

RUSSIAN AVIATION & MILITARY GUIDE

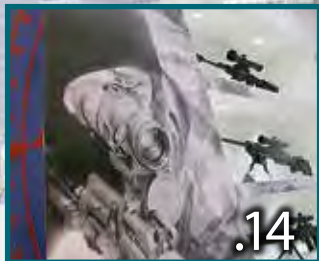
Special analytical export project of Industrial Weekly

№ 04 (11) April, 2017

FSMTC of Russia
Anatoly Punchuk says
about our partnership



Russia at LAAD-2017
Rosoboronexport
introduces innovations



Main at IDEX-2017
Russian ideas and
proposals



BRICS summit
Great prospects for
mutual development



Aerospace and Defense Technologies for Latin America

LAAD
DEFENSE & SECURITY
2017

Special partnership



Organizer:



MINISTRY OF DEFENCE
OF THE RUSSIAN FEDERATION

August
22-27

ARMY

2017

**INTERNATIONAL
MILITARY-TECHNICAL
FORUM "ARMY-2017"**

Location



**PATRIOT
EXPO**

Exhibition operator



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**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

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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

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EDITORIAL



Good defence ideas for Latin America

Russian defense cooperation with Latin America 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 LAAD-2017 Russia again represents their best products and programs of modernization, prepared for use in Latin American countries.

Valeriy Stolnikov

VIETNAM INTERESTS

During the business meeting between Concern 'Techmash' and companies from the Republic of Vietnam the issues of supply Russian products for the oil industry. The company's specialists VIEN DONG MARINE & PETROL particularly interested drill pipes of high reliability (LAIDP) production of 'Serov Mechanical Plant'. LAIDP used in drilling oil and gas wells and are most effective when drilling wells with a projected depth of 3000 m. At the meeting, CEOs Sergey Rusakov and Tony Pham discussed possible cooperation and summarized the previous meetings. Concern representatives briefed the Vietnamese side of the results achieved in advancing LAIDP. The Vietnamese delegation also expressed interest in the mining and exploration Company products to be used in the fields of Norilsk, Kamchatka, Yakutia and Uzbekistan. Kazakhstan and a special demand. Together with research institutes is a constant development of new products for drilling. As part of the Vietnamese colleagues also plan to visit the Serov Mechanical Plant to inspect the products of the plant after tests carried out to decide on purchases. During the meeting, the parties agreed to identify specific areas of work of interest to the Group and the VIEN DONG MARINE & PETROL, and begin to implement them.

MEMORANDUM ON COOPERATION

United shipbuilding corporation and Shanghai industrial group of companies heavy engineering, Jinghua (ZPMC) of China (PRC) signed 22 March 2017 in Moscow the Memorandum on cooperation and joint activities. The President of the United shipbuilding corporation Alexey Rakhmanov and acting Chairman of the Board of Directors of the company ZPMC (China) Zhu Lanyu held in the office of the USC official meeting, during which we discussed the possibility of cooperation in ongoing projects in the field of shipbuilding and manufacturing of marine accessory equipment. Following the meeting, the sides signed a Memorandum on cooperation and joint activities. USC and ZPMC has announced its intention to implement the localization of production of modern marine peripheral equipment ZPMC in the territory of the Russian Federation for the construction of floating cranes, ships pipe layers and cable layers, dredgers, cargo vessels for the transport of oversized loads, auxiliary vessels to service drilling platforms. Russian and Chinese companies agreed to create a working group to develop a roadmap for the implementation of the provisions of the Memorandum.

Submariner day

On 17.03.2017 was held a solemn meeting at the memorable sign 'Submarine strike' on the eve of the 111th anniversary of foundation day of fleet submarine forces of Russia at JSC 'Admiralteiskie Verfi' (incorporated in United Shipbuilding Corporation).

Deputy Chief of the Main Staff of the Russian Navy Rear Admiral Mikhail Neupokoyev, General Director of JSC 'Admiralteiskie Verfi' Alexander Buzakov, the veterans and the employees of the enterprise, the cadets of Naval Polytechnic Institute at Navy Scientific Training Center of the Naval Academy participated in the festive event. — This March marks exactly 85 years since the beginning of serial construction of submarines by our shipyards, General Director of the Shipyards Alexander Buzakov welcomed participants of the meeting. — During these years the Admiralty employees have built more than 300 submarines and deep-sea submersibles, many of them are unique and still unrivalled in Russian and world shipbuilding.

At present three series of the submarines are under construction at the shipyards, which includes two submarines of fourth generation of project 'Lada' with which we attribute future development of the conventional submarine fleet. Deputy Chief of the Main Staff of the Russian Navy Rear Admiral Mikhail Neupokoyev expressed his deep gratitude to the shipyards' staff, 'The submarines ships launched from the building berths of JSC 'Admiralteiskie Verfi' occupy a specific place in the combat formation of the submarine force of Russia. The enterprise managed in a short time to



construct a group of the submarines for the Black Sea Fleet, which operates in an important direction. Today we start construction of a series of the submarines for the Pacific fleet.

The formation of this group will allow to increase the capabilities and the combat potential of the Pacific fleet in order to protect the Far East borders of our country properly and confidently. The history of submarine building by JSC 'Admiralteiskie Verfi' starts in 1720 when the employer Efim Nikonov by a degree of Peter the First constructed a 'hidden vessel' — a prototype of the first submarine in the world. On the balance sheet of the shipyards is development of unique submarines such as legendary 'Alpha' of project 705, nuclear deep-water power stations, submarine 'Piranha', deep-sea submersibles 'Rus' and 'Consul' reached a diving depth of 6000 meters, and vessel 'Igor Belousov' for rescue of subma-

rines. Three series of the submarines are now under construction at the shipyards, including two submarines of fourth generation of project 'Lada'. The memorable sign 'The 100th anniversary of submarine forces of Russia' was unveiled in July of 2008 upon the initiative of the veterans — the employees of JSC 'Admiralteiskie Verfi' at the intersection of Rizhsky Prospect and Stepan Razin Street. The model of a nuclear submarine of project 671 RTM is at the center of the monument. 31 nuclear submarines of the project and its modifications which happened to be the main body of multi-purpose submarine forces of the Russian Navy were constructed in early 1970s up to late 1990s by JSC 'Admiralteiskie Verfi'. 'The submarine strike' is an artistic appearance, which, as envisioned by the sculptor, symbolizes the dynamics of the waves, the harmony of labor, attack and victory.

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 mod-



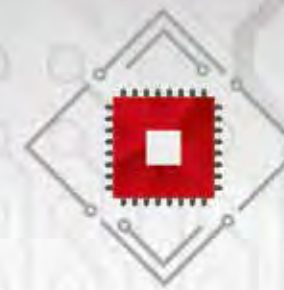
elled along the lines of Brahmos, the India-Russia entity producing supersonic missiles, which military analysts say are among the deadliest in their class.'

As part of the International military-technical forum "ARMY-2017"



★ ARMY 2017

www.intelltechexpo.ru



IntelTechEXPO
Intellectual technology exhibition

August 22-27, 2017
Russia, Moscow

EXHIBITION PROFILE:

- Integrated technologies based on high-performance machines, tools, and equipment for modernization of factories
- Automation of production. Robotic production facilities
- Test, measuring and diagnostic equipment
- Materials
- Electronic components and modules
- Additive technologies
- Energy
- Building technologies
- Industrial design
- Personnel training
- Specialized Innovation Club exhibition

Location:



Official partners:



Organizer:



UNIQUE MILITARY PRODUCTS

At the IDEX 2015 in Abu Dhabi (UAE) Concern 'Techmash' presented a wide range of military products, including several unique designs that have no analogues. For example, the NGO 'alloy' presented 80-mm unguided rocket (NAR) C-80FP, which is highly effective and universal means of ground attack aircraft from carriers. Missile capable of hitting unsheltered single and group goals, objects in fortifications and in forests, lightly armored and soft-skinned vehicles. It is the most widespread aircraft missile ammunition. This contributes to their high efficiency and reliability, ease of use, relatively inexpensive and at the lowest cost to destroy the specified goals. In the development of the latest generation of NAR and modernization of existing models were used advanced technologies that do not have analogues in the world. Antitank rocket grenade RPG-28 multipurpose grenade and rocket RMG with disposable rocket launchers produced by the NGO 'Basalt' striking modern tanks and lightly armored vehicles, provide breaks in the walls of buildings, obstacles and shelters.

RESHETNEV COMPANY AT SATELLITE 2017

Information Satellite Systems — Reshetnev Company took part in the International Satellite Communications Conference and Exhibition SATELLITE 2017 (Washington, the USA). ISS-Reshetnev representatives led by Nikolay Testoyedov, general director of the company, held more than 20 business meetings and talks with foreign partners and prospective customers to discuss the supply of onboard equipment for ISS-Reshetnev's satellites. Apart from that ISS-Reshetnev delegates made presentations of the company's expertise and capabilities building communications and broadcasting satellites based on its Express series of standardized satellite platforms. ISS-Reshetnev Company also presented its achievements in the design and production of payloads for telecommunications needs — antenna systems and critical onboard instruments.

INTERNATIONAL SEA CUP 2017

Caspian Flotilla ships are getting ready to participate in the Sea Cup 2017 international contest. Crews of Uglich and Veliky Ustug small missile ships of the Caspian Flotilla are getting ready to participate in the Sea Cup 2017 international contest. Ship crews will carry out combat firing from artillery systems against a floating mine, screens, and an air target dropped on a parachute. They will also practice different elements of navy practice. The seamen will also hold ship damage control training and practice using rescue means.

After-sales service concept

Russian Helicopters and its CEO Andrey Boginsky took part in the Indo-Russian military industrial conference in New Delhi. At the conference, Mr. Boginsky described key directions and prospects for development of the after-sales service system specifically for Indian operators of Russian helicopters. Also Russian Helicopters is implementing a number of after-sales service projects in the African and Near Eastern countries. Based on 2016 numbers, 43.5% of all after-sales services and aviation inventory provided by Russian Helicopters to foreign customers fell onto these regions, based on fulfilled contracts.

India is one of the major operators of Russian-made helicopters. Currently, there are more than 400 helicopters in operation there, which is almost 10% of the Russian Helicopters' global fleet used outside of Russia. The existence of such a large helicopter fleet and prospects of its further increase make the setup of efficient after-sales services especially relevant in India.

Within the frame of providing after-sales services to its customers, Russian Helicopters is actively developing a "single-window" format, which is aimed at building strategic relationships with helicopter operators and implies long-term agreements and transition to a service format that covers the whole helicopter life cycle.

'We suggest shifting to long-term framework contracts with fixed procurement prices, defined annual increases and maximum delivery timeframes/service windows of 3-5 years. It would allow to reduce times needed to supply spare parts and provide services, and, as a consequence, would ensure high operability of the

Indian helicopter fleet,' said Russian Helicopters CEO Andrey Boginsky.

Currently, as part of the 'Make in India' program, a joint Russo-Indian project is underway to build Ka-226T light helicopters in India. A JV created by Russian Helicopters, JSC Rosoboronexport and India's HAL Corporation will produce 200 light multirole Ka-226T for various purposes. Russian Helicopters is interested in active involvement of Indian companies in the production of spare parts, as well as technical maintenance and repairs.

Russian Helicopters is implementing advanced projects to help assess the condition of the existing fleet of Russian and Soviet-made helicopters in the region, find ways to support its flight worthiness and modernize the fleet based of the foreign customers' requirements.

'The growth of Russian Helicopters orders in terms of after-sales services from foreign customers is determined by the expansion of our global presence, which includes the African and Near Eastern countries. For us, after-sales services for Russian-



made helicopters in these markets is a crucial focus area,' said Russian Helicopters Deputy CEO for Aftersales Service Igor Chechikov.

Along with supplying aviation inventory and providing after-sales services, Russian Helicopters also assists Denel Aviation of South Africa to set up work at the maintenance and repair center for Soviet and Russian-made civilian helicopters. Russian Helicopters specialists are conducting marketing activities to ensure orders from the African countries, including Zambia and Zimbabwe.

Currently, Russian Helicopters is aiming to create and promote package solutions in the sphere of after-sales services, as well as a system of planned spare parts deliveries and a global network of service centers.

'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.

8th INTERNATIONAL EXHIBITION OF ARMS AND MILITARY MACHINERY



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2017

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20-22 MAY 2017

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ОПК РО

АВИАЦИОННАЯ ПРОМЫШЛЕННОСТЬ

NEW GENERATION OF ANTENNA SYSTEM

The holding company 'Russian space systems' (RKS, included in the state Corporation 'ROSKOSMOS') has completed the development of the antenna system of new generation, which will be part of creating in Russia a network of ground control complex of spacecrafts in deep space. The new development will provide a connection of national and international scientific missions at any distance to the borders of the Solar system. Network ground control distant spacecraft, consisting of clusters on the basis of the RTNC antenna system TNA-32L will work in the X— and Ka-frequency bands in accordance with the recommendations of the International Consultative Committee on space data transmission systems CCSDS. The complex can be involved in international cooperation projects for planetary and astrophysics space. Deputy head of Department antenna center OKB MEI Denis Khlebnikov: 'When designing the antenna system TNA-32L was used for a number of progressive developments, such as high-precision reflecting surface Luciwagner mirrors, formostabilnost structure frame of the main mirror, seticorporate suspension type hexapod, high-performance antenna-feeder devices, and precision servo actuators guidance system and a selective frequency-dividing surface. These solutions will improve the efficiency of data transfer to work with prospective spacecraft in deep space.' New antenna systems will complement those already working in Moscow, Tver oblast and Primorsky Krai RTNC on the basis of the fully steerable antenna TNA-1500 with 64-m diameter and 70-meter P-2500 — they were used in historical Soviet and the most important Russian projects. OKB MEI is constantly modernizing them, which allows Russia to successfully uchastvovat in modern research missions in deep space, for example, the space radio telescope 'Radioastron' and in the program for the study of Mars ExoMars.

MINE-SEARCHING DEVICES

Military engineers will demonstrate 'smart' mine-searching devices at the Army 2017 Forum. According to Chief of the engineer troops of the Russian Armed Forces Lieutenant General Yuri Stavitsky, military engineers will demonstrate 'smart' mine-searching devices at the Army 2017 Forum. 'We will demonstrate a number of modern and prospective devices of engineer reconnaissance, including newest technical hardware,' said Lieutenant General Yuri Stavitsky. He explained that it referred to devices capable to detect mines at the depth of 70 centimeters in metal hulls and non-conductive materials. Such devices are capable to detect not only depth of the explosives but also its metal type.

SSJ100 Customization Term Twofold

In 2016 term of production SSJ100 aircraft preparation for delivery to Russian customers has been reduced twofold as compared to the previous year making it 28 calendar days. Customization or preparation for delivery to the customer includes interior installation, aircraft painting in the customer's livery, acceptance flight tests, finalization of necessary documents and signing of aircraft log book confirming its readiness for delivery.

Starting from 2014 when customization amounted to 66 calendar days the numbers were decreasing gradually: in 2015 customization duration was 52 days and in 2016 it was already 28 days.

It was possible to achieve significant term reduction by optimizing SCAC's recourses and production sites.

Currently painting in the carrier's livery as well as interiors installation on the series-produced SSJ100 aircraft is performed in Ulyanovsk. Acceptance flight tests and delivery of aircraft to the customers take place in Zhukovsky.

As of March of the current year more than 100 aircraft have been manufactured already, among them 93 SSJ100 are in service, other airplanes are test aircraft or being prepared for delivery to their customers.

Among the operators are such companies as Aeroflot, the launch customer, operating 30 SSJ100 in its fleet, Mexican airline Interjet, the



launch customer in North America with 22 SSJ100 aircraft and Irish CityJet, the first European customer having added 3 aircraft of this type to its fleet. Sukhoi Superjet 100 in different configurations, including business version, are operated by Russian governmental agencies as well. Recently Thai Royal Force has also joined the number of SSJ100 customers having acquired the business version of the airliner. Russian air-

line GazpromAvia with 10 SSJ100 in its fleet is the largest operator of the Long Range version of the aircraft. Other operators, particularly Yakutia, Yamal and IrAero are successfully operating SSJ100 in severe climatic conditions.

Starting from entering into service SSJ100 aircraft have performed more than 180 000 flights and have accumulated 270000 commercial flight hours.

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.

INTERNATIONAL EXHIBITION OF ARMS MILITARY EQUIPMENT AND AMMUNITION

20-23 SEPTEMBER
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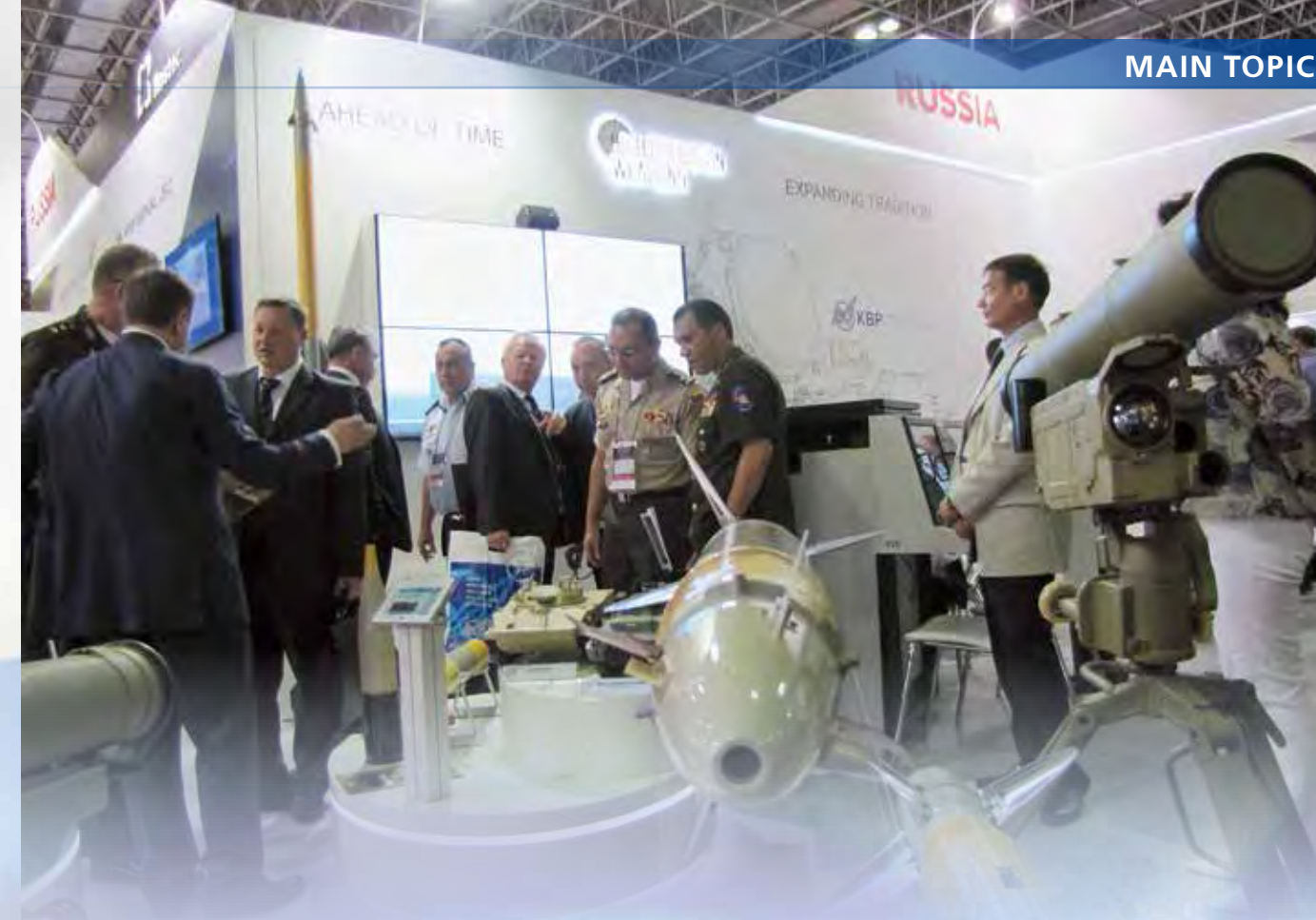


DEFENSE INNOVATIONS FOR LATIN AMERICA

Anatoly Punchuk: 'Russian origin arms and military equipment gave a good account of itself in the region'



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 LAAD-2017 'Russian Aviation & Military Guide' magazine asked a few questions to the head of the official Russian delegation at LAAD-2017 exhibition, deputy director of 'FSMTC of Russia' Anatoly Punchuk.



Russia is ready to consider the projects of creation of the joint venture for production and/or repair of the arms and military equipment. The Latin American states are generally interested in sole proprietorship of the military infrastructure objects created in their territory and, as a rule, do not show interest in creation of the joint venture.

— Mr. Punchuk, what types of Russian military equipment are the most familiar in the Latin American countries? In what areas cooperation is most active today?

— The Latin American countries are well acquainted with the Russian aircraft and helicopters, armored vehicles, missile and artillery arms, air defence means, small arms. Russian origin arms and military equipment gave a good account of itself in the region.

At present, the most active direction is supply of helicopter equipment. Besides that, the after sale support comes to the forefront — repair, supply of spare parts and components, and technological cooperation — creation of the service centers, refitting of facilities on production and repair of the military purpose products

available to the foreign customers, transfer of technologies of their production.

— What main competitive advantages does Russian military equip-

ment have in terms of being used in the region?

— The Russian equipment obtains high performances and optimal balance price/quality. It is reliable,

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.



out of the tasks assigned to the Armed Forces, including connected with elimination of consequences of emergency situations, protection of borders, etc. Representatives of the countries operating the Russian equipment during the long period of time are well informed of its advantages.

— **When did the military-technical cooperation between Russia and India start?**

— Cooperation in the sphere of the military-technical cooperation with the Latin American states has a long history. Even in the time of the USSR

the Soviet arms and military equipment were supplied to the certain countries of the region. It should be noted that the part of this equipment still functions.

In the 90th years of the XX century the cooperation was in a condition

The Russian equipment obtains high performances and optimal balance price/quality. It is reliable, unpretentious and maximally adapted to difficult climatic conditions of the states of the Latin American region. Foreign customers positively estimate efficiency of the Russian origin arms and military in carrying out of the tasks assigned to the Armed Forces, including connected with elimination of consequences of emergency situations, protection of borders, etc. Representatives of the countries operating the Russian equipment during the long period of time are well informed of its advantages.



unpretentious and maximally adapted to difficult climatic conditions of the states of the Latin American region. Foreign customers positively estimate efficiency of the Russian origin arms and military in carrying



Russia proposes examination and modernization of all range of the military purpose products both in its territory, and at the facilities of the foreign customers with use of mobile teams of experts.

of stagnation in connection with a difficult situation in Russia. However in the 2000th the process was intensified again. Since then, the volumes of export of the arms and military equipment to Latin America steadily grew.

The global financial crisis led to a certain revision of priorities in the area of the military-technical cooperation by the foreign states. The after sale support and modernization of the arms and military equipment started coming increasingly to the forefront.



Russia is ready to further expansion and deepening of interaction in the sphere of the arms and military equipment, according to needs of the Latin American customers.

— **What can the Russian Federation offer to its partners in Latin America on topics of**

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.





modernization of Russian military equipment?

— It is no secret that many states of the region have the morally obsolete samples of equipment which are still in service. Russia has serious practices on modernization and refitting of all range of the earlier supplied equipment: tanks and light armored vehicles, aircraft and helicopters, artillery, air defenses complexes. Primarily, it means replacement by more modern control circuits, sighting devices and means of communication, installation of advanced fire weapon of destruction, etc.



The performances of the modernized equipment significantly rise. This way can be very favorable to foreign customers in respect of economy of funds.

Russia proposes examination and modernization of all range of the military purpose products both in its territory, and at the facilities of the foreign customers with use of mobile teams of experts.

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

— Helicopter equipment is mostly in demand with the Latin American states. The Russian rotary-wing vehi-

cles are used not only in the military purposes, but also for fight against a drug traffic and illegal migration, transportation of freights, elimination of consequences of emergency situations.

Small and anti-tank arms, aircraft, air defense complexes, special material are also in demand.

Recently, to the forefront there also come the issues of cooperation in the area of sea and land borders protection, cyber security, counter— terrorism. We have a wide range of special means for solution of such tasks and are ready to offer them to the foreign customers.

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



— Russia is ready to consider the projects of creation of the joint venture for production and/or repair of the arms and military equipment. The Latin American states are generally interested in sole proprietorship of the military infrastructure objects created in their territory and, as a rule, do not show interest in creation of the joint venture.

It should be noted that the enterprises created by Russia in the foreign states are often under construction on offset projects. The relevant contracts include transfer of technologies of production and repair of the military purpose products which our competitors can not always offer.

/RA&MG/

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WORLD BESTSELLERS

Rosoboronexport offers a wide range of military products

Rosoboronexport, a member of State corporation Rostec, is to organize a Russian display at international Latin American aviation and defense exhibition LAAD-2017. The event assisted by Brazilian Defense Ministry is to be held from 4-th to 7-th of April on the premises of expo center RIOCENTRO, Rio de Janeiro. Russian official delegation is going to be headed by Deputy Director of Federal Service for Military and Technical Cooperation Anatoly Punchuk and Rosoboronexport delegation to be headed by Deputy Director Sergey Ladygin.

Latin America is one of the most promising regions for Russia in terms of military and technical cooperation. Today Rosoboronexport competes in tenders or explores projects to deliver aviation equipment, helicopters and air defense systems to Argentina, Brazil, Columbia, Mexico, Peru. Besides, the

countries of the region take interest in armament and military equipment used by law enforcement agencies to fight crime, terrorism and drugs', says Sergey Ladygin.

The united Russian display which includes exhibition stands of 4 leading Russian defense enterprises is located upon over 170 sq. meter area in hall 3, display R.50, with

more than 350 exhibits. In its turn Rosoboronexport has brought to Rio de Janeiro over 180 pieces of weapons and military equipment dedicated to all armed services.

The exporter experts consider operational trainer Yak-130, multifunctional high-maneuverability frontline fighter plane MiG-29M and multipurpose high-maneuverability



ty fighter plane Su-35 as the most promising for the region among the equipment introduced at the exhibition. Russian combat helicopters Mi-28NE, Ka-52, Mi-35M, heavy transport helicopter Mi-26T2, light multipurpose helicopter Ansat as well as military transport Mi-17 may

also spark interest among foreign customers. Besides, Russia's partner states in the region take interest in such air defense systems as anti-aircraft gun and missile system Pantsir-S1, man-portable missile system Igla-S and air defense missile system Antey-2500.

The region pays a particular attention to Rosoboronexport-shown products dedicated to both armed forces and counterterrorism as well as law enforcement bodies. Among them are special vehicle VPK-233136 Tigr, armored personnel carriers



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BTR -82A, BTR-80, infantry fighting vehicles BMP-3, various versions of Kalashnikov assault rifles and Kalashnikov Pecheneg machinegun. Navy is also interested in patrol boats

14310 Mirazh, 12200 Sobol and 12150 Mangust.

Besides, Rosoboronexport experts count on increased interest of local delegations to Russian prod-

tary 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 Miheev.

The official status of the exclusive state intermediary agency gives Rosoboronexport unique opportunities to expand long-term

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.



ucts capable of being used in Arctic conditions among which are survey vessels.

Only Rosoboronexport has the right to supply the world market with a full range of arms and mili-

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.

'Latin America is one of the most promising regions for Russia in terms of military and technical cooperation. Today Rosoboronexport competes in tenders or explores projects to deliver aviation equipment, helicopters and air defense systems to Argentina, Brazil, Columbia, Mexico, Peru. Besides, the countries of the region take interest in armament and military equipment used by law enforcement agencies to fight crime, terrorism and drugs.'

Sergey Ladygin



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



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.
- Technical assistance in the construction of military infrastructure facilities: defense plants, airfields, depots, ranges, training centers.

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 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.



Rosoboronexport is the only state-owned arms trade company in the Russian Federation authorized to export the full range of military and dual-purpose products, technologies and services. It is a subsidiary of the Rostec Corporation. Founded on 4 November, 2000, now Rosoboronexport is one of the leading world arms exporters to the international market. Its share in Russia's military exports exceeds 85 percent. Rosoboronexport cooperates with more than 700 enterprises and organizations in the Russian defence industrial complex. Russia maintains military technical cooperation with more than 70 countries around the world.

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/





Vladimir Karnozov

'RUSSIAN KNIGHTS'

New program: successful world premiere in Malaysia

At the International Exhibition LIMA'17 (Malaysia) there was the world debut of famous Russian Aerobatic Team 'Russian Knights' (Russkie Vityazi) with new Su-30SM multirole fighter jets. Experts and ordinary spectators were unanimous: the premiere was very successful.

The Russian Knights aerobatic team was founded on 5 April 1991 on the basis of the 1st Squadron, 234th Composite Air Regiment of the Moscow Military District. Its mainstay was the best military pilots of Kubinka AFB, who mastered aerobatics to perfection on the Su-27 fighters assigned to Kubinka in 1989. Since 1992, the Russian Knights aerobatic team has been organic to the Russian Air Force's Kozhedub Aircraft Demonstration Centre (ADC), while ADC itself is part and parcel of the Air Force's Chkalov Training and Field Test Centre in the city of Lipetsk now.

The 'Russian Knights' is an aerobatic demonstration team of the Russian Air Force. Originally formed on April 5, 1991 at the Kubinka Air Base as a team of six Sukhoi Su-27s, the team was the first to perform outside the Soviet Union in September 1991 when they toured the United Kingdom. On December 12, 1995, disaster struck as three team jets flew in-formation into a mountainside near Cam Ranh, Vietnam during approach while en route to home from a Malaysian airshow during adverse weather conditions.

Last year, the 'Russian Knights' marked their 25th anniversary and turned a new leaf in their history: after having flown the Sukhoi Su-27 and Su-27UB aircraft, they started the conversion to the Su-30SM advanced supermanoeuvrable fighters. Members of the famous aerobatic team ferried the first four aircraft of the type from Irkut Corp's Irkutsk Aviation Plant to their home station, Kubinka AFB, in the Moscow Region



mance even more spectacular and enable it to conduct long-distance flights to air shows in various corners of the world.

'Su-30SM is an excellent aircraft, therefore, our demonstration program at LIMA'17 was a lot of new solo flying components through the usage of the fighters super-maneuverability', said the leading pilot of 'Russian Knights' Andrey Alekseev.

The Su-30SM twin-seat supermaneuverable multirole fighter powered by a pair of AL-31FP engines with thrust vector control is a derivative of the export-oriented Su-30MKI built by Irkut Corp. since 2000. The Sukhoi design bureau and its sub-contractors adapted the aircraft's radar, radios, IFF system and some other equipment to the RusAF's standards.

The Su-30SM's large fuel load and inflight refueling system enable it to accomplish difficult missions far away from friendly airfields, which is especially relevant to Russia with its vast expanses. The capability is further facilitated by the fighter's two-man crew, whose two-seat cockpit allows the Su-30SM to be used as combat trainer in addition to its primary role.

Also at LIMA'17 General Dato' Sri Hj Affendi bin Buang, the Chief of the

Royal Malaysian Air Force, together with the top-management of Irkut Corporation and UAC, held a meeting with Russian and Malaysian pilots. Pilots of the 'Russian Knights' aerobatics group and the 11th squadron of the Royal Malaysian Air Force performed demonstration flights on supermaneuverable Su-30SM and Su-30MKM aircraft respectively.

General Dato' Sri Hj Affendi bin Buang named Su-30MKM fighter as one of the best of its class and expressed his gratitude to the makers of this magnificent aircraft. 'Development of the Su-30MKM pro-

gram is very important for Malaysia's defence capability', the Chief of the Royal Malaysian Air Force said.

The air aces of the Malaysia and Russia, whose performances constantly evoke admiration of the audience, highly praised flight characteristics of their aircraft. Col. Gborg,

the pilot of the Royal Malaysian Air Force named Su-30MKM as the wonderful aircraft. 'This is the best fighter I have been flying for my twenty-year career', he added.

Mr. Oleg Demchenko, the President of Irkut Corporation, marked the high skills of pilots and

their ability to use fighter's capabilities to the maximum extent. Mr. Alexander Tulyakov, the First vice-president of UAC, said: 'Positive assessment of aircraft given by Russian and Malaysian pilots is very important for us — the developers and manufacturers.'

/RA&MG/

on 14 October 2016. The other four Su-30SMs were ferried from Irkutsk a month and a half later, on 30 November.

The team's receiving Su-30SM fighters differing from the Su-27 in having higher manoeuvrability, the mid-air refueling system and cutting-edge avionics will make its perfor-



'PANTSIR-S1' — the system is designed for air defense of small military and administrative-industrial objects and areas against aircraft, helicopters, cruise missiles and high-precision weapons, guided air bombs and unmanned aerial vehicles as well as for reinforcement of AD groups during repulse of massive air strikes and ensuring of engagement of lightly-armored targets. One of the world's finest examples of precision weapons. Designed and manufactured by JSC 'KBP named after Academician A.Shipunov' (Russia, Tula) — part of High-Precision Weapons holding.

AIR DEFENSE MISSILE-GUN SYSTEM 'PANTSIR-S1'



Tatiana Valeeva

IDEX-2017

High achievements of Russian defense innovations



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International defense exhibition IDEX-2017 was held in Abu Dhabi where Russian participants had a great success. This was the thirteenth such exhibition. Russia took part in all of them. Totally Russian display presented about 800 innovative military products. Rosoboronexport, the Russian display sponsor, introduced over 240 weapons and military equipment dedicated to all armed services, the products made by 18 defense enterprises and holding companies. The Russian display was reasonably among the richest in innovations and high-performance weapons.



The international defence exhibition and conference IDEX is the most strategically important tri-service defence exhibition in the world. IDEX is the only international defence exhibition and conference in the region demonstrating the latest technology across land, sea and air sectors of defence. It is a unique platform to establish and strengthen relationships with government departments, businesses and armed forces throughout the region. IDEX is held under the patronage of His Highness Sheikh Khalifa Bin Zayed



Vladimir Dmitriev,
Sales and Marketing Deputy Director, Kalashnikov Concern

'As for us IDEX is primarily a global site where we can not only show ourselves but see our competitors' state of play. Since over the recent couple of years we have become a global player in terms of range of products, our goal

in Abu Dhabi this year was to present Kalashnikov not only as a fire arms manufacturer but a producer of various categories of unmanned vehicles, boats and power-afts. As a matter of fact, such a wide range of capabilities has been introduced by Kalashnikov for the first time.

Our goal is to extend the brand perception and show that we are engaged not only in military but civil products. I may say this par-

ticular extended presentation of Kalashnikov was an absolute success. We have been paid much attention and received the highest marks as to sporting and hunting weapons among others. We are happy with that.

We introduced with much success our traditional product, upgraded version of Kalashnikov assault rifle. We understand that in modern world one should have not just a proper and

proven weapon but have capability of using it with different options like sights, collimators, laser and infrared aimers as well as many other things. Thus, a weapon should be equipped with locking plates, auxiliary handles and special devices to improve comfortable and safe performance. It should definitely have a telescopic butt. As a matter of fact, all this is available in the improved AK which we introduced at IDEX-2017'.



**Vyacheslav Gorchakov,
General Director JSC 'Mechanical engineering research institute
named after V.V. Bahirev'**

'Since IDEX is the largest defense exhibition in 2017 participation in it is a great

opportunity to show our developments to many countries, discuss the future of mutually beneficial cooperation with existing and would-be customers. The participation in this exhibition over recent years has significantly boosted increase of export volume. Taking into account the big number of countries involved in the exhibition NIMI shows the main line of export-dedicated products. The primary attention is paid to products for 152mm artillery systems shown for the first time abroad. They include high-explosive dual purpose cluster projectile and illumination round. The main and undisputable advantage is reliability, which has been many times proven in different climatic conditions. Over the recent years there have been no claim made by customers as to NIMI products.'



Al Nahyan, President of the UAE and Supreme Commander of the UAE Armed Forces and is organised by the IDEX LLC in association and with the full support of the UAE Armed Forces. IDEX takes place biennially at the Abu Dhabi National Exhibition Centre (ADNEC), which is centrally located in

Abu Dhabi, the capital of the United Arab Emirates. The IDEX exhibition takes over 100% of the state-of-the-art exhibition centre utilising 133,000 sqm of event space. Staff Major General Pilot Faris Khalaf Khalfan Al Mazrouei, Head of the Organizing Committee of IDEX and NAVDEX, said: 'We are confident that the collocated events will provide an excellent platform for the local defence industry to gain valuable insight and understanding to further develop the sector. They also provide the UAE Armed Forces with a unique opportunity to review the lat-



**Dmitri Zhidkov,
Deputy General Director, Scwabe holding company**

'Since IDEX is a military exhibition, Scwabe company

presented defense-oriented products there. It is a wide range of aviation equipment including helicopter-dedicated such as optoelectronic systems, sighting systems. As the exhibition is mostly devoted to ground forces we have focused on this branch largely. We offered armored vehicle-mounted sighting and thermal imaging systems, various types of fire arms sights, collimators, night and day vision as well as thermal imaging optical sights, wide range of binoculars including stabilized ones and laser range finders. We have been taken great interest in as we have objective competitive positions. Russian defense products are easy-to-use, reliable and properly done. This is also related to Schwabe-made goods. Our equipment features high quality, it is reliable, modern and competitive in terms of prices!'

est developments taking place globally in this important military field.' He added: 'These exhibitions complement the critical role played by our armed forces in collaboration with all government and national entities in supporting different economic sectors in line with the vision of our leadership. Our teams today are working relentlessly to achieve all aspects of preparedness in hosting the two mega events in a manner that reflects their growing reputation and global position. Recent international geopolitical changes, especially in the Middle East, pose many security challeng-



**Valery Yarmolenko,
Press Secretary, JSC Concern VKO Almaz-Antey**

'As we had expected a display by VKO Almaz-Antey provoked great interest at IDEX-2017. The display has

been attended by more than 40 representatives of armed forces of different countries, ministries and departments related to military industry. Of course, Near East and North African states held much interest in our exhibits. While establishing IDEX display we were also driven by availability of products

previously delivered to this region. We offered various upgrades and maintenance options. It is well known that nearly all concern-made products which were delivered (in Soviet times as well) and are being delivered to foreign markets have much space for being upgraded. Thus, the concern is focused on creating service centers directly in countries which use our products. Besides, when bringing new equipment to our display, we take into account shopping capacities of each country and region. Our products are highly competitive and outperform foreign versions, so they cannot be cheap.'

es for decision makers. Therefore, the role of IDEX and NAVDEX has become even more significant in providing an interactive platform for discussing and showcasing some of the latest defence and security technologies and solutions. I am fully confident that the organising committee will turn both of these events into unrivalled successes in a way that aligns with the directives of our leadership and strengthens our country's prominent position regionally and internationally as

a leading player in cutting-edge defence services and solutions.' Humaid Matar Al Dhaheiri, Acting Group CEO of ADNEC, said: 'Year-on-year, IDEX has played a significant role in promoting Abu Dhabi and the UAE as a launch pad for pre-eminent international events that are much awaited by senior military leaders, decision makers, investors and companies alike. Such events provide the opportunity to showcase the latest developments across the defence industry.'





Al Dhaheri pointed out that the upcoming edition of IDEX-2017 was the largest ever since it was first launched in 1993. This development follows the decision by ADNEC to hold the Unmanned Systems Exhibition and Conference (UMEX) separately from IDEX — helping to increase the exhibition space for current and new exhibitors. IDEX and NAVDEX hosted across ADNEC's indoor and outdoor exhibition spaces and exceed 133,000 square metres.

Al Dhaheri also pointed out that IDEX 2017 was record participation from among the largest international defence and security companies globally in addition to hosting many nation-



al entities. He added that NAVDEX 2017, set to be held alongside IDEX, witnessed an increased in the number of participating companies as well as in the fleet of naval ships to be displayed at the ADNEC Marina.

At IDEX-2017 the Russian delegation was headed by the minister of trade and industry Denis Manturov. Rosoboronexport delegation was headed by the company deputy general director Igor Sevastyanov.



Viktor Zhuravlev,
Marketing Department Chief OJSC 'V.A. Degtyarev Plant'

'It is worth noting that such international event is a good platform where our military experts specialized in various academic fields

are able to communicate. In Russia it is not so simple for them to get together in one place and discuss areas and capabilities of developing modern armaments. Meanwhile they can do it at military exhibitions when facing the latest achievements of their companions. UAE and other Middle East countries take great interest in purchas-

ing and upgrading Russian armored vehicles they previously bought. Meanwhile, nearly all Russian armored vehicles from light-armored landing vehicles to APCs, IFVs and heavy tanks use ZiD-made various caliber machineguns as main or secondary armament. That is why the plant display presents mostly fire arms and tank sub-caliber pro-

jectiles armed with shaped charge and high explosive guided missiles.

This is reliability and failure-free performance. During fire demonstrations at the previous exhibitions the Degtyarev-made machineguns have repeatedly much impressed viewers with their capabilities of engaging various targets from unprepared positions.'



Vladimir Vorontsov,
Chief Designer, JSC UMZ

'Ulyanovsk Mechanical Plant, included in JSC Concern VKO Almaz-Antey, introduced Buk-M2E air defense missile system, Shilka and Tunguska 2S6M1 antiaircraft vehicles at arms expo in Abu Dhabi. These prod-

ucts are well-known all over the world. Wherever shown they are taken great interest in by experts and ordinary audience. The time is passing but our products, especially Buk, remain among much fancied ones at world market. Besides, Ulyanovsk Mechanical Plant constantly upgrades the systems. We have long-term programs and good promising outlook for developing our weapons.

We carry out consistent and rather heavy upgrade

of products. It is related to possible use of new types of weapons including missiles, digital signal process and high mobility, as well as radars, navigation systems, communications, transceivers, computers, display systems etc. All this equipment mounted on UMZ-made systems is up-to-date.

Let me note that Ulyanovsk Mechanical Plant is fully involved in presale trade, delivery of products and systems on the cus-

tomers' premises, guarantee maintenance and spare parts support through all life cycle of its products.

Another thing we are interested in IDEX is that UAE, as known, try to buy the most perfect and best goods in the world. Indeed the best world defense products are brought here. Thus, we can see the state of play of our competitors, make certain conclusions and make sure that our positions in this segment are indisputable.'

'Near East is traditionally considered by Russia as one of the most important regions in terms of military and technical cooperation. Rosoboronexport offers here both the latest armament and military equipment as well as upgrade services for the available Soviet and Russian-made equipment. Russian arms have proven themselves in Near East being also involved in the recent antiterrorist operations,' said Igor Sevastyanov.

The Russian defense products were shown by 38 companies among which were the following members of military and technical cooperation: State Corporation Rostec, JSC

Rosoboronexport, JSC Research and Production Corporation Uralvagonzavod, JSC Concern VKO Almaz-Antey, JSC KBP, JSC NPO Bazalt, JSC NPO SPLAV, JSC NPO Pribor, JSC Schwabe — defense and protection, JSC PO UOMZ.

Fighter plane Su-35, two-seater multifunctional frontline fighter plane MiG-29M2, operational trainer Yak-130, military transport Il-76MD powered by Il-76MD-90A PS-90 engine, scout attack helicopter Ka-52, transport helicopter Mi-17V-5, transport helicopter Mi-171Sh, upgraded tank T-90S (code 188MS), tank support combat vehicle BMPT, armored personnel carrier



BTR-80/82A, infantry fighting vehicle BMP-3M, missile and gun boat 12300 Skorpion, patrol boat 14310 Mirazh, air cushion landing ship 12322 Zubr, air defense missile system S-400 Triumf, air defense gun and missile system 2K22M1 Tunguska-M1, air defense missile system 9K33M3 Osa-AKM and other defense-oriented products were presented by Russian display as dummies, mockups and other advertising materials. Special armored vehicle SBM VPK-233136 and special police vehicle VPK-3924 Medved (SPM-3) were shown in an open air site. The Russian delegation representatives participated in business and demonstration programs. Separate types of military equipment were presented for partners.



Many Russian defense products shown at IDEX-2017 became the focus of interest for international military society. Among them were multipurpose high-maneuverable fighter plane Su-35, scout attack helicopter Ka-52, air defense missile system S-400 Triumf, air defense gun and missile system Pantsir-S1 and portable man-portable air defense missile system Igla-S. The region's naval representatives took interest in patrol boat 14310 Mirazh and high-speed patrol boat 12150 Mangust.

The region's ground forces representatives took a traditionally great interest in tank T-90MS which showed its perfect performance, infantry



fighting vehicle BMP-3M, armored personnel carrier BTR-82A and super-protected army armored vehicles Taifun-K. Foreign customers take continuous interest in Kalashnikov fire arms and special fire arms.

During his visit to United Arab Emirates Russian minister of industry and trade Denis Manturov met Abu Dhabi Crown Prince Mohammed bin Zayed Al Nahyan. In their presence a number of intergovernmental agreements were undersigned which set the main frameworks for cooperation between the countries with regard to key joint projects. Among such projects is a joint development of 5-th generation light-weight fighter plane and possibility of entering into contracts to deliver Su-35s. Besides, Denis Manturov had a number of meetings with UAE key investment foundations. The discussion involved UAE participation in Russian



Alexandr Krasovitskiy,
Director General 'Military Industrial Company'

defense and dual-purpose manufacturers to would-be customers from nearly around the world. In this regard our company's goal this year, like it was before, is to show our products, find new clients and markets.

The reason we have chosen 'Tigr' and 'Medved' is that these armored vehicles

are not military products, so we are able to deliver them directly to customers.

We presented full-scale vehicles in Abu-Dhabi since a Near East client psychologically should touch and see the product alive to make a bargain or not, no matter how many leaflets or videos he was shown.

The main competitive advantages of VPK, LLC are relatively low cost and high reliability. The quality of our equipment was mostly proven in battle conditions in Syria. Operating conditions do not mean much to us, be it Asian, Arctic or other regions. Our products work well in any environment.'

'IDEX site is one of the most imposing in the world. Nearly everybody comes here, from



Igor Kulikov,
Director for Military Technical Cooperation, 'Research and Production Corporation 'Uralvagonzavod'

'Uralvagonzavod has been working in this region for a long time now. Our products are well-known and heavily used here. These are, primarily and certainly

tanks, engineering vehicles, artillery systems. That is why at IDEX-2017 we offer our partners both upgrade for the previously delivered equipment and support for the whole after-sale maintenance cycle, spare parts, components. Meanwhile, Uralvagonzavod, of course, offers its new products, as well as advanced developments. We certainly consider

high quality of our equipment which has proven itself in hard Near East conditions to be one of the key competitive advantages.

Meanwhile, we try to offer some new goods and technical solutions at every exhibition. In particular, in addition to all products made by the corporation our traditional and would-be partners were shown

remote weapon station armed with 30mm gun. Its main feature is that it is unmanned and can be mounted on light armored vehicles, used for upgrading BMPs previously delivered, mounted on armored personnel carriers and adapted to customer's chassis as requested. The station was taken a great interest in.'

projects dedicated to railways, development as well as pulp and paper production. Besides, a possibility of Arab funds being involved in Russian projects in third countries was covered too.

In Abu Dhabi Russian minister of industry and trade Denis Manturov confirmed that there was a bilateral cooperation with UAE with regard to defense industry investments as well as supply of various army and aviation equipment. In particular, the minister informed that the Russian Federation had signed a contract with one of the

Near East countries to deliver T-90MS tanks. He added that another contract was supposed to be undersigned. Answering the question about possible contracts to supply Su-35s in 2017 (agreement of intent to purchase Russian fighter planes was signed on February 20) Denis Manturov said that as to this aircraft Russia had been having a constant dialogue with several foreign clients. He also added that load on production could be evenly distributed taking into account internal orders.

/RA&MG/



Stanislav Vartanyan,
Deputy Director, Corporate Communications, Kronstadt Group

'At IDEX-2017, Abu Dhabi, Kronstadt Group actually unveiled abroad its all-arms tactical simulator Combat-E. It has immediately sparked great interest.

Combat-E is designed for unit training. One of its key features is that it can be used in different branches and ser-

vices. Thus, the simulator is capable of conducting combined exercises of ground troops, navy and air force in virtual battlefield. The simulator is based on a concept of so-called common synthetic battlefield environment. This is a geo-specific terrain fully detailed and generated from real digital maps. The plot involves combat operations conducted by both friendly and hostile forces. Using 'smart symbols' technology the tactical screen enables to plot operational environment, plan and assign tasks.

Subsequently during the session a person sitting at exercise commander's workstation can get complete information about elements and independent units performing certain actions, their efficiency, a task status and reasons it has not been accomplished, if so happened. Our platform has a number of significant advantages such as high visual fidelity, proper physical terrain simulation including weather conditions, physical features of landscape, buildings, facilities and dynamic objects.

Combat-E also includes a powerful Artificial Intellect system which is capable of achieving high grade of realism in simulating actions done by computer-controlled objects, both friendly and hostile. Thanks to these advantages our product sparks strong interest of foreign delegations. This fact, we suppose, will let us successfully compete at world markets with the best counterparts. Meanwhile, a virtual battlespace or training area can be created to meet every customer's requirements.'

Valeriy Stolnikov

THE EIGHTH BRICS SUMMIT

Great prospects for mutual economic development

In the state of Goa (India) there was the eighth BRICS summit. On the summit's agenda were plans to strengthen the BRICS strategic partnership as a key international organization and develop multifaceted cooperation through the group. The summit participants also discussed fighting international terrorism and reaching a settlement in Syria, bolstering global economic and financial stability, and improving the global governance system. In follow up of the summit, the BRICS leaders adopted a number of documents, including the Goa Declaration and the Action Plan for its implementation. Among the documents adopted were the Provision on the BRICS Customs Cooperation Committee, the Memorandum of Understanding between BRICS Diplomatic Academies, and the Memorandum of Understanding for the Establishment of the BRICS Agricultural Research Platform.

President of Russia Vladimir Putin in his speech at the summit said: This BRICS summit, as always, is taking place in a constructive and businesslike spirit. Credit for this goes to Prime Minister Modi, who has created an atmosphere that is at once informal and at the same time very constructive and conducive to work. This might seem just a detail, but in reality

it creates the conditions needed for good and productive contact that brings us concrete results.

The BRICS countries share close positions on current global and regional issues, call for resolute action to fight terrorism, and joint efforts to counter other serious threats and challenges in today's world.

We believe that international conflicts should be resolved exclusively through political and diplomatic

means and we reject all forms of pressure using force and infringement of other countries' sovereignty.

Some very important agreements have been prepared for today's meeting. The Goa Declaration and the Action Plan for its implementation, which we will approve today, are comprehensive documents that set out the key tasks for the coming year and beyond. We also value greatly the fact that the Indian presiden-



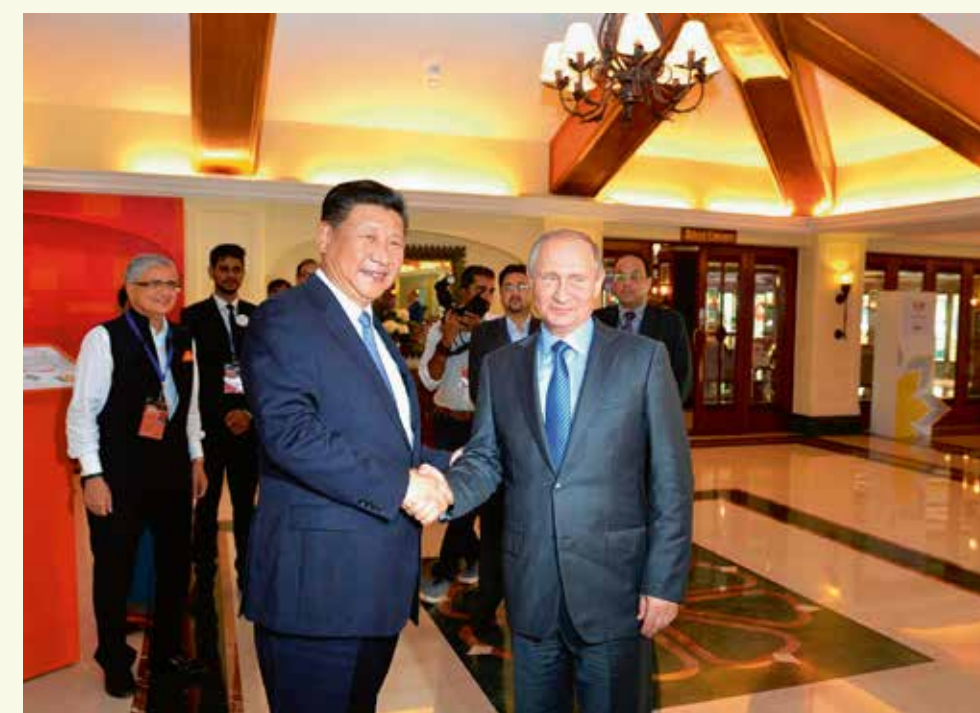
Working together closely with business representatives, we developed the BRICS Economic Partnership Strategy, which, I remind you, was adopted last year at the BRICS summit in Ufa, in Russia. We will now build on this strategy with the new investment cooperation roadmap currently under preparation. We hope that business will take a most active part by giving our undertakings substance through concrete projects.

cy has ensured continuity and has taken into account the initiatives that Russia put forward in Ufa a year ago.

I note that the BRICS countries' role in the global economy continues to grow. In 2007, we accounted for less than 24 percent of global GDP, but this year, we account now for more than 31 percent. The five BRICS countries are active participants in developing multilateral decisions and agreements that will accelerate global growth and trade and help to resolve the unemployment issue.

The BRICS countries work together fruitfully within the World Trade Organization and the G20 and share common positions on global development and reforming the global financial and economic architecture.

The New Development Bank and the Contingent Reserve Arrangement





The BRICS countries represent a very large consumer market that includes three billion people, big reserves of raw materials and energy resources, and a developed science and technology base.

have begun their practical work. The Development Bank has already approved the first five investment projects in the clean energy sector, one project in each member country. We hope that the bank will actively develop project financing in the BRICS countries' national currencies.

One of the key tasks now is to adopt a development strategy for the bank. We must decide on the geographical and sectorial priorities and then start drafting the criteria for new members' accession to the bank and set the main parameters for its investment portfolio.

The launch of the Contingent Reserve Arrangement gives our countries opportunities to better protect our currencies from financial market fluctuations. Starting from February, the BRICS countries' central banks have opened special correspondent accounts in our national currencies.

At this time of intensifying international competition, we call on our partners to step up trade and investment cooperation between the BRICS countries. This will enable us to make use of the advantages we gain from

the mutually complementary nature of our economies and will reduce each country's vulnerability to unfavourable changes in the global economic situation.

I remind you that at the Ufa summit a year ago, our countries adopted the BRICS Economic Partnership Strategy through to 2020. We hope that the roadmap for BRICS investment cooperation and the action plan for its implementation will be ready for adoption very soon and we will be able to start the strategy's practical implementation.



We think that our countries could pursue more effective industrial and technology cooperation. We need to move to a practical plane the initiatives to establish a BRICS foundry industry union, build a centre for processing and storing electronic data, and develop professional training. It is important to continue work on the proposal to establish a BRICS energy agency. We support India's proposal to launch an internet resource for small and medium-sized businesses in the BRICS countries.

We see great potential for developing cooperation in the e-commerce sector. This is one of the fastest growing economic sectors in the world today. We therefore need to develop a unified approach to regulating activities in this sector and creating an environment for barrier-free online commerce between our countries.

We see good prospects too for cooperation in the peaceful use of outer space. To give just one example, if we unite the observation data from our remote Earth surface probe satellites, the BRICS countries could make a great contribution to resolving problems facing humanity today, such as global climate change, natural disasters, and protecting the environment.

We think it would be useful to speed up efforts to harmonize customs procedures, including exchanging experience on introducing a one-stop-shop approach for foreign economic actors, working together to unify anti-monopoly regulations, and move towards closer production norms and technical standards.

I note the active and practical contribution the BRICS Business Council

is making to our work. I think we need to bolster cooperation between our countries in the healthcare sector, with the aim of exchanging experience on preventing and stopping the spread of dangerous infectious diseases such as Ebola in Africa and the risks associated with Zika in a number of Latin American countries.

Moscow will host the High-Level Global Conference on Tuberculosis in November 2017. It will examine measures to fight this and other dangerous epidemics. We invite all of the BRICS countries to take part.

Our humanitarian cooperation is picking up the pace now. India has proposed a number of initiatives in the area and they have our support.

Russia's initiative, the BRICS Network University, has begun its

practical work, with 56 universities in our different countries joining the project over this first year of work. I am sure that the university will be an important tool for carrying out multilateral education, science and innovation projects.

Let me conclude by saying that we are ready to continue our close cooperation with our BRICS partners. I want to express sincere thanks to India's prime minister, Mr. Modi, for the enormous work our Indian friends have put in to preparing and organizing this summit.

On the sidelines of the BRICS Summit in Baulim Vladimir Putin met with President of the People's Republic of China Xi Jinping. After a short one-on-one conversation, the talks continued in an expanded for-

mat. The heads of state shared their opinions on the situation in Syria. Vladimir Putin informed his Chinese counterpart on the latest developments. During the conversation, the parties noted the similarities in their positions on the need to fight terrorism, and emphasized the inadmissibility of any interference in Central Asia's affairs. They also stressed the necessity of further cooperation in preventing international terror from penetrating Central Asia and reaching the rest of the world through it.

Additionally, the leaders of the two countries discussed the situation on the Korean Peninsula and spoke out for its denuclearization. Overall, the similarity between Russia's and China's positions on key international issues was highlighted. President of Russia



We tried to find additional niches for cooperation. The options were broad, for example, more contact in space research, aviation, and mechanical engineering in general. As for military technical cooperation, the quality of that cooperation is quite high, maybe even better than with many other countries: we do not just sell India high-tech modern weaponry, but we also have joint research projects.

Vladimir Putin said: Mr. President, dear friend, colleagues, it is a pleasure to see you. I would like to stress that our contacts on the political level, at the level of governments, ministries, agencies and leading companies are developing very intensively. As always, we traditionally have an opportunity to hold a bilateral meeting on the sidelines of, in this case, the BRICS Summit, and we are very glad of it.

President of the People's Republic of China Xi Jinping said: I am also very glad to meet with you here, in Goa, once again, my old friend, President Putin. Elections to the State Duma of a new convocation have been successfully held in your country recently. United Russia won a convincing victory, which creates a good solid political foundation for Russia's further stable development. My sincerest congratulations. Stability in Russia in a rapidly changing world is beneficial both for the world and for China.

Last month you took part in the G20 Summit in Hangzhou, China, and made a huge contribution to the summit's success. We also held a productive bilateral meeting and reached important agreements on the development of Chinese-Russian relations, comprehensive partnership and strategic cooperation at a high level.

As permanent members of the UN Security Council, we must further consolidate our cooperation within multilateral structures. We must address key issues from the position of our joint coordination and coop-

eration, and hence work towards a more just and rational world order through joint efforts.

At the meeting of the BRICS leaders with members of the BRICS Business Council president of Russia Vladimir Putin marks: Business, as we know, plays a key part in resolving the BRICS countries' current tasks of ensuring sustainable development and speeding up economic growth. The BRICS countries' governments take into account their business communities' views when drafting plans for trade, economic and investment cooperation between the group's members. In this context, the Business Council, established in 2013 at Russia's initiative, has a particularly important role



to play. Not only did the Council start working smoothly, it also began proposing very useful ideas and initiatives.

For example, business representatives started sending in proposals on removing excess administrative barriers, optimizing customs and technical regulations, technical standardization, simplifying visa procedures for businesspeople, and many other problems that make it harder to do business.

Working together closely with business representatives, we developed the BRICS Economic Partnership Strategy, which, I remind you, was adopted last year at the BRICS summit in Ufa, in Russia. We will now build on this strategy with the new investment cooperation roadmap currently under preparation. We hope that business will take a most active part by giving

our undertakings substance through concrete projects.

We consider it important to establish close contacts and cooperation between the Business Council and the New Development Bank. We hope to see relevant recommendations from the business community on expanding project activity with the bank.

The BRICS countries represent a very large consumer market that includes three billion people, big reserves of raw materials and energy resources, and a developed science and technology base.

Russia will continue its efforts to facilitate economic rapprochement between the BRICS countries and lay the ground for launching new business projects, and we invite businesspeople from all of the BRICS countries to work on our market and develop partnership ties with Russian companies.



We will, of course, continue to do all we can to support the Business Council's work as an important means for strengthening mutually advantageous partnership between the BRICS countries.

At the other meeting of BRICS leaders — with heads of delegations of

BIMSTEC member states — Vladimir Putin had say about multi-sectoral technical and economic cooperation. He had say: Without a doubt, free trade zones, which are actively developing around the world, provide clear advantages to participants, with a greater flow of goods and

capital, higher rates of economic development, and new jobs. At the same time there are real risks that preferential and closed agreements could fragment and destabilize the global system of trade. This is why we strongly believe that regional integration processes should at all times be based on generally accepted standards, clear and transparent rules, supplementing, not substituting, the multilateral trade framework.

Russia is consistent in its efforts to promote bilateral trade and investment with Bay of Bengal countries. For example, Russia is proactively working with Bangladesh on peaceful nuclear energy power by implementing a major joint project to build the Ruppur Nuclear Power Plant.

The approaches used by BRICS and BIMSTEC are to a large extent in step with the international agenda. Our countries are committed to the prin-

Russia will continue its efforts to facilitate economic rapprochement between the BRICS countries and lay the ground for launching new business projects, and we invite businesspeople from all of the BRICS countries to work on our market and develop partnership ties with Russian companies.





ciples of international law, condemn double standards, and stand for equal and indivisible security for all.

We are stepping up cooperation with Thailand on conventional energy. Russian companies are working with PTT, a Thai oil and gas company. There are also other examples of cooperation on major projects.

In Myanmar, Tyazhpromexport is completing construction of a major iron and steel plant using unique Russian technology. It is expected to open by the end of the year.

Russia and Sri Lanka established an intergovernmental commission on trade, economic, research and technical cooperation, and its first meeting took place in February 2016. Last year, Russia helped Nepal over-

come the consequences of a destructive earthquake.

It is satisfying that the approaches used by BRICS and BIMSTEC are to a large extent in step with the international agenda. Our countries are committed to the principles of international law and the UN's central role in international affairs, condemn double standards, regime change by force, and stand for equal and indivisible security for all.

We know that the Bay of Bengal countries are seeking to step up counter-terrorism cooperation. BRICS countries are also working on this and have recently established a Working Group on Counter Terrorism to this effect. For this reason, we believe that it would be advisable to

think about coordinating our counter-terrorism efforts.

To conclude, I would like to express confidence that today's meeting will provide an additional impetus to reinforcing mutually beneficial, friendly relations between countries from the two associations based on the principles of equality, taking into account and respecting each other's interests.

After that BRICS Summit Vladimir Putin answered questions from Russian journalists. And said about his talking with partners from India and China: Indeed, India is one of our priority partners, and a strategic partner. I should not need to recall the time of the popular Hindi Rusi bhai-bhai slogan (Indians and

Without a doubt, free trade zones, which are actively developing around the world, provide clear advantages to participants, with a greater flow of goods and capital, higher rates of economic development, and new jobs. At the same time there are real risks that preferential and closed agreements could fragment and destabilize the global system of trade. This is why we strongly believe that regional integration processes should at all times be based on generally accepted standards, clear and transparent rules, supplementing, not substituting, the multilateral trade framework.



Russians are brothers). In fact, little has changed since then, and our relations have grown stronger if anything. But military technical cooperation is not the only area of interest to us. Unfortunately, we have not fully taken advantage of our capabilities in the civilian economy, and there is so much we could do there.

India is a huge market with 1.25 billion people. Moreover, a significant portion of the Indian population has fairly high living standards that match average European income levels. That is a very big and lucrative market for our products.

We tried to find additional niches for cooperation. The options were broad, for example, more contact in space research, aviation, and mechanical engineering in general. As for military technical cooperation, the quality of that cooperation is quite high, maybe even better than with many other countries: we do not just sell India high-tech modern weaponry, but we also have joint research projects.

The S-400 Triumf contract is worth not hundreds of millions, but billions of dollars. We have also agreed to improve the BrahMos missile, which

will be land-, air— and sea-launched. We will also work to increase its range. And we will work together on a fifth-generation aircraft. It has basically made its maiden flight, but there are some issues we need to work out. I am talking about the T-50 fighter plane.

As I have said, our relations in this area can be described by our willingness to help our Indian friends acquire additional competences. You know that we have organised the assembly and production of the latest T-90 combat tanks and the Sukhoi Su-30 aircraft here.

Finally, on the question of how our BRICS partners have responded to our response measures taken against the countries that imposed sanctions on us, I do not see any concern on their part because we have not and have no plans to set any restrictions on the goods they produce.

Furthermore, the restrictions that we introduced for the countries that imposed sanctions against us give our BRICS partners and other partners new opportunities on the Russian market. They are making active use of these opportunities too. I therefore see no problems and complications here.

/RA&MG/



Sergey Kulik

SECURE RESCUE AT ANY HEIGHT



Unique autonomous rescue parachuting back-pack system for emergency escape

The innovative Russian private Space Rescue Systems Ltd. (SRS Ltd.) company (www.cosmic-rs.com) proposes a unique and unrivalled emergency rescue vehicle SPARS® — an Autonomous Rescue Pneumo Transformable Chute Back-pack System — a validated forefront rescue solution for guaranteed secure individual emergency escape from nearly any high elevation structure (skyscrapers, offshore platforms etc.). The SPARS® project is resulted in a creation of a brand new pneumo-framed aerodynamic devices technology. There is no doubt in the near future this solution is going to be a must-have in skyscrapers construction all over the world

The SRS Ltd. proposes a SPARS® high rise escape technology that has a global nature. It is uncovered market niche with an obvious but unrealized human requirement to be and to feel safe while living or working in high elevation buildings. In case of emergency than traditional evacuation is impossible or ineffective those people all over the world have practically no means of urgent secure rescue from the height and need an alternative solution.

Actually the technical reviews shows that at present there are practically no means for secure alternative escape starting from 60÷80 m height and higher available on the market. But according to the said firefighter's statistics about 3÷5% of people being caught in alarm situation on the high-rise building used to try escaping from the windows and

usually perished. On the other side homeland security analytics says that in average an every skyscraper in the world is expected to be subjected to a fire case (terroristic attack or other emergency) once in every 47 years.

So the SRS Ltd. has decided to resolve the problem in finding an alternative to traditional evacuation methods technical solution. It takes about eight years of R&D to resolve the task. Finally it is resulted in creation a brand new escape technology — an Autonomous Rescue Pneumo Transformable Chute Back-pack Solution for secure personal rescue from high-elevation structure in case of emergency than traditional evacuation methods are impossible.

The SRS. Ltd company in outsourcing cooperation with 18 leading Russian and foreign aerospace companies has fulfilled full-scale research and development activities to devel-

op the project from conceptual proposal stage to releasing operating prototypes unparalleled anywhere in the world.

The SPARS® escape technology is based on a synergy of sophisticated aerospace technologies such as Air-Aspirator Rapid Inflation; Elastic Pneumo-Frame Catapult Ejection; Air-Drag Deceleration; Air-Bag Shock Absorbing and others. Such technologies were invented for space probes deceleration during descent in atmospheres of Solar system planets and its landings on surfaces.

The SPARS® device provides a secure individual escape of untrained person or valuables cargos with weights 45÷120 kg. from about any of existing high-rise (50÷1000m) facilities (skyscrapers; towers; offshore platforms etc.) with guaranteed safe landing on any underlying surface in urban terrain or water in

case of emergencies than traditional evacuation methods are impossible.

The SPARS® solution meets the Russian Ministry of Emergency Situations (EMERCOM) requirements for high-rise emergency escape apparatus (GOST R 22.9.08-2005; GOST R 12.4.206-99) and provides for the following unique capabilities, never implemented before:

1. Alternative of emergency escape (so-called 'last resort rescue')
2. Emergency evacuation of an untrained person having weight of 45÷120 kg, from heights of 50÷1,000 m;
3. Ready-for-use in 45÷60 sec;
4. Self-sustained operation and independently selected escape route;
5. User-friendly operation for untrained persons and fully automated rescue procedure right from start;
6. Personal protection against external hazards during evacuation;
7. Appropriate weight of a back-pack-type carried device;
8. Secure injury-free landing on any underlying surface.

The SPARS® unit for individual use had required a special certificate basis. In this regard the National Standard (GOST) 4240-001-2012 specifying medical and technical requirements for injury-free operation by untrained persons rescued by means of new type SPARS® shock-

absorbing systems entered into force in 2013.

To have certification tests performed a special Hybrid-III (USA) crush test dummy-based anthropomorphic (bionic-like) instrumentation station has been developed and created by the SRS Ltd., which has no equals in Russia.

A full cycle of comprehensive calculations and testing to validate design properties and performance has been performed. Up to now the SPARS® device technical operational reliability is 98.7% but further testing is under way.

New SPARS® escape solution provides the following advantages:

1. Alternative (a 'last resort') escape mean for ordinary person in case of emergency in the high-rise structure;
2. Secure rescue of untrained personnel (18÷70 years old) from high elevations from 5 till 1000m (no practical means available starting from 50 m height);
3. Off-line capability of the system provides mobility that helps to find optimal self-escape way of out from emergency situation;
4. Smooth automated ejection from the emergency object after manual initialization of the system;
5. Guaranteed deploy of the canopy with 3÷5 m loss of height irrespective of air flow speed pressure;
6. Protection from dangerous external factors (fire, hits, smoke) during descent;

The SPARS® General Specifications

1. Total Assembly Weight — 25 kg
2. Rescue Payload Weight — 45÷120 kg
3. Descent Elevations — 5÷1000 m
4. Landing Velocity — 5÷7 m/s
5. Landing Angle — < 30°
6. Footboard Barrier Elevation — 1.5 m
7. Descent Time — 3÷150 s
8. Ready-to-use Time — 45÷60 s
9. Launch Initialization Time — 15÷20 s
10. Inflating Gas — Air;
11. General Dimensions:
 - a. Assembled — 900x450x300 mm
 - b. In Descent mode — 6,500x2,700mm (without canopy)

Actual Landing Impact Loads:

Acceleration directions:

'chest-to-back' — up to 8÷10 g

'side-to-side', 'head-to-pelvis' — up to ± 6 g

Acceleration Exposition Time — less than 0.5 s

Acceleration Growth Velocity — less than 500 1/s

User's age — 18÷70 years

7. Safe landing on any underlying surface in urban terrain;
8. Reusable and does not sink.

In packed and assembly complete mode the SPARS® system weights 25 kg with back-pack dimensions





850x450x350mm and has easy — to-use suspension system.

The SPARS® has its Technical Data Sheet (TU 801130-5047075064-01-10) and working design documents issued. Under the SRS Ltd requirements Russian gas-filling systems (GFS) manufacturing company has mastered Autonomous Two-Stage GFS for SPARS® (TU 8042-017-45307693-2013).

The SRS Ltd. Intellectual Property Rights on SPARS® and its 'know-hows' have been completely protected within Russia (9 Patents, 3 Trade Marks) and abroad under PCT (Patent Cooperation Treaty) procedures 2 'umbrella' requests for SPARS® have entered national level in 15 countries and covered 78% skyscrapers and



95% potential SPARS® manufacturers. 13 Patents of the US, China, Japan, Canada, South Korea, Singapore, the Ukraine, Indonesia, Malaysia and Australia have been already received.

Three Russian EMERCOM Certificates of Conformity were received for the SPARS®. 'Aerospace medicine and military ergonomics' R&D Institute of the Russian Air Force has granted an official approval for the SPARS® physical adaptability.

The SRS Ltd. company now is looking for cooperation with a strategic Partner and/or investor in order to industrialize the brand new SPARS® product; to make it commercial; to prepare and set up its production and to enter with it into a global commercial market having all nec-

essary intellectual property rights protected.

An accurate assessment of the terms, timeframes and investments required for the SPARS® industrialization it is foreseen that a Partner from the region where product itself (or its production) could be demanded (Middle East, China, US, Europe, Asia-Pacific etc.) could formulate and provide the SRS Ltd. Company with the regional authority technical requirements to upgrade the product specifications and also could determine the necessary level of licensing.

At the same time in order to reduce production costs it is desirable to find and select a local manufacturer taking into account its technical capabilities and possibility to use appropriate production process technologies.

Upon receiving necessary information from a Partner the SRS Ltd. Company could finalize the design documentation, to fabricate a prototype with specifications meeting local needs and to determine expected investments and timeframes necessary to prepare and to run mass production of the product in the region.

Shares and Conditions in the business organization is a matter of further negotiations. The SRS Ltd. Company would be ready to demonstrate its good willing approach and to meet a Partner in negotiations halfway with necessary flexibility in some critical questions aiming to achieve mutually beneficial cooperation.

Such forms of cooperation as Joint Venture, Technical, Manufacturing or License Agreements are feasible.

For a strategic industrial Partner sought who would be interested to

There are following innovations in the proposed SPARS® technology:

1. A brand new free parachuting technology (means and escape method) was created for emergency escape from heights higher than 50 m where practical methods for safe evacuation of a person are not available on the market.
2. Sinergy solution based on specially designed and produced from film-laminated fabric a rapid inflatable air-beam single volume frame structure for:
 - Elastic catapult ejection of a human from a window of an emergency object;
 - Forced deploy of the canopy with only 3÷5 m loss of height and irrespective of air flow speed pressure for deployment (usual parachute requires of 25÷100 m free fall and/or 250÷350 km/h speed of airplane to be deployed);
 - Guaranteed safe landing with 5÷6 m/s vertical velocity on any underlying surface in urban terrain using integrated air-frame shock absorbing pneumo dumper.
3. Fully automatic mode of usage (after manual initialisation of the apparatus) and all the descend envelope accelerations bearable for an ordinary person make the escape solution available for use by untrained people from 18 till 70 years old;
4. New type of light weight air-proof film coated fabric for air-beam inflatable frame structure was created.

The Special National Standard (GOST) for shock acceleration limits for untrained human using new type of lodgment Rescue Parachuting Systems was issued.

The Crash test dummy Hybrid-III 50% percentile was instrumented, calibrated with the help of centrifuge, certified and used as anthropomorphic instrument for human acceleration checking during field tests and validation of the Autonomous Pneumo Transformable Escape Chute.

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By cooperation – to peace and progress!

run mass production of the SPARS® in the region and enter an empty market with protected rights it would be necessary to have production technology experience in the fields of:

- thin coated/laminated fabric manufacturing;
- assembly from these fabrics a complex air-beam-frame air-proof inflatable structures;
- parachute canopy manufacturing;
- air-aspirator gas filling manufacturing;
- plastics (carbon) manufacturing and forming
- human field (air-borne) tests plastic forming and others.

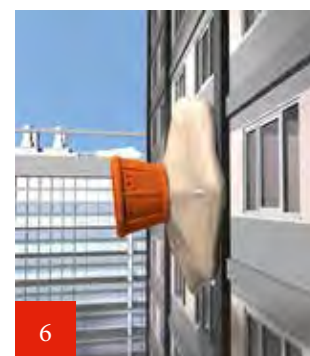
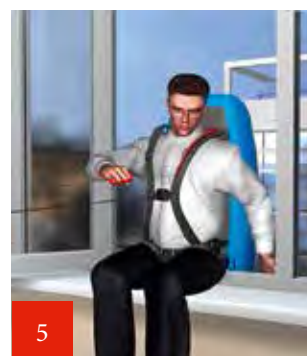
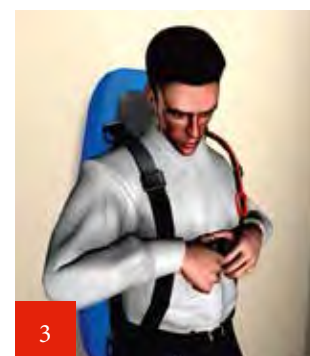
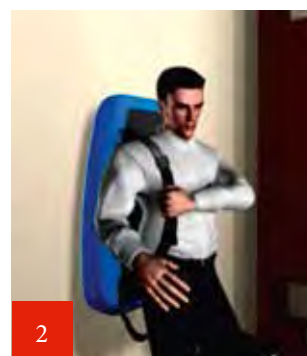
A Partner sought may be expected to undertake part of those activities or provide financing for already SRS Ltd. Company existing outsourcing manufacturing solution in Russia on a mutually beneficial basis.

As for the SPARS® solution operation such a potential entity sought (hotels, profitable houses; skyscraper's management company; offshore platform management; air-borne attractions & entertainment companies etc.) should only require a free window exit sized 1000x500 mm at the appropriate height to use Autonomous Pneumo Transformable Escape Chute and propose to its clients an additional exceptional secure service with limited warranty.

General market estimations shows there are over 7,303 finished and 2,500 under construction skyscrapers worldwide with the heights of 100÷828m, over 100,000 buildings having height of 50÷100m and more than 800 offshore platforms. Taking that analysis into account the SPARS® may have potential market capacity of up to \$700-850 million annually.

Furthermore, the SPARS® estimated potential market capacity is worth over \$3.5 billion in commercial sector alone. The Governments market is bigger but for accepting that new technology implementation it may require some updates of the appropriate local norms and regulations.

/RA&MG/



SRS Ltd. (OOO 'KCC')
25A Leningradskoe HWY
Khimki, Moscow Region,

The Russian Federation, 141400
t. +7(495) 617-1731
f. +7(495) 617-1732

E-mail: info@cosmic-rs.com
www.cosmic-rs.com

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	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)
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'RA&MG' №13 (20)	October 14th	BIDEC-2017 (16-18.10.2017, Бахрейн, Манама)
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'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)

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doc@promweekly.ru
promweekly@promweekly.ru
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ОФИЦИАЛЬНОЕ ЕЖЕДНЕВНОЕ ИЗДАНИЕ ФОРУМА

Главный старт дня

Научно-деловая программа «Армии-2017»: все грани обеспечения вооружением МО РФ



Вчера во второй день работы форума «Армия-2016» стартовала насыщенная научно-деловая программа Второго Международного военно-технического форума «Армия-2016». В мероприятиях деловой программы принимают участие руководители и представители ведущих государств мира, представители международных организаций, государственные структуры, эксперты.

Посвященным различным аспектам обеспечения национальной безопасности России. По мнению многих экспертов, ключевым мероприятием научно-деловой программы второго дня стал круглый стол «Россия в меняющемся мире: вызовы, опасности, угрозы», организованный Военной академией Генерального штаба ВС РФ. Участники заседания обсудили военно-политическую обстановку в мире и факторы ее destabilization, возможности современных войсковых и противотанковых средств, а также в рамках научно-деловой программы прошли круглые столы, посвященные

на перспективам развития военно-медицинской техники, новым инструментам решения задач воздушно-космической сил, вопросам совершенствования ракетно-артиллерийского вооружения, организации оборонных

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