№ 1 03/2012

MAGAZINE FOR PARTNERS OF

Transmashholding

№ 1 03/2012 MAGAZINE FOR PARTNERS OF
Transmashholding

CONTENTS

Journal for partners
of Transmashholding CJSC

Editor-in-Chief
Konstantin Dorokhin
k.dorokhin@tmholding.ru

Editorial office address
Moscow, ul. Butyrsky Val, 26, bld. 1
Telephone: (495) 660-89-50

The journal has been issued with participation of Media Line PH
www.medialine-pressa.ru
Director General
Larisa Rudakova

Design dummy
Ilya Malov

Editorial Director
Dmitry Dorofeev

Commissioning Editor
Marya Frolova

Design and page proof
Elizaveta Krasnova
Elena Khoroshiltseva
Alexey Kuznetsov
Sergey Khvatov

Proofreading
Natalya Konnova
Elena Savelyeva
Ekaterina Komarova
Larisa Nikolina

Prepress
Andrey Klochkov
Maxim Kuperman
Oleg Mashkin
Oleg Nikitin

Passed for printing on March 27, 2012

Printed in Viva-Star printing office
Circulation 300 copies.

Dear friends,

Transmashholding is turning 10. Is it much or not? Definitely, our company is very young. It has so much to strive at. HOWEVER, IF WE LOOK BACK, IT IS SAFE TO SAY THAT WE HAVE MADE A LONG WAY AND REACHED SIGNIFICANT SUCCESS OVER THE FIRST DECADE.

Today, our Transmashholding is the leader on the railway engineering market in Russia and other CIS countries. We hold strong positions of one of the world's largest manufacturers. Our company manufactures advanced and high-quality products that meet the strictest global criteria. Each year, our designers create new, more and more perfect and readily producible articles. Launch of new products, development of new sales channels, enhancement of international co-operation – all this is the key to success of the holding for many years to come.

Creation of a truly innovative and effective company has become an idea that has brought together holding employees no matter where they work – in Moscow, Novocherkassk, Penza or Lugansk.

We are very happy that the effort made by the holding strikes home to our counterparts, customers and consumers of Transmashholding products. We could not have had what we have now if it was not for their participation and involvement in settlement of domestic transport machine-building development tasks. The policy of dramatic technical modernization and increased rate of introduction of innovations adopted by Russian Railways JSC, Moscow Metro and other our friends and partners has become the best incentive for our development.

I am well confident that the framework laid will help us reach the objectives set before the holding in the new decade – make the Russian rail transport even more reliable, efficient and comfortable.

DIRECTOR GENERAL,
A. A. ANDREEV

Contract signed for the supply of 300 mainline electric locomotives to Ukraine before 2016

As a part of the arrangements made between Transmashholding CJSC and State Administration of the Ukrainian Railways, PK NEVZ LLC concluded contracts for the supply of 300 mainline freight electric DC and AC locomotives during 2012–2016. Ukrainian railways will be provided with 70 2ES5K AC locomotives and 230 2ES4K DC locomotives. Each locomotive comprises two sections.

Electric locomotives will be manufactured at Novocherkassk electric locomotive plant (NEVZ) with application of Ukrainian components and in the modifications that ensure their maximum integration with the Ukrainian railway system (first of all, as related to signaling and communication systems).

In 2012, 28 2ES4K electric locomotives will be built for Ukraine.

2ES4K and 2ES5K are advanced products of NEVZ, the manufacture of which has been mastered over the recent years. Electric locomotives of these series are purchased in large batches by the Russian railway operator Russian Railways JSC. One-section (E5K) and three-section (3ES5K) locomotive versions have also been built based on 2 ES5K.

A small batch of 2ES5K electric locomotives (15 units) was built under a Ukrainian order in 2007-2008; currently, these locomotives are operated at Odessa railways.

Metrovagonmash will build 682 subway cars for the Moscow metropolitan over two years

Under a contract concluded, Metrovagonmash plant located in Moscow region (Mytishchi, Moscow region, a part of Transmashholding CJSC) will supply 682 new subway cars to the Moscow metropolitan in 2012–2013.

The bulk of the rolling stock ordered by the Moscow metropolitan is represented by the latest cars of 81-760/761 series. This year, the metropolitan will be provided with 320 such cars and 20 cars of 81-740.4/741.4 Rusich model. In 2013, the plant will produce 312 more of 81-760/761 and 30 – 81-740.4/741.4 cars for the Moscow metropolitan.

The first cars of the new series are expected to be delivered to the Moscow metropolitan in late March 2012.

Cars of 81-760/761 model are the latest development of the domestic subway car building industry. They are fitted with the passenger car HVAC and video surveillance system that enables image transfer to the situational center. Air decontamination system has for the first time been used in the new cars. Compartments are fitted with doors with individual doors, electronic route displays and LCDs. Cars have spaces to accommodate baby carriages.

Cars of the new series are fitted with trucks that enable smooth running, noise reduction and decreased track loads. Use of these cars ensures reduced operating costs (up to 40%) and energy savings – the design makes use of advanced asynchronous traction drives that enable energy savings. The time of acceleration to 80 km/h of 81-760/761 train is only 27 sec vs. 40 of the trains being decommissioned. New car bodies are made of stainless steel.

Rusich cars belong to the rolling stock produced since 2005; it is used not only in Moscow, but also in Kazan and capital of Bulgaria – Sofia. Car compartments are fitted with HVAC systems; compartment doors are equipped with anti-trap and advanced passenger information systems.

The new rolling stock will be used to replace the cars with an expired life and at new metropolitan lines.

Transmashholding and Alstom to present the latest tramway to Moscow Mayor Sergey Sobyanin

Transmashholding, together with its strategic partner and shareholder Alstom, presented the latest 100% low-floor high-speed tramway designed with due regard to Russian peculiarities to Moscow Mayor Sergey Sobyanin.

The presentation took place in Moscow, in Bauman's tramway depot. Alstom and TMH plan to produce the new low-floor high-speed tramways in Russia. The companies intend to jointly integrate into the Moscow tramway network the most advanced solutions and developments in the area of rolling stock, traffic management, passenger flow management, signaling systems and other aspects of the rail transport.

Moscow Mayor was shown a low-floor tram car of a modular design that has incorporated the latest achievements of the global tramway-building industry based on Citadis flag tramway model designed by Alstom. The tramway presented in Moscow is fitted with a purpose-built low-floor swing-motion truck that will be able to use the city current rail infrastructure and, thus, will reduce its preparation and operating costs. The tramway speed limit is 75 km/h and it may be operated with the average speed of 25 km/h depending on the available infrastructure and signaling system (the speed of current Moscow tramways is 11 km/h).

The latest engineering solutions adopted in the new tramway such as composite materials, new innovative truck and modular design enable reduction of maintenance and repair costs, decrease of specific power consumption by up to 10% and increase in the rolling stock life to 30 years. Thanks to its length of 25 to 35 meters, depending on the customer's requirements, passenger capacity nearly doubles – up to 300 passengers.

100% low floor ensures easy access for passengers with children, elderly and disabled people. At the customer's request, the tramway may be provided with WiFi Internet access.

Alstom leadership in the manufacture of tramway systems and experience of TMH – Russia's largest rail rolling stock producer – will allow the partners to offer a comfortable, safe and modern city transport. Alstom and TMH intend to produce new models of low-floor high-speed tramways in Russia intended for heavy-duty service. Currently, more than 1,500 tramways created by Alstom are operated all over the world at lines of 40 cities with a total length of 245 mln km and they have already transported over 4 bln passengers.

BECOMING A JUGGERNAUT

TODAY, TRANSMASHHOLDING SHOPS PRODUCE ELECTRIC AND DIESEL TRAINS, MAINLINE AND ELECTRIC INDUSTRIAL LOCOMOTIVES AND DIESEL UNITS, FREIGHT AND PASSENGER CARS AND METROPOLITAN TRAINS. It took Transmassholding only a few years to become one of the largest world manufacturers of railway transport. It all started in 2002.

By early 2000s, EP1 electric locomotive was the only locomotive produced in small lots at NEVZ

TIME TO GATHER

In early 2000s, Russian economy was hard bested. Recent default, offsets and barter trade – it all prevented companies and business from normal development. Against this background, a number of companies – large shipper Kuzbassrazrezugol JSC and TransGroup AS railway operator who had quite a large fleet of railway machinery had troubles with its maintenance.

The rolling stock was in need of constant renewal, but all the plants that had to do these works were in a bad way. Virtually the whole railway machine-building industry was hard beaten by the crisis. The situation was such that the attempts to establish co-operation with transport machine-building enterprises were exposed to considerable risks. Quite often, the plant accepted a repair order, but the money it received in return was immediately spent on repayment of debts. The repair customer was “in limbo” and could not understand if the plant was able to perform its obligations or not.

In these conditions, management of the companies involved in coal mining and transportation, HC Kuzbassrazrezugol JSC and TransGroup AS, concluded that if they had not taken a firm hold of these plants, there soon would have not been a place to repair and acquire the new rolling stock.

On the other side, branch analysts increasingly predicted a gain in railway

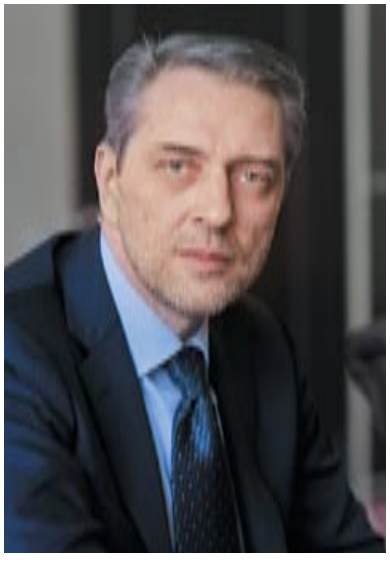
equipment supply orders from the largest market players, including RZD JSC in particular. This was how the idea was born to purchase rolling stock manufacturing plants. This enabled settlement of the current issues of repair and upgrade of the own railway machinery fleet and offered brand new outlooks.

Investors' expectations were met. Besides, the project turned out to be an interesting one and generated an individual business. Settlement of internal issues of the two companies gave birth to a machine-building holding. The core of plants was created by the holding already by 2005, when Metrovagonmash was purchased. Due to the purchase of this site that had a highly developed technological and engineering base, the holding strengthened positions of Russian rolling stock manufacturers. This was how the company concentrated all railway transport manufacture directions around itself.

Creation of 2TE25K Peresvet manifested revival of mainline freight diesel unit production in Russia

Mikhail KHROMOV, former Director General of Transmashholding

The original idea was to enter the market and gather rolling stock manufacturing plants. The initial strategy was not aimed at the acquisition of freight car producers. The main focus was on locomotives and passenger cars as well as enterprises specializing in key rolling stock components. It was only by late 2003, that it became clear that a world manufacturer had to be gathered essentially. A strategy for world-level company creation was conceived. First, in terms of overall production and later on – in terms of global presence – in the post-Soviet space and Asia, i. e. on the most accessible markets to Russians.



NEW INDUSTRY

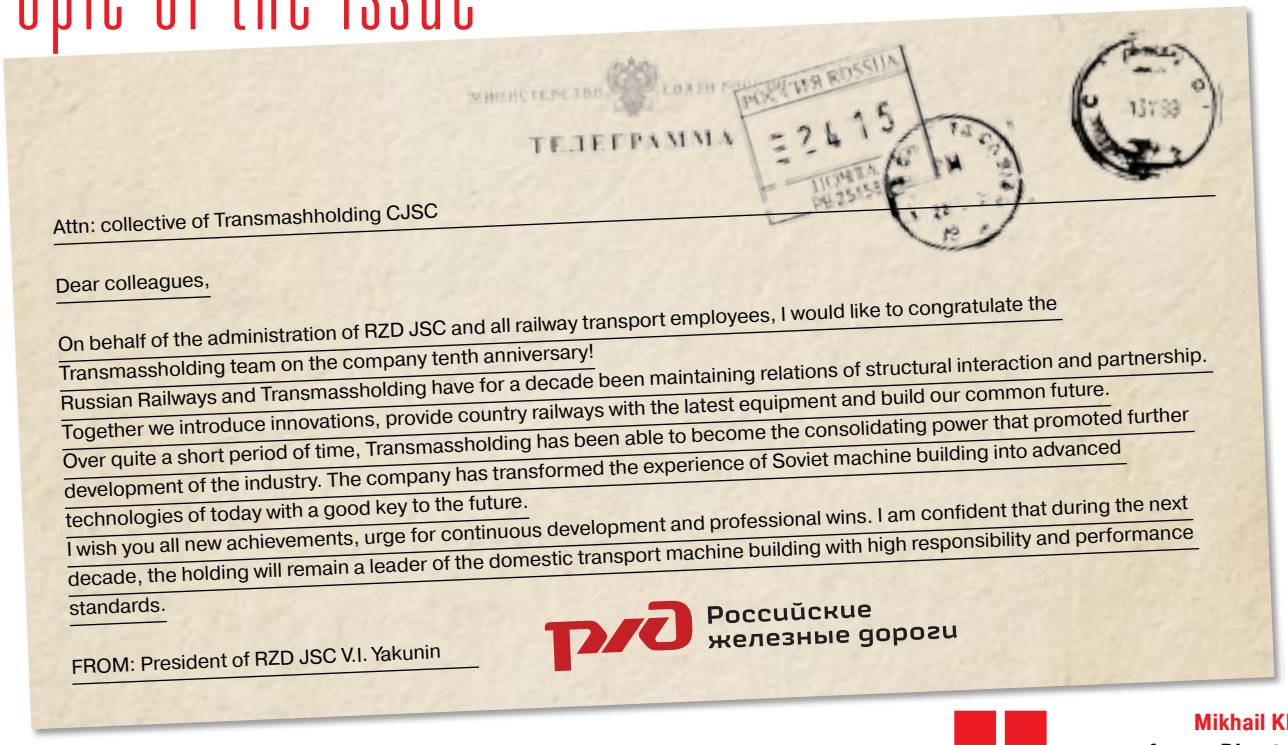
At that time, the heavy machine-building industry did not exist as such. There were disparate plants with their owners and problems. Problems were in plenty. Considering that railways as a system experienced disastrous lack of finance, there were virtually no railway orders for locomotives and other rolling stock.

Serious and hard work was ahead – production sites were urgently staffed with personnel. For example, in 2002, there were 5,400 employees at Novocherkassk electric locomotive plant and in 2004, already 6,900. Following an increase in overall production, development of new machinery and equipment, skilled staff lacked at all enterprises. Sometimes, personnel departments had to tour the country to find a relevant specialist.

The burning issue of engineering personnel training was concurrently settled. The company had to develop its own personnel training program and establish relations with higher education institutions.

Additional equipment was urgently purchased and upgraded to cope with galloping orders.

This strategy has completely paid off – plants started ramping up production virtually from the first months of work. Thanks to the active efforts of the holding managerial team, a portfolio of orders was generated. On the one hand, work load was ensured, economy was upbuilt to enable profitable operation of enterprises and product manufacture in



ТЕЛЕГРАММА

Attn: collective of Transmashholding CJSC

Dear colleagues,

On behalf of the administration of RZD JSC and all railway transport employees, I would like to congratulate the Transmassholding team on the company tenth anniversary!

Russian Railways and Transmassholding have for a decade been maintaining relations of structural interaction and partnership. Together we introduce innovations, provide country railways with the latest equipment and build our common future.

Over quite a short period of time, Transmassholding has been able to become the consolidating power that promoted further development of the industry. The company has transformed the experience of Soviet machine building into advanced technologies of today with a good key to the future.

I wish you all new achievements, urge for continuous development and professional wins. I am confident that during the next decade, the holding will remain a leader of the domestic transport machine building with high responsibility and performance standards.

FROM: President of RZD JSC V.I. Yakunin

Российские железные дороги

relevant scope and of relevant quality. On the other hand, new orders were attracted. For that end, co-operation with RZD JSC and large industrial enterprises as prospective customers was enhanced. Joint efforts resulted in generation of a global manufacturing order. At first, the scope was quite small and sufficed to stay afloat only. But then, production requisitions were even more numerous than plants could handle to promote output growth.

Besides, the company decided to take part in passenger rail transport development. A number of long-term agreements were entered into with the main partner, Russian Railways JSC, that provided for serial production and development of new machinery in co-operation with railroaders, including distributed traction equipment.

2006 saw major efforts in close co-operation with the Federal Antimonopoly Service. The point is that by the moment of asset consolidation, Bryansk plant accounted for 65% of the shunting locomotive market, Demikhovo plant – 79% of the electric train car market, Kolomna plant – 100% of the mainline diesel unit market, Novocherkassk plant dominated the mainline and electric industrial locomotive market, whereas Penzadizelmash accounted for 91% of the market of diesel engines for diesel units.

It was understood that Transmassholding was becoming a monopolist. However, competition in the industry had to be addressed in terms of the global market. A national railway machine-building company was essential to ensure development and competitive power of Russian companies and promote transport security in Russia.

FAS approved the consolidation and issued directions, according to which certain work restrictions were imposed on Transmassholding – the company had to ensure performance of contracts without ceasing production, and in case of a lack of capacities – meet the product demand on the domestic market. A number of restrictions addressed the company pricing policy.

Despite new working conditions, production investments and creation of a strong research and engineering base made it possible for the company to enter European and Asian markets with high-tech equipment. The sales coverage of the products released by company plants is quite broad – locomotives and cars manufactured at Transmassholding sites may be seen in the CIS, Eastern Europe, Near East and Africa.

Mikhail KHROMOV, former Director General of Transmashholding:

Nearly all the enterprises – Novocherkassk electric locomotive machine-building plant, Bryansk machine-building plant, Bezhitsa steelworks, Tver wagon works – were on the verge of bankruptcy and some of them were undergoing bankruptcy proceedings. We did not acquire a single plant in good repair. I can remember the NEVZ assembly shop – it was half-dead. Like in a movie – gentle wind, leaves, peaceful and calm, birds flying. Workers did not get wages for months, but they had no choice – they still came to shops. We were kind of lucky – when we bought plants, a skeleton staff of true professionals remained.

In 2005, the new Ermak 2ES5K electric locomotive was demonstrated to V.V. Putin and V.I. Yakunin. Today, this is the largest scale production locomotive in Russia

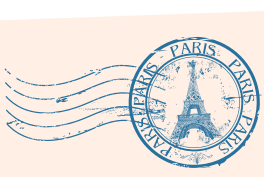
THROUGH NEGOTIATIONS TO THE STARS

Transmassholding employees faced a task of establishing relations with key customers – RZD and metropolitans. The whole work was made via negotiations, but total mistrust ruled at first. Virtually no one believed that a few launched plants would be able to do and produce anything. Transmassholding employees nearly had to live in the RZD JSC headquarters. First, they entrusted Bryansk machine-building plant with orders for shunting locomotive overhauls. Later on, they started to coordinate orders for new machine manufacture.

Upturn of Russian Railways played an important role in the growth of orders. From year to year, an increase in orders was so fast that at some point, demand for the new equipment was such that plants had no time to produce it. A few joint projects were developed; we discussed joint testing and creation of service centers. RZD supported promotion of Transmassholding products abroad. However, despite the fact that company managers have long been partners, there is no back-slapping between them. RZD JSC imposes very stringent requirements to the development and supply of the required equipment within the shortest period possible.

Transmassholding spent many hours negotiating trying to change the attitude of its major buyer RZD JSC and foreign companies. At Transmassholding, they were aware that development of joint partner programs is one of possible ways to get the fastest possible access to advanced technologies, especially in the knowledge domains where the country has not had enough experience historically. Of course, the holding could do what is created jointly with foreign companies on its own, but this would require much more time.

At first, large foreign manufacturers Alstom, Bombardier, Siemens, General Electric and some others made light of



TELEGRAM

Dear partners,

On behalf of Alstom, I would like to congratulate you on the tenth anniversary of your work in the industry and thank all the employees who have made our co-operation possible!
Since 2007, when we signed the first agreement that laid the foundations of our strategic partnership, we have never been off the track. Together we are building strong relations with clients and a sustained business model aimed at continuous development. Alstom is proud of its co-operation with Transmassholding and believes in our common future both as a partner and shareholder.
Few companies have enough energy and commitment to overcome our challenges and I would like to thank you all for your co-operation and hard work. I am confident that with this team and loyalty, the next decade will be just as successful as the first one.
Looking forward to further development of our co-operation and new interesting projects,

Sincerely yours,
Patrick Kron, Alstom President

ALSTOM

a new player. It came to a point when partnership offers were evidently discriminating. For instance, a company wanted to implement a project of upgrade of 700 Lugansk diesel units at Bryansk machine-building plant with the Ministry of Railways. Upgrading sets made in the US to be installed were obsolete diesel engines and control systems. In the very beginning of project discussions, "partners" said: "your fitters are very skilled in loosing and tightening hex nuts". This was in 2003.

Mikhail KHROMOV, former Director General of Transmashholding:

In 2003, we started to move in all the directions at a time – we elaborated the matters of partnership with foreigners, continued gathering plants and thought of building a long-term strategy. It was nothing like: let us gather something and then we'll think of what to do with it. Some purchases were forced. It was the time when plants collapsed one after another – for instance, Penzadizelmash was under the threat of shutdown. This was the only supplier of diesels for Bryansk plant in the country. We bought it in a rush – we allocated all the resources to keep the plant from shutting down. We could not be left without engines; otherwise, we would have been shut down and we had already entered into large-scale programs for locomotive delivery for RZD.

A head-to-head dialogue started in 2004 approximately, when matters of establishing of joint ventures with German Knorr-Bremse, leader in production of braking systems, were addressed. Negotiations were held with other Western manufacturers, too, including General Electric, Bombardier, Hitachi. RZD JSC and Transmassholding addressed the matters of building new-generation electric trains for speed and high-speed traffic. German Siemens also participated in the project. In October 2008, a memorandum of understanding related to strategic partnership was signed with the French machine-building group Alstom Transport.

THESE MEN ARE AS HARD AS NAILS

Initially, when the holding only started its work, the team had a skeleton staff who joined it with Dmitry Georgievich

Komissarov. Later on, he became the chairman of the company board.

Based on tasks, a pool of professionals was formed; for instance, a strong corporate legal department was established when bankruptcy proceeding were on the way and plants were acquired. When co-operation with foreigners started, the investment department was greatly enhanced.

Today, Transmassholding is a company of international renown. It has a powerful production base, strong intellectual potential and a team of skilful specialists. The range of the products made by the holding is enhanced each year. All this has become possible thanks to the people who had faith in the Russian industry a decade ago and managed to revive domestic railway machine building.

Mikhail KHROMOV,
former Director General of Transmashholding:

> During my first half-year at Transmassholding, there was the constant rotation of staff. I even used to be the chief financial officer of the company when it was just established. But it was only two-three months. I think that we simply need to thank the whole team who took part in establishment of the company.

МИНИСТЕРСТВО СВЯЗИ РОССИИ

ТЕЛЕГРАММА

РОССИЯ RUSSIA 2415

Attn: collective of Transmashholding CJSC

Dear colleagues,

On behalf of National Company Kazakhstan Temir Zholy JSC, I would like to congratulate the Transmassholding team on the company tenth anniversary!

Ten years is not much for a transport company. However, over this period, you have not only become the largest rolling stock supplier for the world's biggest railway company Russian Railways JSC, but also proved to be a global leader in railway machine building.

Kazakhstan Temir Zholy and Transmassholding co-operate in development of Kazakh rolling stock manufacture – this is an innovative project for electric locomotive assembly plant construction in Astana.

The joint venture of NC KTZH JSC, Transmassholding CJSC and French ALSTOM Transport – Electric Locomotive Assembly Plant LLP – will meet the demand of this country for these locomotives and will supply electric locomotives to other countries in the long run. Establishment of the electric locomotive assembly plant is an important step in creation of a cluster of railway machine-building plants in Kazakhstan that will contribute to diversification of the country economy.

I sincerely hope that our first joint project will promote further fruitful co-operation of our companies for the benefit of Russia and Kazakhstan.

I wish further prosperity of the company, active development and new achievements to all Transmassholding CJSC employees.

FROM: President of NC Kazakhstan Temir Zholy JSC A. Mamin

SHUKHRAT MAKHMUDOV:

"WE ARE POSITIVE TOWARDS COMPETENCE"

Foto Vladislav Bagno

The basis of the economic potential of any state is the condition of its transport infrastructure. This is due to the fact that GDP is generated thanks to efficient communications. **DEPENDING ON A GEOPOLITICAL LOCATION, THIS OR THAT TRANSPORT MEANS PLAYS A LEADING ROLE. FOR RUSSIA WITH ITS VAST SPACES, CLIMATIC AND TIME ZONES, RAILWAYS ARE THE MOST IMPORTANT TRANSPORT MEANS IMPOSSIBLE TO REPLACE.** In view of the above, the nearest future of Russia will be conditioned by the state of roads and rolling stock. Shukhrat Makhmudov, Chief Commercial Officer of Transmashholding CJSC, is here to dwell upon the outlooks of the Russian transport machine-building industry.

– How would you describe the current conditions on the markets where Transmashholding is present and its positions?

– Development of Russia has been historically supported by the railway infrastructure. Railways are "blood vessels" of this country's economy. 1990s saw the pained structural adjustment of the economy accompanied by destruction of the whole branches of the national economy. This also concerned transport machine-building, when the collapse occurred in the absence of the demand for rolling stock. Now, we are witnessing a certain renaissance: freight traffic is increasing with further load on the transport infrastructure, including railways. There has appeared the demand for the new machinery and advanced locomotives, i.e. our products. The railway fleet of Russia and other CIS countries has been significantly worn over the last 20 years. There is an objective need for its renewal, and today, we are witnessing an increased demand for the whole rolling stock range.

Today, we see active development of the railway service market and, as


ТЕЛЕГРАММА

ATTN: Director General of Transmashholding CJSC A. A. Andreev

Dear Andrey Anatolievich,

I am more than flattered to congratulate you on the 10th anniversary of Transmashholding CJSC on behalf of a several thousand strong collective of railway workers of Uzbekistan and wish all the very best personally.

I am well convinced that traditional friendly relations between our enterprises, trust, mutual understanding and further co-operation will successfully develop for the good of the transport industry.

Let me use this nice opportunity to wish you and the whole collective represented by you further professional achievements, positive settlement of numerous production issues and implementation of promising projects.

FROM: Chairman of the Board, A.D. Ramatov

a consequence, rolling stock market. Traditionally, our consumers are the states with the 1,520 rail gage as well as other countries whose economy was historically related to the USSR. Historically, these are all the states of the former USSR, Finland and Mongolia. In olden times, we were present in Cuba, in certain Asian and African countries.

All in all, products of the enterprises forming a part of the Transmashholding group were in different years delivered to more than 100 countries of the world. Now, we are striving at regaining our presence whenever possible.

In the days of globalization and on the threshold of Russia's forthcoming joining the WTO, we are forced to work in the open market conditions in an open competition with manufacturers from China and South Korea, Europe and USA.

– Who is viewed as the key clients by Transmashholding?

– The main peculiarity of our business is that the state and large primary industry enterprises own the railway transport infrastructure. Apart from that, there exists the market of passenger transportation and urban passenger transport. Owners of the above infrastructure segments are our key clients. In Russia, these are RZD JSC, Moscow, St. Petersburg, Yekaterinburg, Novosibirsk and other metropolitans. Relations with similar enterprises in CIS countries, Bulgaria, Serbia, Syria, Cuba, Mongolia, Finland are very important for the holding. For example, last year, Transmashholding delivered 22 passenger cars and several electric train cars to Kazakh Railways. In late 2011, we signed the contract for supply of 200 electric locomotives with Ukrainian Railways. The holding is also present in other European states. We are now implementing the project for supply of modern rail buses to Serbia.

– What other business activities does Transmashholding perceive as important?

– Manufacture of machinery for urban passenger transportation, specifically – tramways. This is a new and very interesting business segment. One should not forget that Mytishchi plant forming a part of the holding initially produced tramways, and it was only in wartime that this production was relocated to Ust-Katav. It has remained there since then.

Transmashholding is seriously working on the launch of production of advanced low-floor, high-speed and noiseless tramways. Society treats this transport means with a certain prejudice, as in the streets of our cities, one can often see obsolete rattling cars that have been manufactured many years ago. We are planning to completely dispel this stereotype. Our company offers an advanced machine with the average motion speed of 70 km/h. The basic platform that we intend to use enables manufacture of tailor-made tramways. This means that the exterior and interior will be tailored to the customer's needs. In each city where this tramway appears, it has its own image and, thus, becomes a trademark of the city.

> DEVELOPMENT OF RUSSIA HAS BEEN HISTORICALLY SUPPORTED BY THE RAILWAY INFRASTRUCTURE. RAILWAYS ARE "BLOOD VESSELS" OF THIS COUNTRY'S ECONOMY

Another direction of our business is manufacture of diesel engines. Transmashholding is the only Russian manufacturer of low-speed diesels; besides, our enterprises produce a broad range of medium-speed engines – for ship and transport machine-building and power engineering. It is known that the government is actively developing the program for regeneration of the Russian Navy. We hope that our engines will be in demand as a part of its implementation. Transmashholding is implementing a large-scale joint venture project with participation of the German company Tognum that has the world's highest competences as related to diesel development and manufacture. Today, we do not only strive at creating a high-tech smart product, but also at obtaining an advanced basic platform of diesel engines that may be used to create more and more perfect engines in the nearest decades to come.

– How do you interact with your consumers? How do you improve your interaction with Transmashholding partners?

– Our clients are looking for safe and environment-friendly machinery that ensures minimum maintenance costs. These are three basic requirements. To meet them, we introduce more and more advanced solutions and technologies when creating our products. Today, RZD, Moscow metropolitan and subways of other cities are much more attentive to passenger comfort and safety and meeting demands of their key clients. We closely watch the market conditions and offer the relevant equipment. Our joint activities start with elaboration of a technical design assignment and continue to acceptance of an end product. The feedback principle is followed until a testing cycle is completed. We are well aware that creation of such complicated equipment as locomotives implies joint effort of our customers, designers and component suppliers. We promptly respond to all of their observations and offer our own ideas. Sometimes, this "exchange of ideas" is very aggressive – up to two thousand modifications a year are introduced into certain machines.

– Last year, Moscow government disclosed its large-scale plans to develop the city metropolitan. Is Transmashholding taking part in implementation of these initiatives?

– Of course, it is. Quite recently, we have received a large order from the metropolitan. Never in its history has Metrovagonmash manufactured such huge volume of machinery. The confirmed figure for the current year is more than 300 subway cars of a new series, the one that Moscovites have never seen before. Many pleasant surprises have been conceived. New cars are fitted with special-purpose access ramps for the disabled, air decontamination system, air conditioners, advanced noise insulation, and the driver's cabin is equipped with the climate control system. Each door in passenger cabins will open by pushing an individual button. New subway cars supplied to the Moscow metropolitan are the last word in science.

We have so much to do and this work will take several years, as Moscow authorities have very ambitious plans. Other large cities of Russia also have their subways and their own plans for metropolitan upgrade. So, our outlooks are very good.

– How do you see the Transmashholding market position in 10 years?

– Our main task in the long run is to regain the historical markets that we once were present at. The only thing to do it is to ensure stable high quality of our goods and services. There's not other way. Transmashholding acts in the conditions of constant and ever-complicating competitive. I believe it's good. Our competitors keep us from making no headway, they make us move on, conceive and introduce new engineering solutions and new approaches in co-operation with suppliers and consumers. The state of science and production potential help us settle virtually any task however complex.

ТЕЛЕГРАММА

ATTN: collective of Transmashholding CJSC

Dear Andrey Removich and Andrey Anatolievich,

Let me congratulate you and the whole collective of Transmashholding CJSC on its 10th anniversary! Introduction of new activities, bold innovative approaches backed up by deliberateness and reasoning of the decisions made have become a trademark of Transmashholding CJSC.

Belarusian Railway highly appreciates mutually beneficial partnership relations that we have with Transmashholding CJSC. Company products have for many years been in successful operation in our country. It was the Byelorussian trunk railway that in 2006 became one of the first customers of TEP70BS passenger diesel locomotive created at Kolomna Plant JSC. Our experience of operation has played a significant role in improvement of these locomotives.

From year to year, Transmashholding CJSC has ensured high quality of the machinery it produces. Today, it is safe to say that the company will keep on implementing large-scale projects based on its many years' experience, business activity and professional competence. I am confident that the next decades of the company activity will not only strengthen our partnership, but will also open new outlooks of co-operation between the Belarusian Railway and Transmashholding CJSC.

On this high day, let me wish success and insistence in fulfilling the boldest plans, creative inspiration and forward running to you and the whole collective of Transmashholding CJSC.

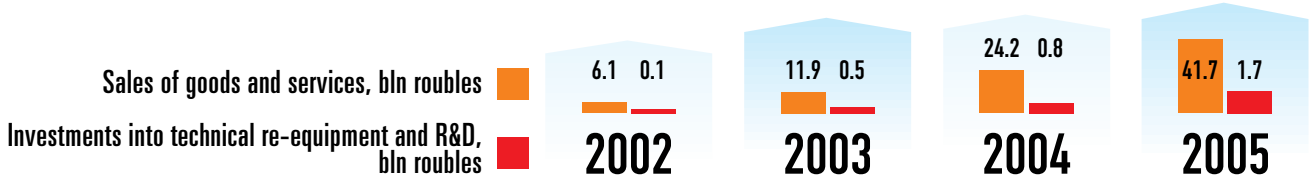
FROM: Head of the Byelorussian Railways, A.A. Sivak

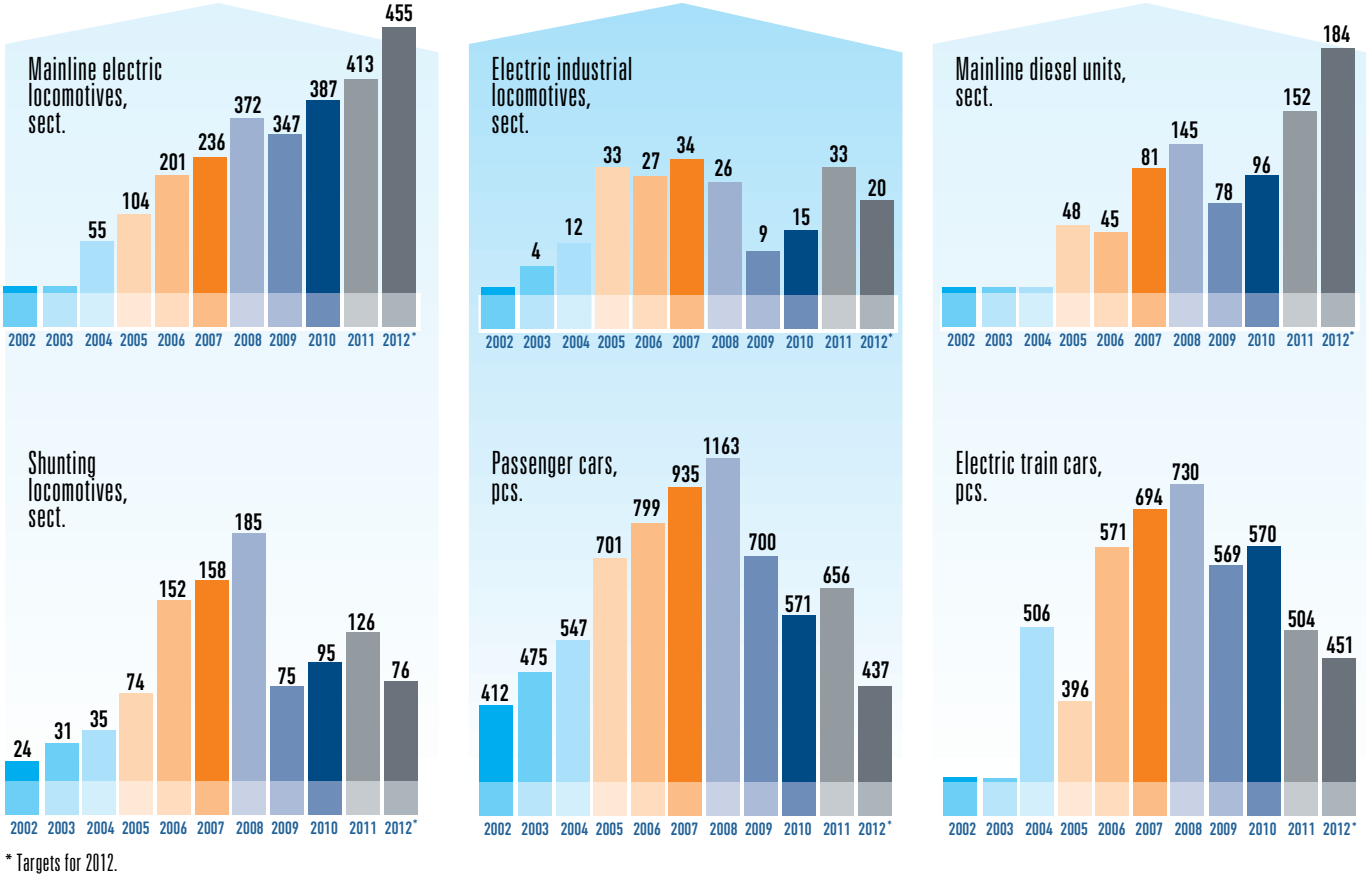
БЧ

Labor management

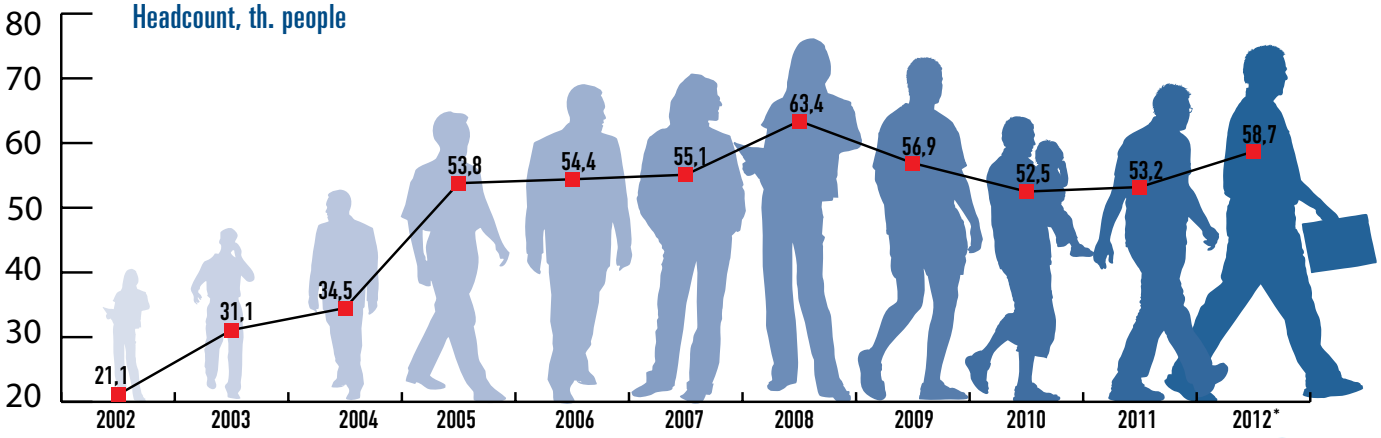
Sometimes, formal figures speak louder than the most wanton speech. In order to understand the scope of company activities over a decade, one has to go deeper into details, review statistics of each year, see the figures that **TRANSMASHHOLDING – PRODUCTION JUGGRENAUT – COMES FROM.**

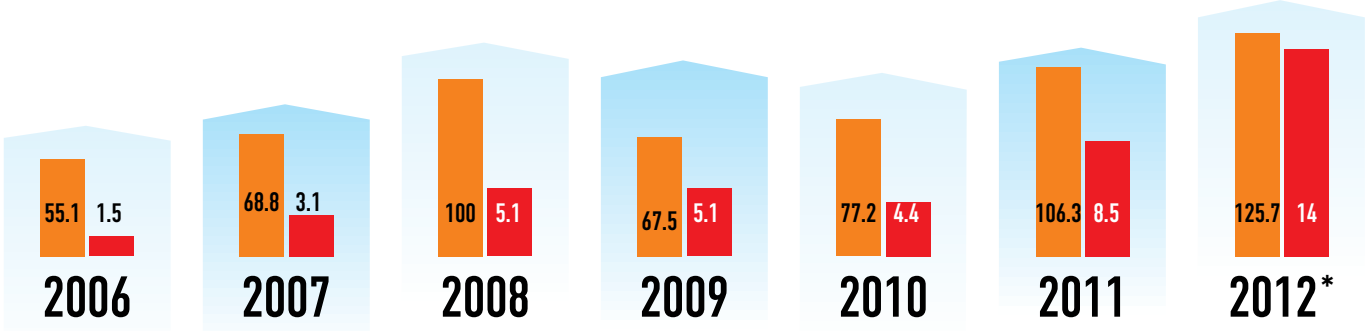
History in detail

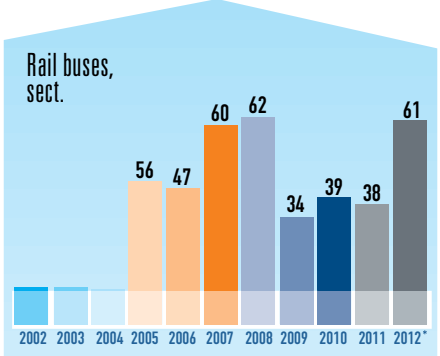


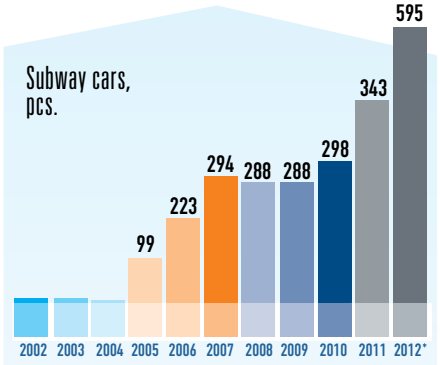


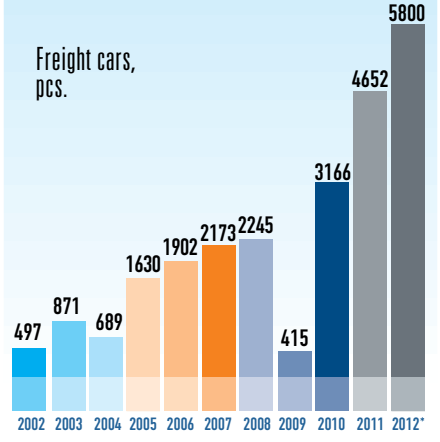
* Targets for 2012.

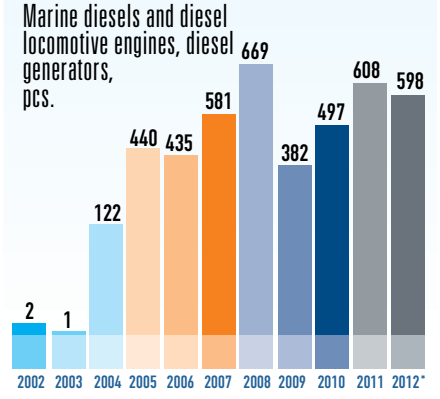

Headcount, th. people
80
70
60
50
40
30
20
21,1
31,1
34,5
53,8
54,4
55,1
63,4
56,9
52,5
53,2
58,7
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012*

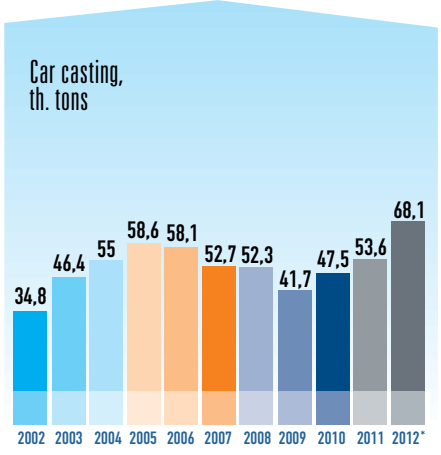

55.1 1.5
2006
68.8 3.1
2007
100 5.1
2008
67.5 5.1
2009
77.2 4.4
2010
106.3 8.5
2011
125.7 14
2012*


Rail buses, sect.
56 47 60 62 34 39 38 61
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012*


Subway cars, pcs.
99 223 294 288 288 298 343 595
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012*


Freight cars, pcs.
497 871 689 1630 1902 2173 2245 415 3166 4652 5800
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012*


Marine diesels and diesel locomotive engines, diesel generators, pcs.
2 1 122 440 435 581 669 382 497 608 598
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012*


Car casting, th. tons
34,8 46,4 55 58,6 58,1 52,7 52,3 41,7 47,5 53,6 68,1
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012*

Our way

2002

81-740/741
metro car

TEP70BS
diesel unit

2004

2TE70
diesel unit

731.2B (RA-B)
regular bus

2ES5K electric
locomotive

2TE25K
diesel unit

2005

RA2
regular bus

EP2K electric
locomotive

2TE5A
diesel unit

2ES4K electric
locomotive


2012
Innovative tram for Moscow
2011
12-3090 open car
61-4483/84 escort railcars
EP20 electric locomotive
DP-S diesel train
2010
TEM18B electric locomotive
2TE116UM diesel unit
Passenger cars for articulated rakes
Вагон метрополитена 81-760/761
2009
TEM-TMH diesel unit
Double-deck passenger car
Dining car
2008
2TE116U diesel unit
Passenger cars of 4400 series
ED4MKM-AERO electric train
EP1P electric locomotive
2007
E5K electric locomotive
EP1M electric locomotive
TEM18DM diesel locomotive
ZES5K electric locomotive

The next

The next decade that passed since establishment of Transmashholding was marked by very significant events in the railway industry related to creation and mastering of different technologies that in general evidenced that the previous period of stagnation was over and that plants returned to their normal activities.

THEIR DESIGN OFFICES MANAGED TO DEVELOP AND PRODUCTION PLANTS MANAGED TO MASTER ALL THE PRODUCTS REQUIRED FOR RAILWAYS.

Now we are facing new challenges – we don't only need to maintain or even develop the production rate, but we also need to create new models, come to a level of advanced railway engineering and create locomotives, cars, electric and diesel trains that would be competitive on the global market.

This task is perceived as particularly important in the light of Russia's forthcoming joining the WTO, when nearly all current economic restrictions on Russian market entry will be removed for railway product manufacturers from all over the world.

Current harmonization of the domestic regulatory framework with the European one promotes application of foreign equipment on the Russian railway market.

However, the maximum effect will be attained in introduction of the new machinery that is currently being developed

Фото – Владислава Багно

Sergey Viktorovich PEROV
Head of the Urban and Suburban Transport Department, Doctor of Science

- his professional career started in June 1980 at a car production facility
- since June 1988, he worked at Mytishchi machine-building plant (presently – METROVAGONMASH JSC), where he occupied the position of the chief designer during the last years
- from October 1996 to 2006, he occupied executive posts in railway machine-building companies: MAGISTRAL Planning and Design Car-Building Office JSC, Transport Machine-Building RPA CJSC, TMH United Car-Building Company CJSC
- he has been working with TMH CJSC since March 22, 2006

decade

or is planned to be developed by TMH designers.

In our opinion, one of the main directions of a gain in performance is enhanced fuel efficiency (or reduced power consumption).

Today, Transmashholding has deployed the program for development of diesel units that implement different principles of increased energy saving, use of diesel engines of the best global manufacturers, multi-diesel schemes, hybrid power units, capacitor starting systems.

A locomotive fitted with two diesels ensures fuel savings due to the fact that only one engine will run for most of the time and it's only when higher power is required that the second one will be activated.

As to fuel saving, it is achieved because, according to measurement data, a diesel runs with the load that does not exceed 50% of power for more than a half of the whole time and in this mode, fuel is spent on own engine needs only. A two-diesel pattern ensures fuel saving because diesel performance gets closer to optimal parameters.

This pattern is good for the locomotives that need to continuously give high power for a long time – for instance, main-line locomotives that drive trains up-hill or at a high speed.

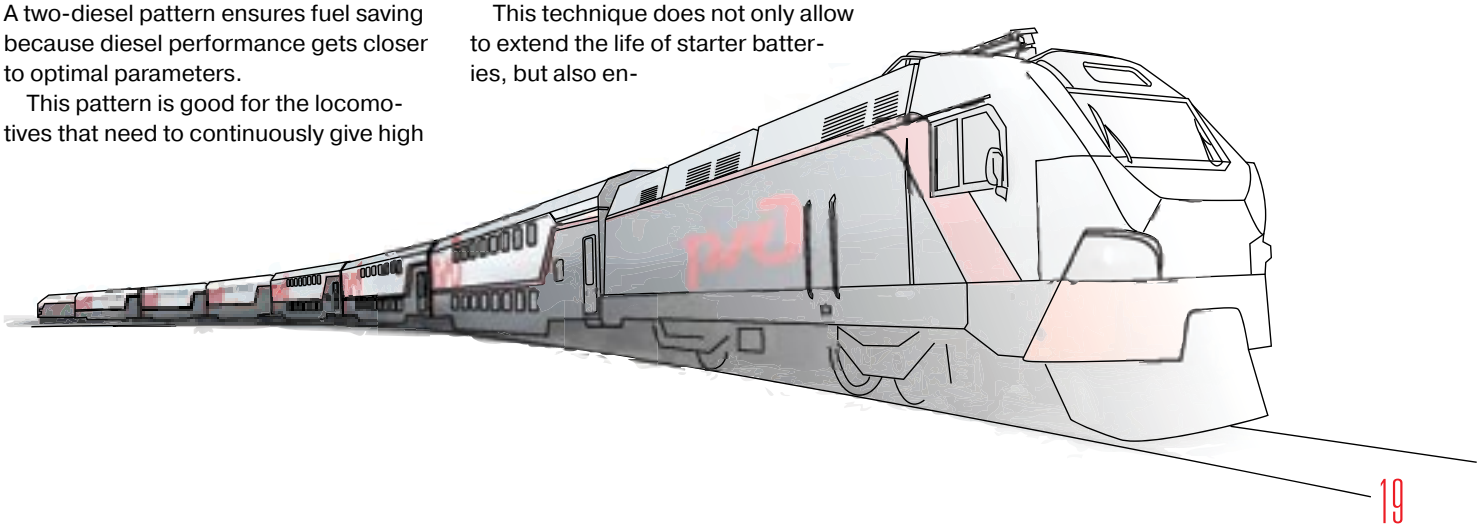
There is a number of shunting locomotive applications when a full thrust is needed only for train getaway or short speed taker-up. In this case, an advantageous scheme is the one with power accumulator, when electrochemical elements ("supercondensers") accumulate the energy from the locomotive diesel generator plant running in the optimal mode in terms of fuel consumption or braking energy. A diesel of relatively low power will be sufficient to run a locomotive.

These patterns of the rational use of power units will not only enable fuel savings by 30-40%, but will also halve the amount of hazardous emissions.

Capacitor starting systems will ensure steady start of diesels with no concerns about accumulator discharge thanks to energy accumulation in special-purpose condensers.

This technique does not only allow to extend the life of starter batteries, but also ensures fuel saving through the reduction of diesel idle run time, as the condensing system is able to ensure reliable diesel start at any moment, whenever its operation is needed.

Another direction of technical improvement of manufactured locomotives and electric trains is the application of asynchronous traction drives. Transmashholding has been engaged in serial production of only subway cars using asynchronous traction drives over the last decade. However, 2006 saw the launch of production of mainline locomotives with ATD (2TE25A). Development of the two-system electric passenger locomotive – EP20 is coming to its end, whereas development of 2ES5 electric freight locomotive is under way. Apart from their high economic feasibility, asynchronous drives allow to decrease the scope of maintenance, increase power and moment of traction engines with the same dimensions.



Promising look of a domestic diesel train

We are confident that in ten years, this drive type will completely replace commutator motor-based drives from the equipment we manufacture. Moreover, high-powered passenger locomotives, speed and high-speed electric trains will start using drives based on traction permanent-magnet motors that have not yet been mastered by domestic transport machine-builders, which will further decrease maintenance costs and increase power.

EP20 – leading project of the program for creation of fifth-generation electric locomotives

Savings for the companies that use our products will also be ensured due to reduced costs on engine crews.

Subway cars have long been released with driver control only. Now, locomotive and diesel rolling stock control systems are also developed with due regard to assurance of safe driving by one person.

Besides, proposals are being developed for application of fully automatically controlled trains, so far – only in the subway. In all appearance, railways will not yet be ready for this revolutionary step in a decade to come. However, works will be performed to prepare a rolling stock to its full automation – depth and scope of diagnosis will be developed with transfer of data on the rolling stock condition to control points, positioning and auto driving systems will be integrated with a possibility of remote intervention into motion parameters, so far – only in order to ensure maximum safety.

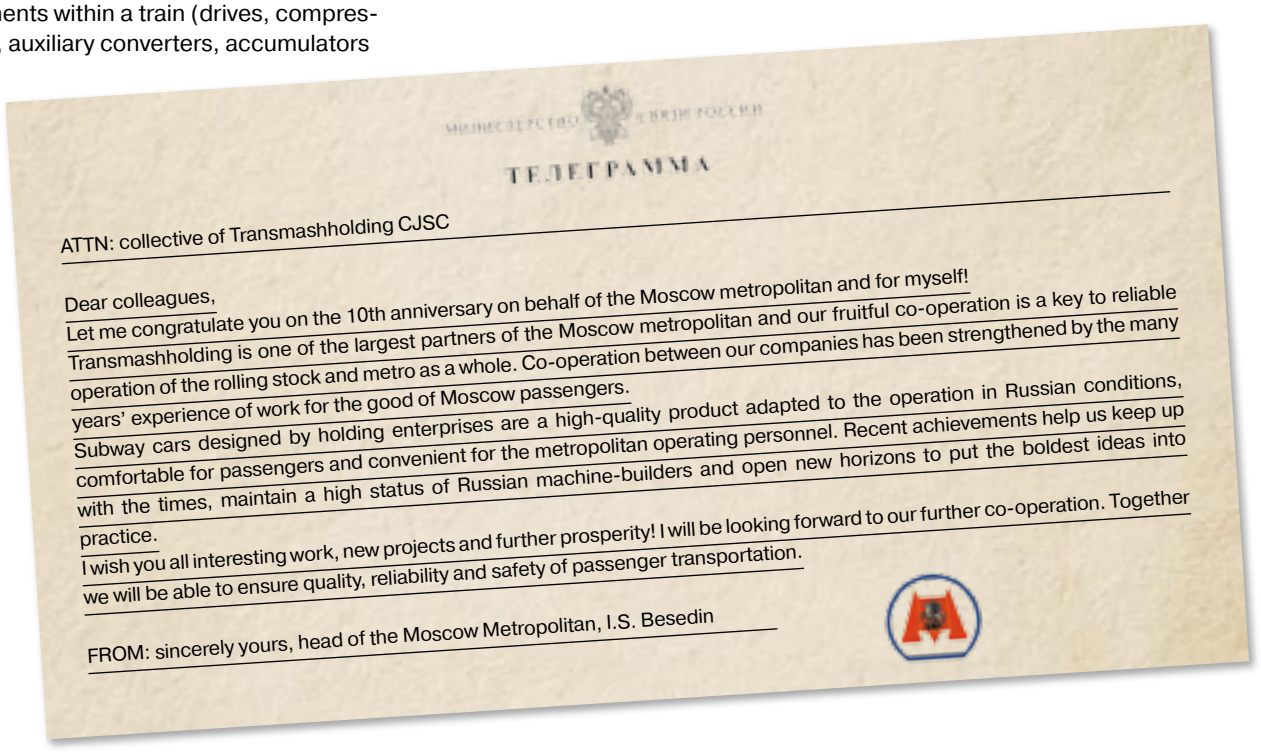
Current introduction of low-maintenance electronic systems instead of contact and relay systems, detailed diagnosis being developed, automated data collection and transfer will have to greatly increase the rolling stock technical preparedness factor, reduce the likelihood of unexpected defects, save costs on unscheduled repair and, in general, affect reduction in the lifecycle cost of the machinery produced despite its significant complication and appreciation. Enhanced reliability of drives will enable implementation of the solutions that have been developed long ago, but have not been implemented so far because of a low reliability level. What is meant here is abandoning the idea of full car unification in a train when making up multiple-unit train, when a train is made up by way of connec-

2ES5 – brand new AC electric freight locomotive

tion of either the trains of the same design (domestic metropolitan) or the same two-car sets (electric trains).

Multiple redundancy of the same elements within a train (drives, compressors, auxiliary converters, accumulators and other devices) results both in train appreciation as a whole and, curiously enough, decrease in certain reliability parameters (increased likelihood of failure of one of multiple devices), increased maintenance and repair costs.

Shift to the system of articulated rakes with reasonable redundancy of vital



ТЕЛЕГРАММА

ATTN: collective of Transmashholding CJSC

Dear colleagues,

Let me congratulate you on the 10th anniversary on behalf of the Moscow metropolitan and for myself!

Transmashholding is one of the largest partners of the Moscow metropolitan and our fruitful co-operation is a key to reliable operation of the rolling stock and metro as a whole. Co-operation between our companies has been strengthened by the many years' experience of work for the good of Moscow passengers.

Subway cars designed by holding enterprises are a high-quality product adapted to the operation in Russian conditions, comfortable for passengers and convenient for the metropolitan operating personnel. Recent achievements help us keep up with the times, maintain a high status of Russian machine-builders and open new horizons to put the boldest ideas into practice.

I wish you all interesting work, new projects and further prosperity! I will be looking forward to our further co-operation. Together we will be able to ensure quality, reliability and safety of passenger transportation.

FROM: sincerely yours, head of the Moscow Metropolitan, I.S. Besedin

This is the way designers see future electric train ED10

devices, reduction in the single-type rolling stock equipment will ensure decreased cost of the rolling stock and its maintenance and repair costs.

Speaking about passenger transport, one may not ignore upcoming changes in approaches to assurance of passenger transportation conditions.

The overall trend of passenger transport development that will be reflected in the new domestic passenger machinery in the nearest decade implies more exact compliance with clients' requests, increased capacity, traffic speed and safety.

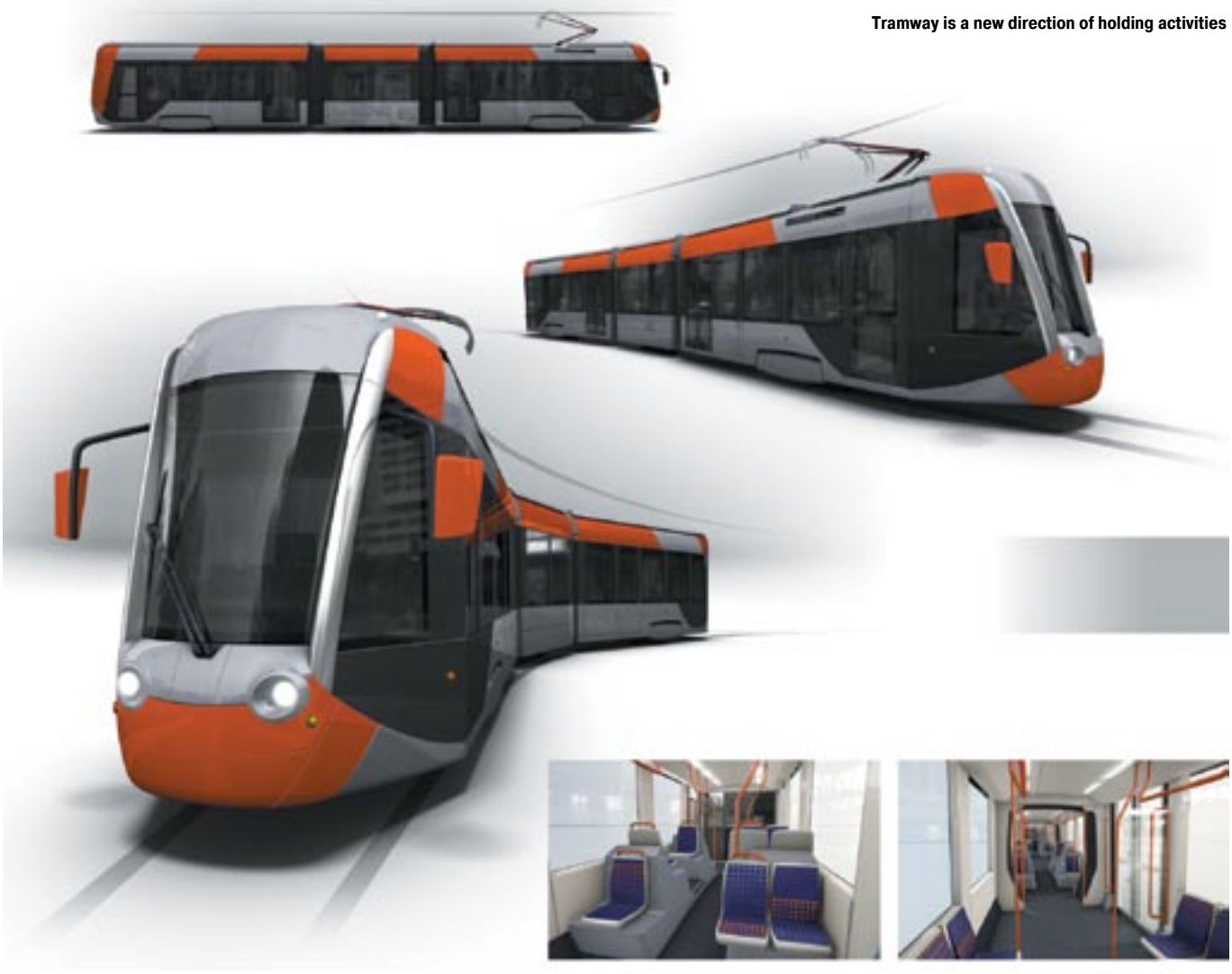
It is recognized that the overall level of comfort in all passenger railway transport means is growing, which is reflected in the developed standards for the passenger rolling stock. For instance, all passenger cabins must now be fitted with air conditioners and access for wheelchairs and baby carriages must be ensured for all trains. Now, all the newly developed machinery will have all the above features.

Passenger cars and electric trains will appear that are dramatically different from all those available on the Russian market – of double-deck design.

A prototype of a passenger double-deck car developed by TVZ has already been displayed at Exporail exhibition in Shcherbinka in 2009. These cars have already been brought into production.

Based on tried-and-true designs, designers are developing an interregional electric train with double-deck cars and head traction sections fitted with an asynchronous drive. This will

Tramway is a new direction of holding activities



Double-deck cars will be introduced to the Russian railways in 2013

result in creation of a passenger electric train of high capacity due to the double-deck design, while a high power-to-weight ratio of sections will ensure the speed up to 160 km/h with acceleration of 0.55/0.65 m/s2.

Preparatory works currently performed by the state related to development of speed traffic and introduction of high-speed traffic will have to lead to appearance of passenger electric trains in Russia that make over 300 km/h.

The main trend of current development – increased scope of information services – will also continue.

The scope of the information provided to passengers will grow – information on the route, motion parameters, stops, travel time and other relevant information, including interactively. Passengers will be able to enjoy both mobile communication and Internet access in all transport means. Currently, Wi-Fi network may be tuned even in subway cars. TMH is performing experimental works in this direction. Most probably, these works will yield positive results.

Many works have become possible thanks to Transmashholding co-operation with its strategic partner – French Alstom that has already mastered asynchronous drives and permanent-magnet motors, train automatic driving systems and improved diagnosis systems. The company is a global technological leader in the area of high-speed running; it has achieved a world speed record of a train running on rails – the AGV electric train developed by Alstom has reached the speed of 574.8 km/h, whereas its route speed is 360 km/h.

TRTrans engineering company created by our companies is engaged in development of new rolling stock types with due regard to the best Alstom and TMH solutions.

Apart from joint activities related to the railway transport traditional for TMH, we count on successful settlement of a task for creation and development of a tramway, a new transport means for TMH. This transport will be significantly different from what we see in Russian cities. It will be of a completely low-floor design. There will not be a single step in its compartments. This solution guarantees utmost control for passengers, including old people, children and disabled and provides benefits to operators. Due do its large capacity and the absence of stairs, the tramway is able to provide for quick passenger loading and unloading, whereas its significant power-to-weight ratio allows to pick up speed over a short period and keep it at a high level on the route. This results in a significant (1.5–2 times) increase in car lines carrying capacity.

We expect that the engagement of other technologically developed engine building companies – MTU, Wartsila, GE, diesel train builders – Stadler and many other world-known manufacturers of innovative equipment will help us create and master the production of a rolling stock that meets the boldest demands of our clients.

2005. A.A. Andreyev is showing a PA2 (RA2) railbus to President Vladimir Putin

2010. A.A. Andreyev is signing an agreement with Wärtsilä for establishment of a joint venture for diesel engine production

2008. First ЭП2Л (EP2L) electric locomotives arrive at the Barabinsk depot

2005. The Kolomna plant presents its own main-line diesel freight locomotive 2ТЭ70 (2TE70)

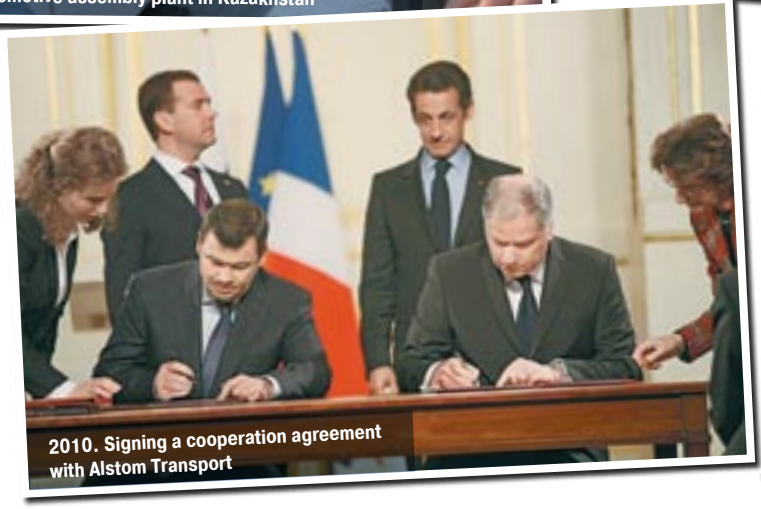
2009. V.N. Morozov, Vice-President of the Russian Railways, inspects a brand new coach for the service staff of the train

2011. President of Russia D. A. Medvedev holds a meeting at «Metrowagonmash» in Moscow Region

2010. Laying the foundation of the electric locomotive assembly plant in Kazakhstan

2011. Joint venture agreement signed with Tognum

2006. 2ЭС4К (2ES4K) electric locomotive presentation



2010. Signing a cooperation agreement with Alstom Transport

2009. A double-deck coach is presented to public

TRANSMASHHOLDING

PRODUCTS AND SERVICES OF THE HOLDING:

- mainline and industrial electric locomotives;
- mainline and shunting diesel locomotives;
- freight and passenger cars;
- electric train and subway cars;
- railbuses and diesel trains;
- car casting;
- diesel locomotive engines and marine diesels;
- diesel generators and turbine compressors;
- transport components;
- spare parts;
- repair and service maintenance

OVER THE LAST FIVE YEARS, THE COMPANY HAS PRODUCED:

Over **3,000** locomotives

Over **4,000** passenger cars

Over **3,000** electric train cars

Over **230** railbus cars

Over **1,500** subway cars

Over **2,700** diesels

- Transmashholding is **№ 1 1 IN CIS COUNTRIES** in terms of the volume of rolling stock production and sales
- Transmashholding is among **WORLD'S TOP TEN LEADING MANUFACTURERS** of railway equipment
- Transmashholding is **THE ONLY RUSSIAN COMPANY** to have experience in creation and manufacture of the machinery, designed specially for operation in arctic conditions
- Transmashholding machinery is operated **IN ALL CLIMATIC REGIONS OF THE EARTH**

POSTAL ADDRESS:
Russia, 127055, Moscow,
Butyrsky Val, 26, bld. 1
TELEPHONE: +7 (495) 744-70-93; FAX: +7 (495) 744-70-94; E-MAIL: info@tmholding.ru
www.tmholding.ru