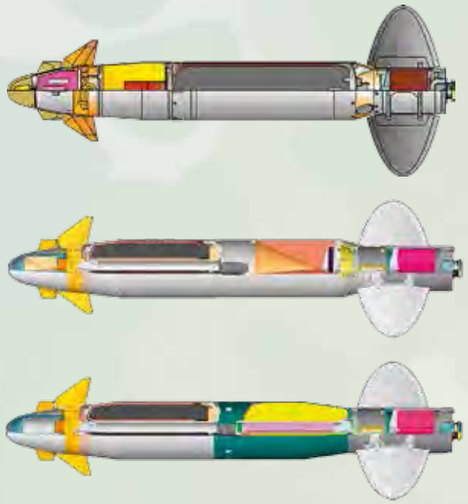
• automation of guidance process along with automated target detection and distribution, target designation commands generation and processing result in virtually fully automatic combat system, limiting the operator's task to super-vision of its proper functioning and launch of missiles.

• combat vehicle with twin-launcher ensures simultaneous salvo firing at two targets, thus significantly increasing the system's firing rate and number of targets handled and at the same time allowing two-fold reduction of combat as-sets required to complete a mission. Such performance specifications endow Kornet-EM with the highest target handling capability among similar existing and future systems — min. 3-4 targets per minute at ranges up to 5 km. Thus, in case the weapon systems are positioned at a stand-off range from enemy tanks (more than 4 km) a single Kornet-EM battery of 9 combat vehicles is able to repulse an attack (i.e. destroy min. 50% of targets) of enemy tank (M1A2 class) battalion (58 tanks). Actually, such mission may be accomplished by two battery salvos, destroying 32-34 tanks, i.e. 55-60% of the battalion. The time required to accom-plish the mission will not exceed 1 minute, allowing to avoid casualties, since the enemy tanks will not be able to to reach their effective firing distance.

• new capability for ATGW — effective engagement of small-size aerial tar-gets — reconnaissance and reconnaissance-attack unmanned aerial vehicles being the enemy's crucial and mass combat support tool,

Main Performance Specifications

Flight range	150 — 8000
Armour penetration, mm	1100 — 1300
Maximum flight speed, m/s	300
Weight with launch-tube, kg	31
Length of launch-tube, mm	1210



as well as helicopters and as-sault aircrafts.

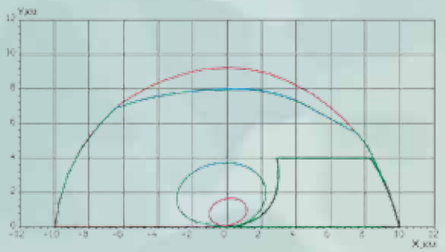
UAV on a reconnaissance mission lets enemy well in advance disclose de-fence, give accurate target designation for firing over-the-horizon munitions, rec-ord and transmit information on army relocations both during operations near the line of contact with enemy and in the rear. This results in significant increase in casualties and possible failures of combat mission performance. From the point of view of engagement, UAVs are difficult targets due to low altitude of flight. Moreover, in case of mass application they are a teaser for the air defence assets, causing high consumption of expensive surface-to-air missiles.

Attack helicopters and tactical aircrafts are by now the highest threat for land forces, as they can inflict maximum damage in minimum time. For example, a helicopter is able to destroy a company of armoured vehicles (10-14 armoured vehicles) with one ATGM load.

To efficiently counter the UAVs, attack helicopters and tactical aircrafts the air defence assets should be available right in the combat formations, because at-tack or reconnaissance flights are performed at low altitudes, impeding due-time detection with medium and short range air defence systems which are usually sta-tioned deep in the home front. Kornet-EM is the system able to efficiently ac-complish low-velocity aerial threats repulsion tasks.

Another distinctive feature of modern combat operations is deployment of sophisticated surveillance and networking technologies in the tactical units. Wide application of integrated surveillance aids (various combinations of optical, radar, TV and IR systems), sophisticated automatic assets of tactical units opera-tion control, communication and navigation allows continuous monitoring of the battlefield, real-time reception of reconnaissance data (both from peer and higher level units) overlaid on the digital maps and automatic or semiautomatic genera-tion and transmission of target&firing data to the fire units, thus, determining the efficiency of high-precision tactical weapons and ATGW employment.

Availability of surveillance systems providing detection of wide range of targets and automatic bat-



Main Performance Specifications of the System

Firing range, m:	
• minimum	150
• maximum	10 000
Guidance system	automatic, beam riding guid-ance
Jamming immunity	high
Number of targets engaged simultane-ously by a salvo	2
Armour penetration by shaped charge warhead, mm	1100-1300
TNT equivalent of high explosive war-head	7
Ammunition load, pcs	16
including ready-to-fire missiles	8
Change-over from traveling to combat configuration, seconds	7

Kornet-EM multipurpose missile system provides for engagement of modern and future tanks , various fortifications (pillboxes, bunkers) and low-velocity aerial targets (helicopters, assault aircrafts and UAVs) in day&night and adverse weather conditions under enemy ECM and optical jamming at ranges up to 8-10 km.

tery operation control aids is a vital need for Kornet-EM with its versatility of combat applications and ability to effectively counter aerial targets. Timely submission of aerial targets data to the fire units (Line Kor-net-EM combat vehicles) directly influences both the efficiency of ATGW counteraction to aerial threats, as well as casualties in the units under air raid.

To provide operational surveillance/data exchange and control of Kornet-EM battery combat operation, a battery commander's surveillance&control vehi-cle is designed based on standard line Kornet-EM CV.

The Surveillance&Control vehicle is special-purpose unit combining both reconnaissance/control and fire unit functions.

The control vehicle comprises:

• Integrated surveillance system featuring TV, IR and radar aids;

• navigation aids;

• communication and data exchange system;

• automated control suite;

• weapon system.

Employment of radar in the control vehicle allows target detection at rabges significantly exceeding the firing range of line combat vehicles weapon systems. This provides efficient control of Kornet-EM battery combat operation along with wide sector surveillance by Kornet-EM control vehicle.

Provided with such surveillance capabilities the task of the control vehicle limits to target detection, friend-or-foe identification and target distribution among the line vehicles in order to avoid multiple firing at a single target.

The battery commander's control vehicle capabilities by day/night time and under any weather conditions are the following:

• detection, identification and tracking of moving or stationary air and ground targets, automatic measurement, generation and processing of the detect-ed targets' coordinates;

• friend-or-foe identification;

• generation and transmission of target designation data from the anti-tank battery commander to line combat vehicles;

• maintaining radio communication within the battery, as well as with higher-rank and peer unit commander's;

• real-time control of battery fire, relocation and firing pattern planning in case of changing deployment area with data overlaying on the digital map.

These capabilities allow:

• reduction of ground targets detection time for line combat vehicles — by 2-3 times at daytime and by 6-10 times at night (if compared to target search using IR sight), aerial targets — more than 10 times;

• automatic determination and firing primarily at the most threatening tar-get;

• maintaining balanced target load on the combat vehicles to avoid multiple firing at a single targets by several vehicles;

• timely readjustment of battery firing pattern in case of casualties.

As a result, the Surveillance& Control Vehicle is able to double the combat effectiveness of Kornet-EM battery while countering enemy tanks attack in properly arranged defence formations, or increase it by 2.5 times in case of enter-ing the combat (from march) without prior area survey and missing information about enemy forces.

In case of countering aerial threats (UAV, helicopters) the combat efficiency of ATGW battery will increase by 2.5-5.0 times due to reduction of target detec-tion time and increase of detection probability. **/RA&MG/**

'Russian Aviation & Military Guide' 2017

	Release dates	Additional distribution
'RA&MG' №01 (08)	February 13th	**AERO INDIA 2017** (14-18.02.2017, India, Bangalore)
'RA&MG' №02 (09)	February 18th	**IDEX 2017 / NAVDEX 2017** (19-23.02.2017, UAE, Abu Dhabi)
'RA&MG' №03 (10)	March 20th	**LIMA 2017** (21-25.03.2017, Malaysia, Langkawi)
'RA&MG' №04 (11)	April 02th	**LAAD 2017** (04-07.04.2017, Brazil, Rio de Janeiro)
'RA&MG' №05 (12)	May 14th	**IDEF 2017** (09-12.05.2017, Turkey, Istanbul)
'RA&MG' №06 (13)	May 17th	**SITDEF 2017** (18-21.05.2017, Peru, Lima)
'RA&MG' №07 (14)	June 18th	**Paris Air Show 2017** (19-25.06.2017, France, Paris)
'RA&MG' №08 (15)	June 27th	**IMDS-2017** (28.06-02.07.2017, Russia, S-Petersburg)
'RA&MG' №09 (16)	July 15th	**MAKS-2017** (18-23.07 2017, Russia, Moscow)
'RA&MG' №10 (17)	August 22th	**ARMY-2017** (22-27.08.2017, Russia, Moscow)
'RA&MG' №11 (18)	September 17th	**AVIATION EXPO CHINA 2017** (19-22.09.2017, China, Beijing)
'RA&MG' №12 (19)	October 02th	**INMEX SMM India 2017** (03-05.10.2017, India, Mumbai)
'RA&MG' №13 (20)	October 14th	**BIDEC-2017** (16-18.10.2017, Бахрейн, Манама)
'RA&MG' №14 (21)	October 15th	**SEOUL ADEX 2017** (17-22.10.2017, Korea, Seoul)
'RA&MG' №15 (22)	November 04th	**Defense& Security 2017** (06-09.11.2017, Thailand, Bangkok)
'RA&MG' №16 (23)	November 10th	**Dubai Airshow 2017** (12-16.11.2017, UAE, Dubai)
'RA&MG' №17 (24)	November 20th	**MILIPOL 2017** (21-24.11.2017, France, Paris)
'RA&MG' №18 (25)	December 10th	**Gulf Defense & Aerospace 2017** (12-14.12.2017, Kuwait, Al Kuwait)

'Russian Aviation & Military Guide' is English-language magazine distributed all over the world.
The 'Russian Aviation & Military Guide' magazine subscription can be ordered after any issue of the magazine with the delivery anywhere in the world. The price of any one issue of the magazine is $8,88 plus the cost of postal delivery.
Send your requests for invoicing for the subscription at the address rus.avia.military@gmail.com. The number of copies, period of the subscription, the address for invoicing and for delivery and your contacts, including information about the person who pays for the subscription, should be in the request.
The editing office send only paid subscription.

doc@promweekly.ru
promweekly@promweekly.ru
www.promweekly.ru
www.ramg.info

Media postal address:
Moscow, Russia, 123104, mailbox 29, Industrial Edition

HIGH-PRECISION WEAPONS

JSC ‘High Precision Weapons’ the leading Russian designer and manufacturer of wide variety state-of-the-art military and special equipment, including but not limited to land systems, small arms, air close and short range defense systems, is now opening new business opportunities for partners.

Moscow-based and ranked among top 50 global producers of military equipment by SIPRI chart, JSC ‘High Precision Weapons’ is legally authorized since November 2016 to provide full spectrum of maintenance and overhaul, modernization and upgrade works and services worldwide.

‘High-Precision Weapons’
Kievskaya str., 7, 121059,
Moscow, Russia

Tel: +7 (495) 981-92-77
Fax: +7 (495) 981-92-78
http://www.npovk.ru

PROSPECTIVE INVESTMENTS

The Russian Direct Investment Fund (RDIF) has formed a consortium comprising leading Middle Eastern funds and finalized a deal to acquire a minority stake in Russian Helicopters (part of the Rostec State Corporation). Russian Helicopters valuation was estimated at $2.35 billion. The transaction consists of two stages. The first stage involves the sale of a 12% stake and an investment of $300 million, as well as an agreed-upon subsequent potential increase in investment to $600 million.

The deal will increase the authorized capital of the holding company. This will accumulate a significant amount of funds within the Company. These funds are necessary for the implementation of the Company's strategy and business plan, including the development of new types of helicopters. In addition, these funds will help implement the investment program of the holding company, as well as finance possible M&A activities aimed at increasing the holding's value and finance capital programs.

Kirill Dmitriev, CEO of the Russian Direct Investment Fund (RDIF), said: 'Russian Helicopters has established itself as one of the world's leading helicopter manufacturers with a growing presence in key emerging markets. The RDIF consortium's investment in Russian Helicopters will enable the company to continue its expansion into new markets, particularly in the Middle East, thanks to the participation of our partners from the region. Russian Helicopters is an attractive long-term investment opportunity with significant growth potential.'

Sergei Chemezov, CEO of the State Corporation Rostec, said: 'Today we have agreed with the Russian Direct Investment Fund and Middle Eastern investors, on the final parameters of the deal and signed documents for the sale of a minority stake in Russian Helicopters, based on the valuation of the company at $2.35 billion.'

Andrey Boginsky, CEO of Russian Helicopters, said: 'Russian Helicopters aims to strengthen its position as a leader in the global helicopter market through the continued development of new products, the provision of a leading after-sales service and a focus on expanding operations into new emerging markets. The consortium of investors, led by RDIF, will allow us to accelerate the implementation of our growth strategy.'

Russian Helicopters (part of State Corporation Rostec) is one of the global leaders in helicopter production and the only helicopter design and production powerhouse in Russia. Russian Helicopters was founded in 2007 and is headquartered in Moscow. The company comprises five helicopter production facilities, two design bureaus, a spare parts production and repair facility, as well as an aftersale service branch responsible for maintenance and repair in Russia and all over the world.

Submarines for the Russian Black Sea Fleet

At the end of last year large diesel-electric submarine Kolpino, construction of a series of six Project 636.3 submarines, was intended for Russia's Black Sea Fleet, undertaken by the Admiralty Shipyards, is completed.

The Commander-in-Chief of the Russian Navy Vladimir Korolev addressed to the audience at the ceremony: 'The series of six Project 636.3 submarines along with surface ships and naval aviation will enable the Black Sea Fleet to conduct missions with efficiency in its operational zone of responsibilities. Commissioning of this submarine marks completion of a hard and important work aimed at revival of submarine force of the Black Sea Fleet.' The Commander-in-Chief thanked the senior management and workers, which took part in construction of the new submarines, and he also congratulated the designers of the Project for this accomplishment.

'Low noise, reliability, excellent manoeuvrability and efficiency of weapon systems of Project 636.3 submarines meet the highest requirements and challenges of our time, — said admiral Vladimir Korolev. — Plans for construction of a new series of

similar submarines for the Pacific Fleet are the proof that MoD and Chief Naval Command are striving to build an advanced Navy, which is balanced in terms of capabilities and powers and capable to efficiently protect interests of the state globally and counter safety threats.'

Then the Commander-in-Chief said that the best design solutions would be implemented in the new generations of diesel-electric submarines. Robotic systems and Air-Independent Propulsion are currently under development and they will significantly change configuration of submarines and spectrum of their missions.

'Raising of the Navy flag onboard Kolpino signifies that the personnel of the Admiralty Shipyards have honorably completed the construction of the series, and it is a comfort to know that submarine force of the Black Sea Fleet has been revived. This work is a good basis for the next endeavour — construction of a new series of Project 636.3 submarines for the Pacific Fleet — noted in his speech Director General of the Admiralty Shipyards Alexander Buzakov.

'Today's event overwhelms us with emotions and pride — highlighted First Deputy Director General, Chief Engineer of Rubin Design Bureau Valentin Frolov. — The Navy is ready now to form a state-of-the-art and combat-ready force'. The Chief Engineer also added that he would like to congratulate all the personnel involved in the construction on behalf of Rubin's whole team and especially General Designer Igor Spasski, also on behalf of General Designer Yuri Kormilitsin, whose leadership brought Project 636 submarines to life.

By order of the Russian MoD, Rubin Design Bureau upgraded major systems of the original 636 design such as: torpedo and missile complex, information and control system, radar system and sonar system. A number of improvements were incorporated into ship's systems in order to better habitability conditions for the crew and enhance stealth characteristics of the submarine.

The submarine series for the Black Sea Fleet was constructed at the Admiralty Shipyards within six years — August 2010 to November 2016. From 2014 onwards, two submarines were annually commissioned to the Russian Navy. The first two submarines of the series, Novorossiisk and Rostov-Na-Donu were commissioned to the Navy in August and December 2014 respectively, while the third and the fourth boats, Starii Oskol and Krasnodar, were inducted into the Black Sea Fleet in July and November 2015, the fifth, Veliki Novgorod, in October 2016.