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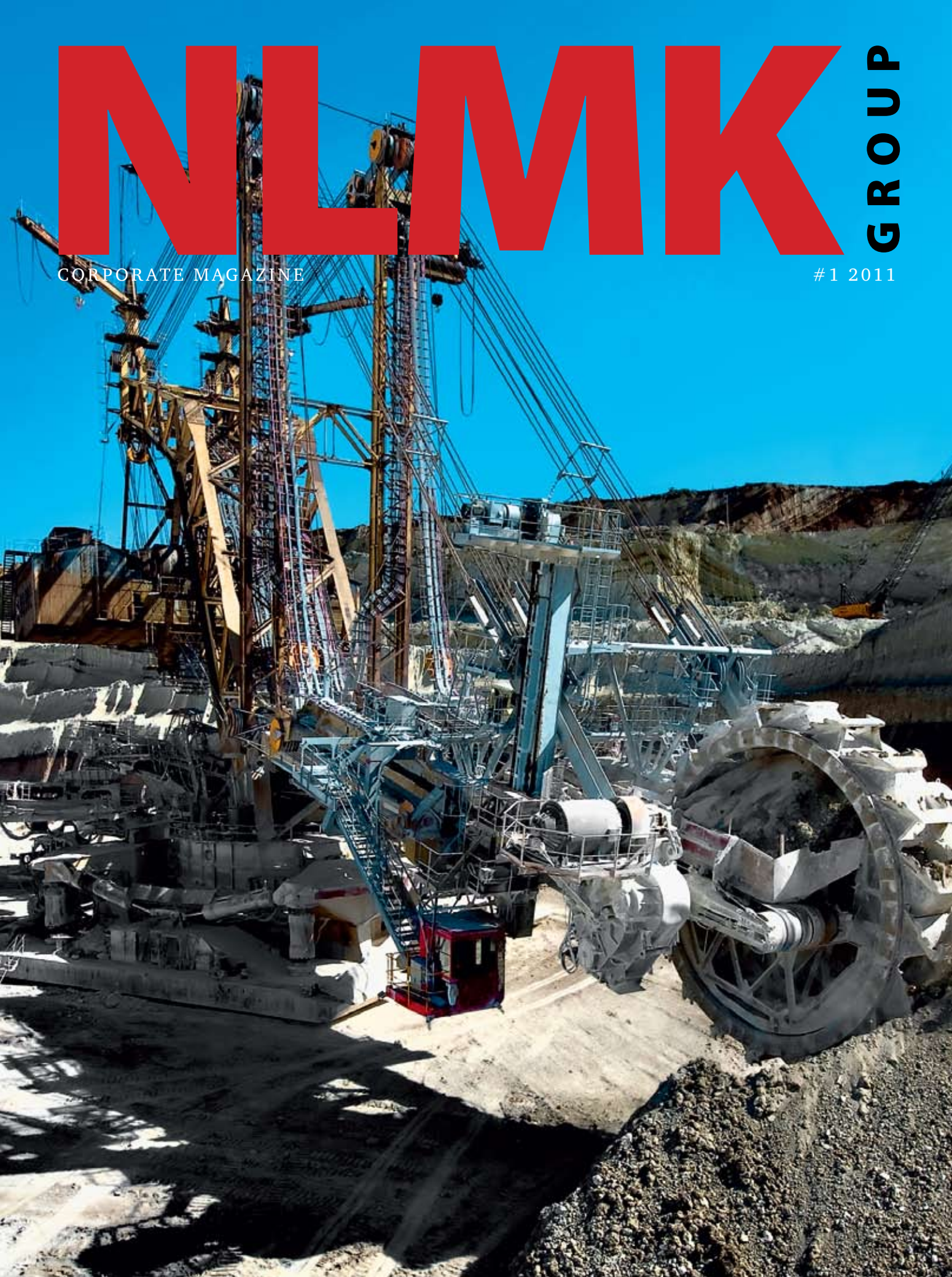


To Manage is to Delegate

Igor Anisimov's appointment to NLMK Senior Vice President – General Director caused a lot of buzz in the business world. In today's interview with the former Vice President for Technical Upgrading and Construction we are going to talk about the future of Novolipetsk, but also about the personality of the new manager, gaining a better insight into why he is best-suited for this particular job at this particular time.

Mr Anisimov, what are your thoughts and feelings about taking the helm at one of the most advanced and efficient Russian steelmaking companies? Are you worried? Overwhelmed by the burden of responsibility?..

– I am not worried. About the great responsibility you are right, of course. But once you pledge, don't hedge. There is a huge amount of work to be done, and I have to be up to it. I know there will be challenges along the way, not everything is going to go smoothly, problems are bound to arise but I am not afraid of them. In fact, it's a great opportunity for me to prove myself. NLMK has an excellent team, a lot of qualified specialists, and I am counting on their support. I believe that together we can do it.

Enhancing production efficiency will help us maintain our leadership in the industry

Did this new appointment come as a surprise?

– To tell you the truth, yes. It was never a goal in itself for me to head the company, I was just trying to do my best at my job. The decision to appoint me to this position was made at NLMK's Meeting of the Board of Directors, and I will do everything in my power to live up to the expectations of my colleagues.

What do you think about your predecessors? What management methods would you like to adopt?

– I have a great deal of respect for them. I was lucky to work side by side with Ivan Frantseniuk and Vladimir Nastich. Hard work, excellent knowledge of operations and a commitment to continuous development was what made them great managers. They were incredibly meticulous and would never stop pushing forward. Reliability was another great feature they shared. Unfortunately, for some managers it is hardly a valued business quality any longer. They make lots of promises but fail to truly follow up. So one only appears to be managing, whereas in fact he is a mere observer. His heart is not with the business. Things should get done, it's that simple. Of course, we are going to keep as much of the good passed on to us from the previous generations of steelmakers as possible. And we are going to build on it. We need to keep up with the times. We need to double, even triple our efforts to cut operational costs, improve quality and increase labor efficiency.

Enhancing production efficiency will help us maintain our leadership in the industry.

Are you happy with the 2010 results that the Company completed under your management?

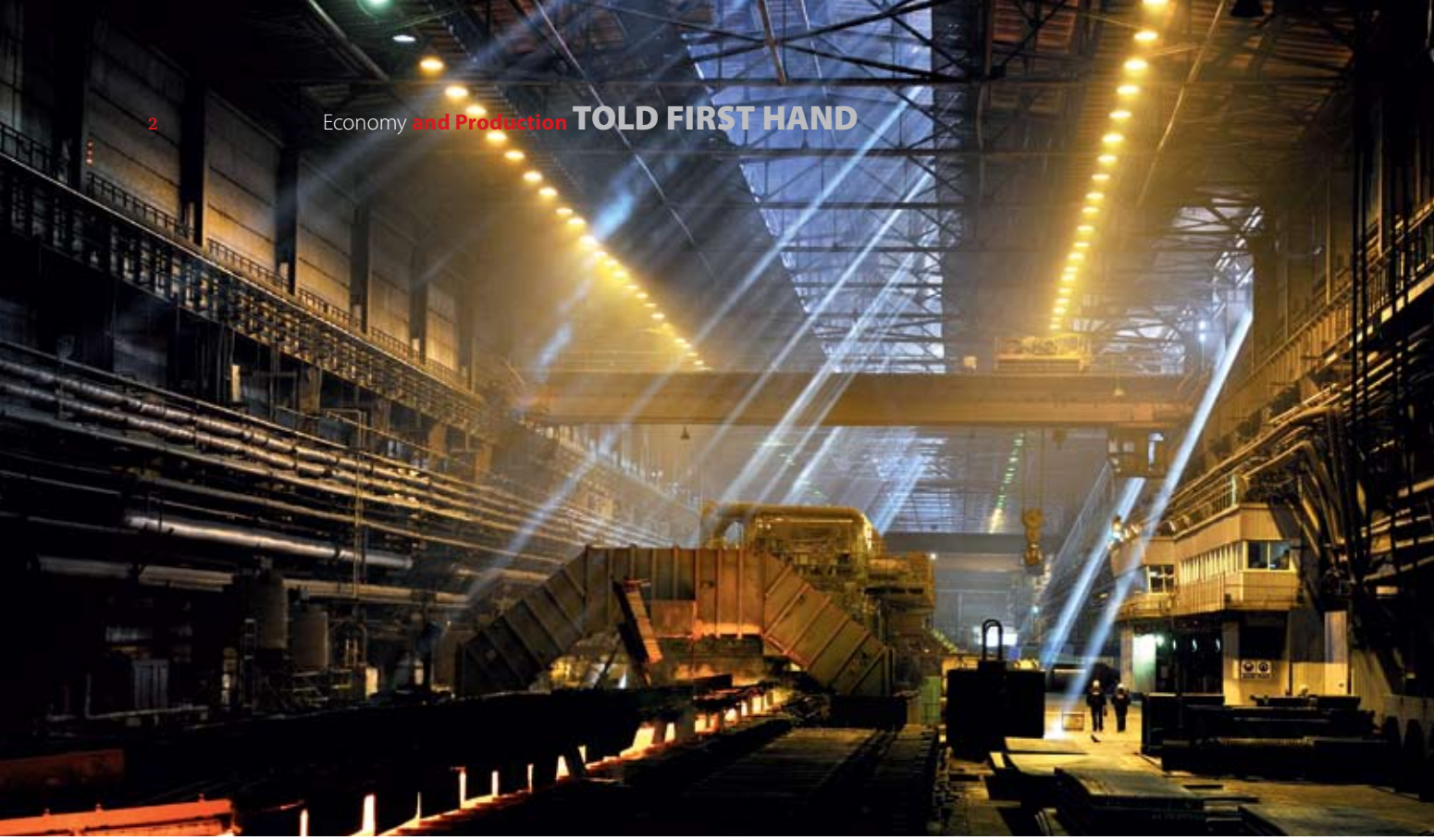
– There are no reasons to be unhappy – we've posted sequential improvements across the board. Steel, pig iron and finished product output increased by 9%, slab output was up 11% and flat steel – 8%. NLMK's share in tax contributions to the Lipetsk region consolidated budget was around 30%.

What has been done as part of the Technical Upgrade Program? Can you name some large projects?

– Investments into Novolipetsk development are estimated at RUR34 bn (~USD1183 million), one of the largest in the industry. We have commissioned 69 capex projects, including 10 under the Technical Upgrade Program. Our readers are already familiar with many of these, so I'll just name a few. We've upgraded the gas exhaust ducts at BOF Mill #1, installed two new ladle furnaces at BOF Mill #2, and launched the third color-coating line and a reverse mill at the Electrical Steel Production plant.

What's in store for 2011?

– This year's goals are even more ambitious. We are planning to launch



over 80 facilities, including 21 as part of the Technical Upgrade Program. We are preparing for one of the key events in Novolipetsk history - the commissioning of Blast Furnace #7, as well as a new Blast Oxygen Furnace in BOF Mill #2. It's going to be the first blast furnace to be built in post-Soviet Russia. As a result, steel output at the main production site will increase to 12.4 m t (or by 40%). To launch BF-7 we will have to build 20 km of autoroutes, 33.6 km of railways, 66.4 km of pipelines, and assemble 75 000 tonnes of steel constructions and 20 000 tonnes of equipment. These figures speak for themselves.

I've always been lucky when it came to my teachers and bosses, people I've had to work with and learn from

Alongside BF-7 we are going to launch a new Utilization Heat & Power Plant which is going to operate on blast furnace gas. We are also commissioning a new two-position RH degassed, the upgraded Continuous Casting Machine #8, etc.

This is all very impressive. Are you satisfied with the results?

– Satisfied? As in content? I try not to fall into that. Being content for me is in line with laziness. When one feels he has everything figured out, everything is set and he no longer needs to make an effort. Thankfully I don't feel content. Otherwise it would be the time for me to retire. The Company needs proactive, willful and searching individuals.

They say new lords, new laws. Would you say that's true for you?

– I am true to my way of doing things. Now whether it will be perceived as old, or new, that's not for me to judge. Honest work is what I ask of all my employees. Irrespective of your position, you must deliver at the top of your performance and on time. I will most definitely not close my eyes to violations and mishaps. I am lucky to be working with great professionals and I count on their understanding and support.

It's common knowledge that one's character is rooted in a person's biography. Tell us about yours.

– Nothing out of the ordinary. I was born in Kazakhstan. My persecuted grandfather was exiled there in1937 from the village of Peski in the Voronezh region. My father was ten at the time. It wasn't an easy time for my family, struggling to survive in this foreign land. But for me this country became a home. I finished school in Kazakhstan, and got my first job experience there working as a mechanic at a garage. After serving in the army, I went on to study law at the Karaganda State University. And I graduated with merit.

Why did you move to Russia?

– We moved after my son was born. This coincided with the irrevocable collapse of the Soviet Union and turmoil across the ex-republics. Kazakh was introduced as the state language, and Russian was oppressed. I did not see a future for my son in this country. I was convinced that he needed to be growing up in a Russian-speaking environment and made the extremely difficult decision to move to Russia. Nonetheless, I am grateful to Kazakhstan for taking in my grandfather's family during the times of trouble and helping it survive. I still have a lot of Kazakh friends that I am excited to see every time we have the chance. Kazakhstan was a home to over 100 different nationalities during the Soviet times. I remember having Greek, German, Azerbadzhan, Chechen, Korean, Armenian, Georgian, Tatar friends in my childhood, besides

Kazakhs, not to mention Russians and Ukrainians. Unquestionable respect for my parents and seniors in general is what I inherited from the Kazakh culture. It's become a part of my nature. In this sense, you could say I am an Eastern man.

So, you could say you came back to your historical homeland. What did it have in store for you?

– At first it was extremely hard, moving from one rented place to another with a small kid. I tried looking for jobs in Moscow, Voronezh, but eventually opted for Lipetsk. First of all, I fell in love with the city, and secondly, just like Karaganda, it had a steelmaking plant, something I was somewhat familiar with. So I joined NLMK in 1995, as an engineer for Stinol. I was later promoted to Equipment Department Head, Purchasing Director, Vice-President for Purchases, and more recently - Vice-President for Technical Upgrade and Construction.

Hard work is not a punishment, it's one's obligation

You were appointed NLMK's Director General at the age of 45. There was a lot of commotion in the press about your impressive career leap. How would you explain it? Luck?

– Good luck takes hard work, as they say. I've always been lucky when it came to my teachers and bosses, people I've had to work with and learn from. Trainers, team leaders, managers, I've always had the best of the best, excellent professionals that had more than skills to share. They taught me how to live, gave me the opportunity to think for myself and act.

Who played the biggest role in your life?

– My parents. They were never looking for detours, always had a straight path in life. They put heart into everything they did and people respected them for it. They not only gave me life, they showed me the right way to follow, gave me the values and priorities I live by. All the greatest things I have are from them and thanks to them. My mom, Nadezhda, lives in Lipetsk. She will be 80 this year. Every chance I get, I take my grandkids there for a visit (I have two children, Vladislav and Anastasia). It's a treat for everyone. My dad, Nikolay, has sadly passed away. He is buried in Kazakhstan, and every year I go to visit his grave.

How do you go about tackling the challenges life throws at you? Have you ever had any regrets about the career path you chose to take?

– I've had to face a lot of challenges, but then again, who hasn't? How I went about tackling them? It's not rocket science, you just have to grin and bear. Act like a man, no whining. When you really want something, you look for ways, if you don't, you look for excuses. As to the choices I've made, I am not one to look back. I find it counterproductive. You can't undo what's been done. We must focus on the present, and the future, never the past. But it is important to learn from past mistakes.

On the other hand, if I didn't like what I do I would have changed my profession a long time ago. What's the point in suffering oneself and making others suffer. That's not my style.

In your opinion, what qualities are the most important in a modern manager? Modesty perhaps, or something else?

– Chekhov once said of modesty that it is only good in a person if he has no other talents. Seriously, though, modesty is important, but I would say efficiency is the key quality. They say that a man is like fire. You need a match to start it, but you need wood to keep the flame alive. A man is inspired by words, but they are nothing without actions. Imagine you kept striking matches but brought no wood. Inspiration would fade, the person would grow disappointed, and then you'd need much more to set him on fire again. Actions and actions yet again. If we keep whining, looking for excuses, complaining that there is something in the way, that nothing depends on us, that nothing can be done, my bet is nothing would ever work out. We need to look at things differently, to set ambitious goals and achieve them. This is how it's done at NLMK.

Would you characterize your management style as authoritarian?

– No, I don't think so. My rule is: "To manage is to delegate." And if you delegate, you are the one responsible. The problem is there is a whole generation of managers that shy away from responsibility, that prefer to observe and not get involved.

Responsibility is tied to authority. If you don't have responsibility, you don't have authority. A manager that doesn't act, that doesn't make critical choices is not a manager.

What do you value most in people? And what do you find repulsive?

– The most important quality for me is honesty. I hate dishonesty, when someone looks you in the eyes and says one thing, and then turns away and does the direct opposite. I respect people that respect their word. I've come across many people that were great talkers, really smart, but that were incapable of delivering. There was nothing behind their words, it was all about appearance. For me the important thing is to be, not seem to be. Envy is another quality I dislike. Although there are two types of envy, white and black. White envy pushes one to reach out for more, to become better, whereas black envy is poisonous. That's what I find unacceptable – when you thrive at the expense of others. That's not Christian-like.

Are you religious?

– I am not a Church-goer but I was baptized, perhaps even twice. There are several stories on this that run in our family. My parents never baptized me, but my grannies could have, they were very religious. In Lipetsk I got baptized myself to put an end to these doubts. I am not

really religious but I do abide by the *Treat people the way you want to be treated* principle.

What are your most colorful memories?

– Childhood memories, of course. The river, spring floods, ice rafting, football, hockey, friends. In school I was doing a lot of sambo and judo, and by graduation I had become a master of sports. I travelled all around the USSR with the Kazakhstan national team. In the army I took up parachute jumping. These memories are always with me, of course. And then the university years. Studying during the day, working the nights. I took odd jobs as a trainer, as a security guard at a school. And I had a great student's allowance.

What's usually on your mind when you are on your own? Would you say you are prone to introspection?

– No, not really. To tell you the truth, I am not a big fan of delving into thoughts and feelings. I simply don't have the time. Work and family take up most of it. It's not that often that I get the luxury of being alone.

Then let me rephrase my question – are you tired of people?

– No, not at all. Just the opposite, in fact. Every year I find myself more and more drawn to people. They say every man is a universe. And communicating with others is a great way to discover whole new worlds. It can become overwhelming, but that's another story.

Have you ever had to make unpleasant decisions? Why?

– Well, of course. Many times. That's the natural way to react to violations of established procedures. It's not an elementary school we are talking about – though even there kids get punished for misbehavior – but an incredibly complex steelmaking production, where any error can lead to severe damages. Punishing people is never fun, but I have no choice.

Some managers pretend to hold monopoly of the truth. They can't tolerate criticism. Can you?

– I am open to criticism, it's a great opportunity to see the situation from a different angle, a sort of reality check. The only man who never makes a mistake is the man who never does anything. If the criticism is constructive, I always take it into account. But if someone criticizes me just for the sake of criticizing, without suggesting any alternative solutions, I try to ignore it.

What is your greatest achievement?

– I would have to say my family, my children. I am incredibly grateful to my wife, Svetlana, for keeping the household, raising our kids. Unfortunately, I am not at home enough to see my children grow. But my wife has been able to teach them to respect what I do, my values in life. And I feel absolutely happy when I come back home late in the evening and my whole family is there waiting for me.

Do you have any bad habits? How do you fight them?

– What do you mean by bad habits? I don't smoke, I am not a drinker, although I can sometimes allow myself to relax a little bit with friends, or on holidays. I can sometimes overreact to things, but that's more of a character trait than a habit. I try to control my emotions, but sometimes I can let go, and then regret it. Sometimes it's better to be more delicate with people.

Based on your experience, what would your advice be to the young just starting out on their paths in life?

– The young tend to want everything at once. But that's not how it works. Respect, success, they don't just come by, they need to be earned. Hard work is not a punishment, it's one's obligation. Being a nice guy is not a profession. The only way to realize one's potential is through work. Like they say: "Live as if it were our last day, and work as if you had eternity before you."

Drive Belt of Innovation

"Our on-site research and development institution" is how VIZ-Stal's Central Laboratory is referred to within the company. It may sound like they're joking, but it's a fairly true representation of reality. While applied science may have disappeared in Russia during the reform period, at VIZ-Stal it was both preserved and received a new impetus for development. As a result today the business is successfully addressing the technological challenges posed by the introduction of new customer-driven products.

Spearheading the Breakthroughs

Let's begin with some background. The Central Laboratory was established at the factory in 1931. It became the country's first research facility to be maintained by an industrial business. Four years later it effectively completed its task of introducing the manufacturing of electrical steel, which the Soviet Union would previously import from other countries. By comparison, in its time it took Germany 30 years to launch production of high quality transformer (grain-oriented) grade steel.

The research facility at VIZ-Stal contributed to technological breakthroughs in a number of industries of the Soviet economy. Thus, in 1940 it designed the vacuum electrical furnace, which would produce steel with outstanding magnetic properties, making it possible to launch the manufacturing of Soviet Union's first audio recording machines.

With the beginning of the Great Patriotic War in 1941 the laboratory expedited the development of technology for the production of some 100 grades of specialty steel. Already in the winter of the same year VIZ-Stal was producing the required amount of steel for tank and aircraft armor, for telephones and machine guns.

In 1947 the business began using its regular duomills to manufacture exceptionally thin 0.1 millimetre gauge transformer steel, encouraging the mass manufacturing of TV sets in the country. And in the 1950s VIZ-Stal pioneered the use by domestic steelmakers of high-temperature vacuum annealing, prompting a 30-40% improvement in the electromagnetic properties of transformer steel.

After the commissioning of the Cold Rolling Mill the laboratory focused on the development of technology for making cold-rolled electrical steel. Also, the Central Laboratory assisted in the design of the world steel industry's first water treatment system based on recirculation. Similar systems were introduced in the United States 20 years later. The shift to a closed-circuit water circulation system ensured the environmental safety of the production facility located on the shore of the Verkh-Isset pond, the main source of potable water for the city of Yekaterinburg. A group of company employees was awarded the USSR National Prize for this achievement.

Priority and Authority

Today VIZ-Stal researchers continue their breakthrough research, helping expand the uses for steel manufactured by VIZ-Stal, which is now used in building power generation equipment, in the defence and atomic industries, and even in experiments in nuclear physics. For example, pre-accelerator magnet pole tips for the hadron collider are made of steel produced by VIZ-Stal.

Consumers of transformer steel today impose much more stringent quality requirements. And VIZ-Stal researchers are working hard to respond quickly to these challenges.

"In cooperation with the Cold Rolling Mill our laboratory was able to significantly improve the magnetic properties of transformer steel," says Mikhail Lobanov, Head of the Central Laboratory with a Ph.D. in technology. "As a result, 95% of the steel we produce is in the 3408 and 3409 premium grade segments. This was achieved by adjusting the hot-rolling settings at Novolipetsk, done through joint efforts of our researchers and Novolipetsk specialists, through improved decarbonizing of steel and several other measures."

The findings of in-house research into improved flatness of transformer steel were used in the upgrading

MIKHAIL LOBANOV, HEAD OF CENTRAL LABORATORY

VALERY SHELOMKOV, LEADING ENGINEER AT THE CENTRAL LABORATORY

of annealed straightening machines. In 2010 more than 84% of steel produced was in the grade one nonflatness category, which is about 10% more than in 2009.

We also saw a significant increase in the production of transformer steel with high ratio of electrical resistance of the insulation coating, and again this was achieved through the strong efforts of the researchers at the Central Laboratory. They have also done a lot to improve the quality of steel strip surfaces. As a result in 2010 about 83% of all steel produced was in the grade one and grade two categories.

Another important development mentioned by Mr. Lobanov was the upgrading of the annealed straightening machine #7. With the active involvement of the Central Laboratory it was equipped with a unique device for measuring magnetism, or a "3-in-1" as it was dubbed at the company. It can measure the magnetic properties, thickness and the insulation coating's electrical resistance on the go, i.e. continuously along the whole length of the coil. This device helps assure consumers that the steel is fully compliant with the properties indicated in the certificate.

In-house researchers are focusing their main efforts on issues related to the manufacturing of high permeability steel, HPS. This project was launched by VIZ-Stal four years ago and the technical upgrade program for the business was designed with this purpose in mind.

"In terms of the sequence of processes, we have a clear understanding of how HPS manufacturing works," says Mikhail Lobanov. "We are now finalizing certain details and specifying process parameters."

A pilot operation to manufacture high permeability steel at the Yekaterinburg site was tested earlier by Central Laboratory staff in collaboration with experts from Novolipetsk. This means that the launch of large-scale production is imminent.

A Glitter in Their Eyes

Apart from the head of the laboratory, who has a Doctor of Science degree, the Central Laboratory employs six other PhD researchers. Half of these are young employees. This is only appropriate, because Mr. Lobanov believes that his mission goes beyond inventions and discoveries only, and also involves encouragement of young talent.

Recently the Central Laboratory launched a restructuring exercise with a view to further improving the effectiveness of its operations. Young researchers are faced with more challenging tasks compared to what they were doing before. This serves as an incentive for their creative efforts, because in the field of research once you stop evolving you are likely to fall behind. Mr. Andrey Gomzikov, PhD researcher and winner of last year's VIZ-Stal Young Leader contest, was promoted to Head of Technology Laboratory. His unit is in charge of implementing a system for boosting production effectiveness, which would help remove many bottle-necks affecting product manufacturing and personnel training. And Mr. Sergey Akulov, a young engineer, is now head of the new technology team, which is directly responsible for developing the schematics of the HPS production method.

Let's keep these names in mind. They are the hope of the company today, and its way into the future. We shall definitely hear of them again. ✪

By Olga Gorkunova

Brave Thoughts Inside One's Mind

Recently the management of the Nizhneserginsky Steel and Metalware Factory has taken a special interest in the innovation efforts of their employees. And this has paid off as the grass-roots innovation movement, which had been waning steadily, became noticeably more active.

The employee-driven innovation movement involves everyone from university graduates in senior managing positions to employees with no tertiary education backgrounds. Some are pondering major non-generic projects, while others are proposing minor changes in the design of machines or their components, or adjustments in how work is organized. Their combined efforts help to advance technology and technical progress. And the figures speak for themselves. In 2010 a total of 136 rationalization proposals were made at NSMMZ, twice as many as in 2009. More than 70 of these have been implemented and are now making a real difference.

"The overall economic effect of implementing unconventional ideas exceeded RUR87 million (~USD2.9 million)," says Olga Kozyrina, a patents and rationalization engineer. "And that is quite a hefty amount."

No proposal is neglected and the company has effectively created a whole service to encourage the creative efforts of innovators. Pursuant to the Regulation for Managing Rationalization Activities bonuses for proposals found to be innovative were increased two-fold and now are set at RUR5,000 (~USD165). A panel of experts may decide to increase it even further to RUR10,000 (~USD330). Between July and December 2010 sixty-one proposals have been rewarded with 5,000 rouble bonuses and 4 other proposals of special value were rewarded with bonuses of RUR10,000. For the whole year a total of RUR430,000 (~USD14,150) were paid in innovation bonuses.

The company continues to run the Most Effective Rationalization Proposal competition. This year the creative contest was supplemented with another two nominations - Youngest Innovator, and Active Contribution to Innovation Efforts. The winner in each of the two nominations is awarded between 5,000 and 15,000 roubles (~USD165-495), as decided by the panel of experts.

"Beginning in October of last year we have put up special bulletin boards at all of our three production sites," continues Ms. Kozyrina. "Now company employees can see with their own eyes the results of their colleagues' creativeness. In addition one can find copies of the Innovation Activities Regulation and learn how to file a proposal. Since November we have been selecting the best innovator of the month, by taking into account the number of proposals made and their economic effect. In December the title went to Anatoly Khozov, Ladle Furnace Operator, who participated in the design of two innovations with a strong economic effect."

"I am witnessing many positive changes at the factory," Khozov comments on his success. "Rationalization proposals made by employees are being implemented, and gone are the times when no one cared about bright ideas. Nowadays they are used to improve working conditions, reduce idle time, and improve technology, to everyone's benefit."

Anatoly Khozov has a track record of three implemented innovation proposals, two of which are focused on improving steel treatment in the ladle, with an expected economic benefit that would exceed RUR12 million (~USD395,000).

"Mr. Khozov has the work cut out for him with the implementation of innovative proposals at the Melt

OLGA KOZYRINA, PATENTS AND RATIONALIZATION ENGINEER

ANATOLY KHOZOV, LADLE FURNACE OPERATOR

NIKOLAY KIPRUKHIN, PROCESS ENGINEER

Shop," says Dmitry Yakshuk, Head of Technology Division, Steelmaking Operations, who together with Mr. Khozov co-authored and implemented a method for induction of refining slag using dolomite while processing steel in a ladle furnace.

In terms of the rate of innovation proposals one needs to mention the efforts of grass-roots innovators at the Berezovsky site. Their first proposal was filed in February of last year, and by now the figure exceeds thirty. Three are pending approval by experts, while the rest already have been or are being implemented.

"In December we received 12 rationalization proposals from all the shops, and eight of the proposals came from Berezovsky, putting the rolling mill team in the lead," said Olga Kozyrina. An important contribution was made by Central Laboratory staff Sergey Nerushev and Vladimir Vinogradov, both – maintenance technicians, and Nikolay Kiprukhin, a process engineer. The three of them jointly proposed three innovation ideas. Their proposals, however, are not expected to have an economic effect as they focus on improving working conditions (and it's impossible to define their monetary value), but their implementation is of significant benefit.

At Nizhnie Sergi two proposals made late last year were recognized to have a rationalization effect. It involves improved durability of finishing gages for reinforcement steel and using a different material for producing the appropriate cutting roll. Alexey Tikhonov, an engineer with the Technology Division at Long Products Operations, collaborated on the innovations and explains that "the expected economic benefit from enhancing the durability of finishing gages is estimated at around RUR4 million (~USD132,000). The essence of the idea is how to change the threading configuration without violating the requirements imposed by the national standard. After reviewing the condition of gages used in finishing rolls we found that breakages can be reduced by 50-80%."

In time for the Innovator's Day NSMMZ summed up the results of the Best Rationalization Proposal competition. The winning proposal is defined as "Production of Class A500C reinforcement steel from St3ps grade steel according to GOST380-2005 while maintaining mechanical properties required under A500C TU 14-1-5570-2008." "Protection of walls of slag removal corridors at EAF-1 and EAF-2" was recognized as most effective rationalization proposal to change equipment design. And Evgeniy Yekomovskikh, Head of Technology Division at Long Products Operations, is number one on the list of most active grass-roots innovators.

In conclusion, some beginning-of-the-year results – three production sites generated 10 new rationalization proposals and two of these have been implemented already. ✪

By Marina Sayfieva

FOR REFERENCE:

Novolipetsk has summed up the results of the inventors and innovators competition. More than 1,500 employees from across 52 business units enrolled in this competition. Six inventions and one utility model have been implemented. Another 1,918 rationalization proposals have been utilized, 255 proposals to reduce costs, and 7 inventions have been patented. The economic effect from the utilization of rationalization proposals and proposals focusing on cost reductions amounted to RUR72 million (~USD2.4 million).

Part of the competition involved a creativity contest between young professionals in technology areas. Participants were appraised on the basis of the number of rationalization proposals made and best economic effect in the Best Young Innovator and Best Mentor to Young Innovators nominations.

As a result of the competition the Coke-Chemical Operations, Mechanical Assembly Shop, Oxygen Plant, Power Supply Centre, Blast Furnace Shop #1, Main Mechanical Shop, Water Supply Shop, Energy Conservation Centre, and Automation Systems Centre teams were recognized as best performers based on their innovation and rationalization activities. Seventy-five company employees were awarded diplomas and received monetary bonuses.

READY FOR LAUNCH

The Company's production site at Lipetsk saw the completion of core equipment installation work at the new 150 megawatt Heat & Power Plant, a key project of Phase 2 of the Technical Upgrade Program, which will boost Novolipetsk's electrical power generation capacity by 45%, raising it from 332 megawatt to 482 megawatt.

This will improve Novolipetsk's self-sufficiency in electric power from the present 44% to 55%. This will happen in the second half of 2011 with the commissioning of the new Blast Furnace #7, which was built in conjunction with the cogeneration facility. Electricity will be generated by burning blast furnace gas, a by-product of steel making. The cogeneration facility is capable of utilizing 360,000 cubic metres of blast furnace gas per hour, generating 115 gigacalories of thermal energy in the form of hot water and 120 tonnes of steam per hour for consumption by Novolipetsk.

Start-up and adjustment work is presently under way at the facility. Hot testing is scheduled for the second quarter of 2011. ■

FOR REFERENCE:

The new Heat & Power Plant is a modern technological facility which comprises 3 turbogenerators rated at 50 megawatts each, 3 steam boilers, a water treatment unit, water cooling towers and other installations. The plant will be equipped with integrated automation and remote control systems. With energy conservation technology and modern equipment the specific fuel consumption for electrical power generation shall be reduced by 26% compared to the existing cogeneration plant. Once commissioned, the new Heat & Power Plant will create an additional 137 jobs.

SAP ERP IN ACTION

In the beginning of the year, VIZ-Stal implemented an SAP Integrated Information System.

Employees from a variety of shops and divisions are gradually acquiring the skills required to use it. It is important to learn how to use the system, because all exchanges of documents and transactions in connection with the flow of items in 2011 shall be made only through the SAP system. The system has an organic link to the Personnel and Labor information system, which is now running as a pilot operation. It covers the activities of the company's managing divisions, i.e. Labor and Wages Division, Human Resources Division, and the Accounting Division. ■

INSTALLING EQUIPMENT

Since the end of last year NLMK's Kaluga Mini-Mill has been installing equipment supplied by the Austrian VAI SIEMENS for its Melt Shop.

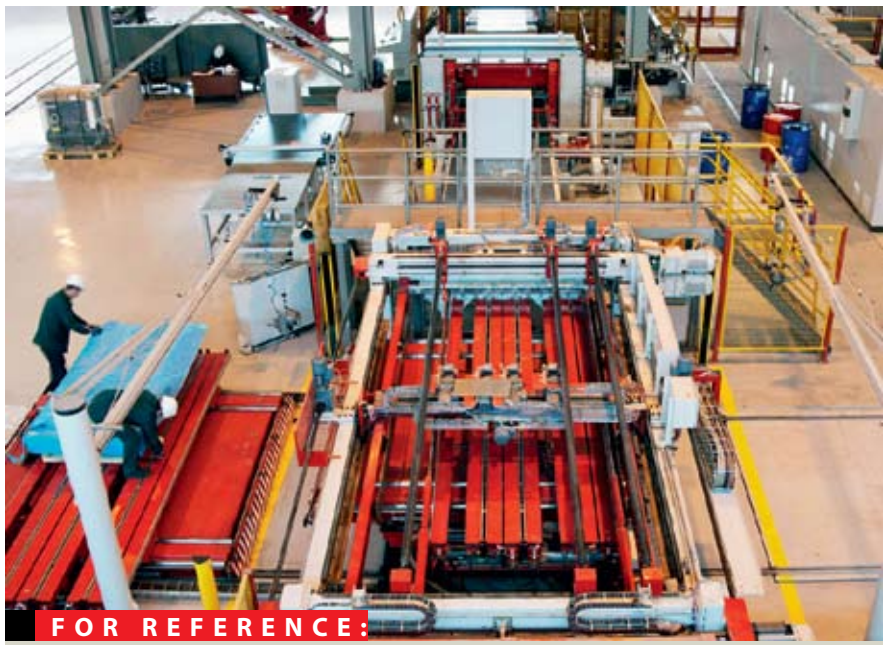
Equipment required for the installation of the electric arc furnace, the ladle metallurgical furnace unit, and the eight-strand continuous billet casting machine is being delivered. The Ultimate-type electric arc furnace utilizes new steel making processes and shall combine high specific electrical capacity in excess of 1 MVA per tonne and one bucket scrap charge operations. The dual position ladle furnace unit shall allow for simultaneous processing of steel in two ladles in alternating positions.

Modern exhaust gas and dust cleaning systems to be installed at the Kaluga Mini-Mill will have a purification efficiency of at least 99%. Once installed their operation should achieve specific emission rates of below 2 kilograms per tonne of steel. By comparison, for integrated steel production facilities in Russia specific emissions reach 25-35 kilograms per tonne, while in the EU countries they are 15-18 kilograms per tonne. Process water for the plant will be supplied via closed-circuit water recirculation systems, which prevent the discharge of industrial effluents into water bodies. Advanced process solutions and technology will make operations at the facility environmentally safe, ensure operational and energy efficiency, and produce high quality products. Delivery of core process equipment for the rolling operations is scheduled for the first half of 2011. The light-section rolling mill will be supplied by SMS MEER. ■

EXPANDING SERVICES

The Novolipetsk Service Centre commissioned its new high-tech cross-cutting machine with preliminary slitting. The machine has the capacity to process 60,000 tonnes of cold-rolled and color-coated steel per year.

The new production installation helped expand the range of services offered by the NLMK service centre in Lipetsk. It can first slit and then cut thin steel sheets, produce substrates for the construction industry, machine-building and automotive industries. The equipment was manufactured in Germany and ensures high precision of linear dimensions. Finished products will be 0.35-2.00 millimetres gauge, and between 400-4600 millimetres in length and 300-1480 millimetres in width. ■



FOR REFERENCE:

The Novolipetsk Service Centre joined the NLMK Group as a stand-alone operation in 2009. It produces shaped steel, steel roofing tile, tubes and other products. Within the framework of NLMK marketing operations it sells around 60,000 tonnes of steel products per year and is responsible for liaising with regional wholesale buyers.

ONE AFTER ANOTHER

Around New Year VIZ-Stal launched its Continuous Annealing Line #7, idled since last November for upgrades as part of the Technical Upgrade Program.

Continuous Annealing Lines ##3,4,5 had been revamped earlier. But Line#7 has received the most radical make-over. All previous experience was put to work, and unique equipment not used on other Cold Rolling Mill furnaces was installed.

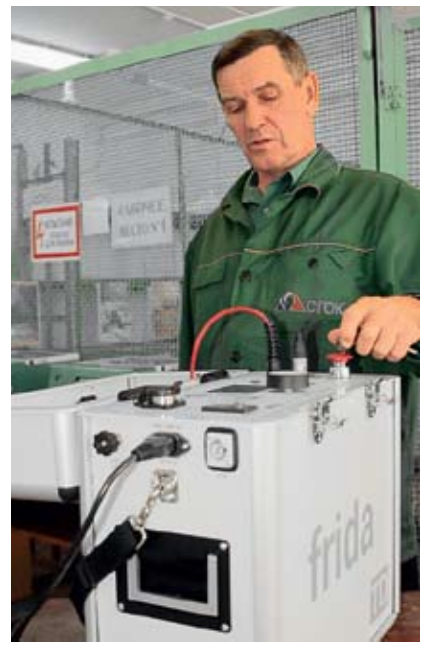
The cooling unit was revamped, a new air blast cooling chamber and thermosyphon coolers were installed. The line was also equipped with a thermoaligning roller, strip drawing control and a magnetic measuring system. An electrical insulation coating unit will be added in April. In other words, everything is done to ensure top product quality. The first months of operations proved a complete success. ■

SAFETY FIRST

Stoilensky's drain well is now equipped with a computerized shaft signal system. Microprocessor-based hardware is now responsible for reliable winding cage operations.

The winding cage status, its position and load type are displayed on a monitor of the microprocessor equipment. The cage attendant no longer needs to count the shaft signals and interpret their meaning. He is automatically informed by the system which also blocks all occurring errors. "This system is the first of its kind in the region, but it's an absolute necessity for us," says Gleb Postnikov, Chief Drain Well Power Engineer, "The security of ascend/descend operations and load transportation is a top priority for us. The new equipment controls the run modes of the winding unit, thus insuring against operator errors."

Miners from the neighboring city of Gubkin have already shown interest in the innovation. ■



NEW **EQUIPMENT**

Stoilensky's Chemical Analytical Lab has commissioned a new CS-230 analyzer intended for making snap analysis of sulphur and carbon content in ore, concentrates, ferrous and non-ferrous metals, steel and alloys.

The device needs less than 45 seconds to determine the sulphur and carbon content in a range from 0,0004% to high concentrations. Analysis results and data on the sample, gauge and testing conditions are all displayed. The analyzer can be controlled from a PC.

A new device, FRIDA, was acquired for the High-Voltage Testing team at the Central Laboratory of the Grid, Substations and Automation Shop. Its function is to test high-voltage cables with cross-linked polyethylene insulation during scheduled preventive repairs and emergency cable failures. Among the key advantages of the device are its portability, testing program editing options and manual/automatic modes.

The Process Control System team received a new network tester, LinkRunner Pro, to diagnose network connections, quickly identify and eliminate defects. All one needs to do is connect the computer network cord to the device, and all the necessary information is instantly displayed on the screen. ■

NLMK PURCHASES **NEW EQUIPMENT**

NLMK has signed contracts with SMS Siemag AG and Sytco AG, agreeing the supply of new equipment for its Lipetsk-based rolling operations worth a total of EUR15.3 million.

SMS Siemag AG (Germany) will supply equipment necessary for the modernization of the hot strip mill run-out table, which will be delivered between August 2011 and February 2012. The facility will be upgraded on a gradual basis, culminating in 2013 when the capacity of the hot strip mill will have been increased by 45 000 tonnes, up to 5.7 million tonnes per annum.

Under the agreement with Sytco AG (Switzerland), new equipment for the Roll Section of the Cold Rolled & Coated Flats Mill will be supplied in April 2012. The project will ensure high quality roll surface for the Company's new cold rolling facilities. NLMK plans to install the equipment in Q4 2012 as part of the second stage of its Technical Upgrade Program. ■

BURNING BRIGHT...

Novolipetsk has finished the installation of a new environmentally friendly industrial waste neutralization plant with the capacity to process 1,200 tonnes of waste per annum.

It will be used to burn low-hazard waste materials generated by the Company, including oiled cloth, saw dust, paper and wooden packaging and soil contaminated with oil products, with minimum environmental impact.

The new plant is compact and in line with state-of-the-art technologies. It employs the most efficient neutralization process whereby waste incineration is combined with high-temperature (up to 1100°C) thermal decomposition. The plant is equipped with an afterburner with a catalytic reactor for the additional treatment of combustion waste gases.

The technical solution used at the new facility ensures almost complete waste incineration which will reduce the technogenic impact on the atmosphere by over x20, compared to previously employed technologies. The Company has invested over RUR1.5 million (~USD50,000) into this new environmental project. ■

FOR REFERENCE:

Due to new technologies NLMK neutralizes and recycles over 95% of generated waste. The Company has successfully implemented unique technologies for safe disposal of slag and sludge, petroleum and oil waste, as well as electrical equipment containing ultra-toxic substances. In 2004 NLMK stopped process waste accumulation at the Lipetsk site and started to process previously accumulated waste. In total, over the period from 2004 to 2010 the volume of previously accumulated waste was reduced almost by 1.5 million tonnes.

NEW EQUIPMENT LINED UP

Four new 130 tonne BelAZ trucks and four 55 tonne ones have been added to Stoilensky's heavy duty fleet.

Having successfully passed trials, they are ready for carrying cargo. Railway Transportation Unit received two Diesel-powered locomotives manufactured by the Liudinovsk Plant. Miners are really counting on the new equipment to solve the new challenges: production is expanding, and so are finished product deliveries, hence the need for more shunting operations.

Stoilensky's railmen are trying to acquire similar-type equipment. This is both cost-efficient and convenient: shared R&M, spare parts, and suppliers. A new mini electric locomotive is working at the drain well. It's not much bigger than the one running small gauge trains in an amusement park.

The junior-sized device has an adult task at hand: its capacity is enough to pull four loaded mine cars. ■

SUPPLIER **STATUS CONFIRMED**

Representatives of the Turkish Areva – one of the Company's key consumers – paid a visit to VIZ-Stal.

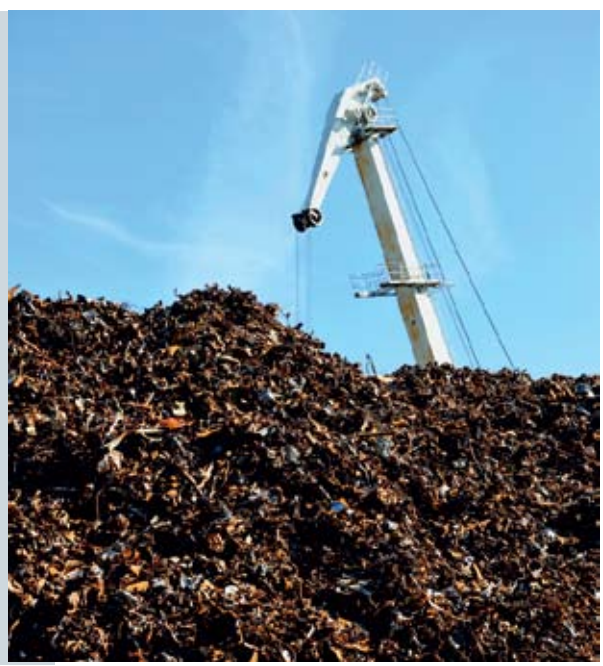
They performed a two-day audit of the Company's Quality Management System and operating flows. The auditors scrutinized the entire production chain, starting from the stockyard that receives slabs supplied by Novolipetsk, and ending with the Process Control Department. A sample was taken and tested at the Finishing Floor Slitting Unit. The audit did not reveal any significant irregularities and VIZ-Stal was reaffirmed as one of Areva's approved suppliers of grain-oriented steel. ■

DOWN TO **THE GRAM**

A new weight checking system is being implemented at all Vtorchermet NLMK Urals sites.

As a result of installing this automated module, coupled with a video-surveillance system, scrap acceptance process will become more transparent, economic security will improve, and ferrous metal scrap delivery to the Company's processing units will be better controlled.

So far, this module has been installed at 7 sites out of 26 in the Sverdlovk region, including the main one in Yekaterinburg, as well as Nizhny Tagil, Nevyansk, Revda, Asbest, Irbit, and Alapaevsk. Even after a short operating period the pros of this system are on the surface. ■



Proud for the Job

Stoilensky is famous for its great professionals, like Vladimir Bykowski, Engine Crew Supervisor at the Railway Unit. He has been with the Company for over 25 years.

Vladimir has devoted almost all of his life to railways. He joined the Company in 1984. For twenty years he worked as a Traction Engine Driver, nine of which as Senior Crew Driver. After that he was appointed Engine Crew Supervisor. He is in charge of coordinating shift A, or around 80 workers.

"The role is very important," he says, "Besides the knowledge and the skills, I am responsible for the work of others. And that is way more complex than just being responsible for your own actions."

"He is ready to come to work at any time of day or night," says Head of Rolling Stock R&M Viktor Kovalev, "He will even come back from his vacation if there is an urgent matter to solve. Vladimir can fix all the malfunctioning equipment himself which proves his qualification and skill. He is a true professional."

"Bykowsky is a highly experienced professional," says Emergency Train Operator Arthur Scherbakov, "He has a great personality and great people skills. He is always willing to lend a helping hand."

VLADIMIR BYKOWSKI, RAILWAY UNIT ENGINE CREW SUPERVISOR

Amongst other duties, Vladimir, like other crew supervisors, is in charge of training young specialists, controlling the work of locomotive teams. He checks them for compliance with traffic security, and identifies all violations. Every shift he organizes technical trainings. At the same time, he hasn't stopped studying himself. Right now he is focusing on electric and pneumatic circuits, and troubleshooting methods.

During checkout runs, Bykowski observes how well the operator drives the train, whether he is up to speed, and makes the necessary adjustments.

Having mastered all the tricks of his profession, he is generously sharing his knowledge with the young members of his team both during formal trainings and during friendly chats. He is actively involved in Best Practice Trainings, passing on his skills of driving trains through the most difficult track sections in the quarries and open cast pits.

Shift A came first in 2010 in terms of removed mined rock volumes, and Mr Bykowsky was awarded with an Honorary Certificate by the RF Ministry of Industry and Trade for his longstanding professional commitment.

"When you receive such high praise, you feel immensely proud for the profession you've dedicated your life to," he says, "And as long as you are working, you feel happy."

By Olga Nikolaeva

He Takes After Me

Dmitry Vassiliev, Cold Rolling Mill Operator, came runner-up in the VIZ-Stal Young Leader contest and is an active participant in annual professional skills competitions. Last year his team was named Best Mill Technicians, with Dmitry displaying exceptional theory knowledge. He has been included in the Company's talent pool.

Initially trained as a cook, Dmitry switched professions to become a mill operator. These two jobs have something in common: a chef rolls out pastry, and a mill operator rolls steel. Seriously speaking, Dmitry prefers his new role, though he is still fond of cooking.

Dmirty is very persistent and career-driven. After being transferred from the Coil Preparation Unit to Rolling Mill 1300, he realized he was lacking technical backup and entered the Urals Polytechnic College. He is graduating this year, but he is determined to go on. The next step for him is the Urals Federal University. "Education is paramount," he says, "It's a prerequisite for career growth, a way to gain a competitive edge."

"He is incredibly goal-oriented," says shift foreman Yury Ankudinov, "If he sets out to do something, he keeps at it. He wanted to be transferred from the Coil Preparation Unit to the Rolling Mill, and he achieved that, becoming a Mill Operator. And he is continuing his studies."

Dmitry goes to college to master steelmaking theory, whereas production is a unique source of practical experience for him. He modestly says that his role at the mill is still small, but he has already learned a lot. And that is because he is always willing to turn to other's experience.

"The silliest question is one never asked," he says, "You can never feel shy about asking for help. There is no other way to really understand something."

DMITRY VASSILIEV
MILL 1300 OPERATOR

Dmitry is the youngest operator at Mill 1300. He is 27. Alexandre Gavlik, his teammate, is also 27, but he is six months older, a constant source of teasing among the two friends. In terms of experience, though, Dmitry is way ahead of his colleague, he's been in steelmaking for nine years, whereas Alexandre joined the roller team last year.

Dmitry's father, Alexandre, has 35 years experience in steelmaking. After many years at the Rolling Mill, he is now in charge of repair and maintenance. He was the one to introduce Dmitry to the plant at the age of 18. Today, he is extremely proud of his son, "He takes after me," he says.

Dmitry is currently working on a project on HR Management for his college. The plant's HR specialists are happy to consult him on this. They believe in Dmitry and appreciate his efforts to continue his studies.

"We value Dmitry's business qualities. We are going to try to arrange for the plant to give him a partial tuition waiver," says HR Lead Olga Scherbo, "He deserves it. Dmitry showed how talented and determined he is in the VIZ-Stal Young Leader contest. It's our duty to help him advance his career further. The plant has a great talent pool. And annual competitions help us discover new talents. We have to help them evolve."

By Anatoly Uglanov

LISIN HEADS NATIONAL ASSOCIATION OF SUMMER OLYMPIC SPORTS

Vladimir Lisin, Chairman of NLMK Board of Directors and President of the Russian Shooting Union has been unanimously elected President of the National Association of Summer Olympic Sports (NASOS) at the suggestion of Alexandre Zhukov, President of the Russian Olympic Committee (ROC), replacing Sergei Bogdanchikov. Lisin's knowledge of sport issues and his active involvement in solving them were acknowledged.

Dr Lisin thanked all the NASOS members for the honor and said that the success of the Association largely depended on active participation of all the constituent federations. It should also focus on establishing close ties with the Ministry of Sport and Tourism and the Russian Olympic Committee. ■

FOR REFERENCE:

The National Association of Summer Olympic Sports was created in 2005 at the initiative of the Russian Olympic Committee and eight federations. 24 unions and federations joined it later. It currently unites 35 summer Olympic sports federations.

CRESTING THE MILLION MARK

NLMK Long Products started the year off with a significant event: NSMMZ's new Rolling Mill located in the city of Berezovsky produced its millionth tonne of steel.

An ordinary working day turned into a celebration. Having gotten the green light for commissioning at the end of last year, the mill rolled its millionth tonne before the end of start-up activities.

"The millionth tonne is indicative of the Mill's great potential, its stability, and the team's ability to work together towards a common goal," says Alexander Burayev, NLMK Long Products CEO, "We've proved we are capable of big things."

Plant management and trade unions congratulated the Rolling Mill team on their first million. Shift members that rolled the "milestone" tonne received letters of gratitude, and the best ones got bonuses. 27 employees were awarded with honorary certificates for high performance and personal commitment.

The milestone bundle was decorated with ribbons, and special inscriptions were made on the labels.

Dressed-up, the 6.5 mm diameter wire rod was shipped to domestic consumers. ■

FOR REFERENCE:

The new Rolling Mill at Berezovsky is among the most advanced in Russia. The basic process equipment is a high-capacity two-strand rolling mill 150 from the Italian Danieli. The new unit produces coiled rebar, with the target of further developing the Company's metalware production and sales.

Construction was completed in 2009. After start-up (that started off the output count), the mill received final commissioning approval at the end of the year.

COAL RESOURCES – CHECK!

NLMK has won the right to develop the third mining area in the Usinsk coal deposit (Usinks-3) located in the north of the Komi Republic. NLMK was selected following a competition organized by the Subsoil Agency of the Komi Republic. The license fee is RUR900 million (~USD30 million). The license granting the right to develop the mine is expected to be obtained within two months.

The Usinsk deposit is located in the north-western part of the Pechora coal province, 45 km south-west of the Vorkuta deposit in the territory of the Komi Republic. The Kyk-Shor railway station is located within the field boundaries, 56 km from Vorkuta.

The Usinsk-3 deposit has over 227 million tonnes of on-balance reserves of high-quality hard coking coal (grades Zh and KZh, Russian categories of reserves C1+C2). Within the next seven years, NLMK plans to complete geological exploration activities, draw up a technical design for the commercial development of the deposit and launch the construction of a mining facility. Mine commissioning is planned for 2016, reaching the design capacity of approximately 4.5 million tonnes in 2018. As part of the development, approximately 3 km of railway line will be constructed, connecting the facility to Kyk-Shor station.

Alexey Lapshin, President of NLMK, said:

"This step is completely in line with our strategy aimed at enhancing the long-term efficiency and sustainability of our business by increasing integration into the production of high-quality raw materials." ■

Manpupuner: A Journey into the Land of Stone Giants

Long ago, seven Samoyed giants were walking through the Urals mountains to Siberia to capture the land of the Mansi people and destroy them. However, upon seeing the Mansi's holy mount of Yalping-Ner, they were stuck by terror and froze into stone pillars. The Seven Strong Men Rock Formations are still there today...

The ancient Mansi legend is describing a natural wonder, a geological monument in the form of 7 gigantic abnormally shaped stone pillars located north of the Ural mountains in the Komi Republic. These monoliths are around 30 to 42 meters high. Out of the seven, six towers are lined at the edge of a precipice and the seventh stands somewhat apart from others. As per local legends, these rocks are actually reminiscent of a rank of six men lined up behind their leader, the Samoyed shaman.

These legends resurfaced after the Seven Wonders of Russia contest held in 2007-2008 to determine the country's most unique attractions. Manpupuner (or Man-Pupu-Nyer, that in the Mansi language means "*little mountain of the gods*") was among the winners, alongside the Valley of Geysers in Kamchatka, Mamayev Kurgan (*"tumulus of Mamai"*) in Volgograd, and Peterhof in Saint-Petersburg. Very quickly from a geological monument known to just the experts and a few extreme sportsmen, the Manpupuner giants turned into one of the most recognizable symbols of Russia. The plateau is oft referred to as the "Russian Stonehenge", and the stone idols are compared to the Moai, the monolithic human figures carved from rock on the Easter Island… And this "rediscovered" wonder is truly impressive, well worthy of the effort to visit Manpupuner.

Mount Manpupuner is located in Northern Urals, 170 kilometers South-East of the Troitsko-Pechorsky village in the Komi Republic, on the territory of the Pechora Ilychsk Reservation, known for its unique location in two parts of the world, amazingly diverse flora and fauna, and a unique elk farm.

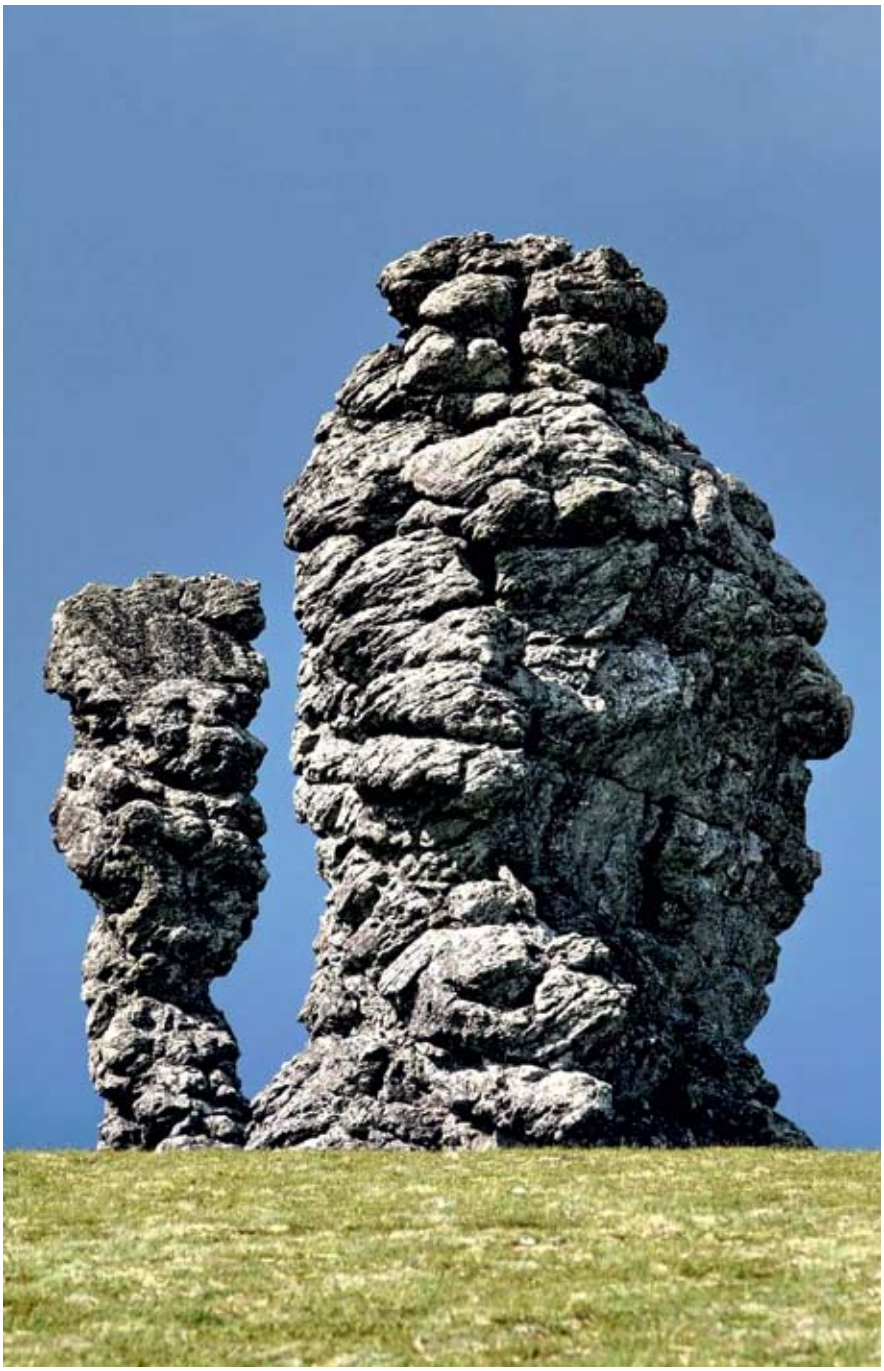
On your way to Manpupuner you can visit this reservation, choosing one of the four excursion tours on offer. Independent of whether you choose to explore the Pechora Ilychsk complex or not, planning your trip to the stone giants you need to get approval from the local administration. To protect the reservation from human impact, the number of tourists and their routes are strictly regulated. And keep in mind that crossing the taiga to get to the mountains is way more dan-

gerous than visiting the Peterhof fountains.

There are two ways to access Manpupuner by land – from the Sverdlovsk region and from the Komi Republic. The first one is more explored, and you can get a guided tour. The locals will give you a truck-drive to the estuary of a small river Auspia (North-West of the Sverdlovsk region). From there you'll have to go on foot, always uphill until you reach the Dyagilev pass. Experienced sports tourists claim it is the hardest part of the route: the rucksacks are packed tight, and the path twists a great deal. It takes two days to cover 25 kilometers! Then it gets easier. Keeping north, you'll need to cover 75 kilometers of mountain chains, past breath-taking mountain landscapes, to a small river marked with a proud sign saying "Here starts the great Pechora River." It will take another three days of following the river to see the stone giants far ahead in the distance. And that is if you are lucky: the weather in this part of the Pechora River is very misty, and sometimes you will have to rely on your maps and navigators to guide you to the Manpupuner.

The other route is less known. Up until recently it was only used by geologists. One of them – G. Chernov, a talented scientist famous for discovering polar oil fields – wrote a book about his trip to mount Manpupuner called *Hiking in the Pechora Alps*.

This route across the Komi Republic implies the use of the region's water resources. You will need a motorboat, a raft or a rubber boat, and poles (the current is so strong that ores won't do).



Manpupuner has more than just the giant stones to offer. Having reached the top of the mountain, you will suddenly find yourself immersed in the world of the Ancient Mansi, with the legendary battle between the giants and the Mansi spirits replaying before your eyes. The holy mount of Yalping-Ner, the one that scared the giants, is towering to the South-West. The Coup mountain can be seen further South. It's name is translated as "drum" – this is where the Samoyed shaman dropped his before he turned to stone. Surrounded by the stone pillars, one can't help but relive these ancient legends…

The story of how the Manpupuner pillars were formed is not a mystery for the scientists. There used to be very high mountains but with the passing of time, erosion caused by rain, wind, freezing, and other meteorological phenomena kept wearing down the surface until forming the seven pillars currently left standing. Such formations can be found elsewhere in the Urals, as well as beyond. For instance, a few kilometers away from Manpupuner is the stone city of Torre Porre Iz, where wind has carved strikingly real walls, streets and squares into the mountain. A reservation near Krasnoyarsk called "Pillars" can boast a lot of mountains that have been carved out by weathering. Similar pillars can also be found in the Timan tundra. However, the Manpupuner Seven remain the most impressive of all.

Besides walking, there is another way to reach Manpupuner – by air. MI-8 helicopter excursions are organized from Ukhta. It is not the same as making your own way up the mountain, but a bird's eye view of the taiga and the Ural mountains is striking in itself. ✪

By Way of Tribute

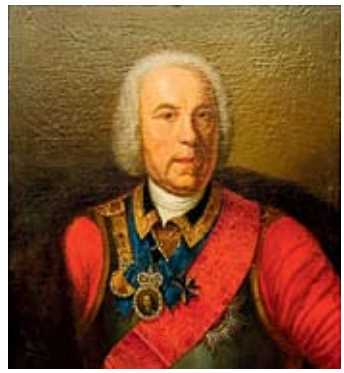
Foreigners have always played an important though at times ambiguous role in Russian mining. Having tied their lives with Russia, they had to see it through all the twists and turns history had in store. For a long time, coming to develop mining in this huge, unknown and mysterious country was perceived by the foreigners as a somewhat risky venture, as well as a missionary undertaking. Dmitry Mamin-Sibiryak, a Russian author most famous for his novels and short stories about life in the Ural Mountains, remarked when describing the Yekaterinburg plants that "*most of the miners were foreigners that brought with them the rudiments of social life.*"

IN 1637 a Dutch merchant, Andreas Vinius, sold his house in Amsterdam and came to Russia to build a few metallurgical plants near the city of Tula. He later passed them over to his partners, Petr Marselis and Tileman Akema. Inspired by the foreigners, the locals started their own production and gradually drove the Europeans out as unpleasant stories about them started to surface. For instance, Marselis was involved in dealings with forged copper money.

Although he wasn't too successful as a plant owner, Andreas Vinius was not willing to leave Russia. Despite his foreign origin, he became a Russian citizen and in 1652 he was baptized Orthodox by Patriarch Nikon himself. He was granted a nobility title for his merits. His son grew to become one of Peter the Great's close companions. He set up the postal service, translated a lot of paramount books on military operations and technology into Russian, gathered an extensive art collection and one of the largest private libraries.

A lot of foreigners were called into Russian service during the reign of Peter the Great. Russia was in dire need of experienced European experts to set up its own mining industry. They were a very mixed crowd. Some were from the nobility, like the Scottish barons von Luberas, or the descendent of Scottish kings Jacob Bruce who became the first President of the Berg-Kollegium. Others were commoners. Wilhelm de Gennin, future manager of the Urals mining plants and the founder of Yekate-

ANDREAS VINIUS

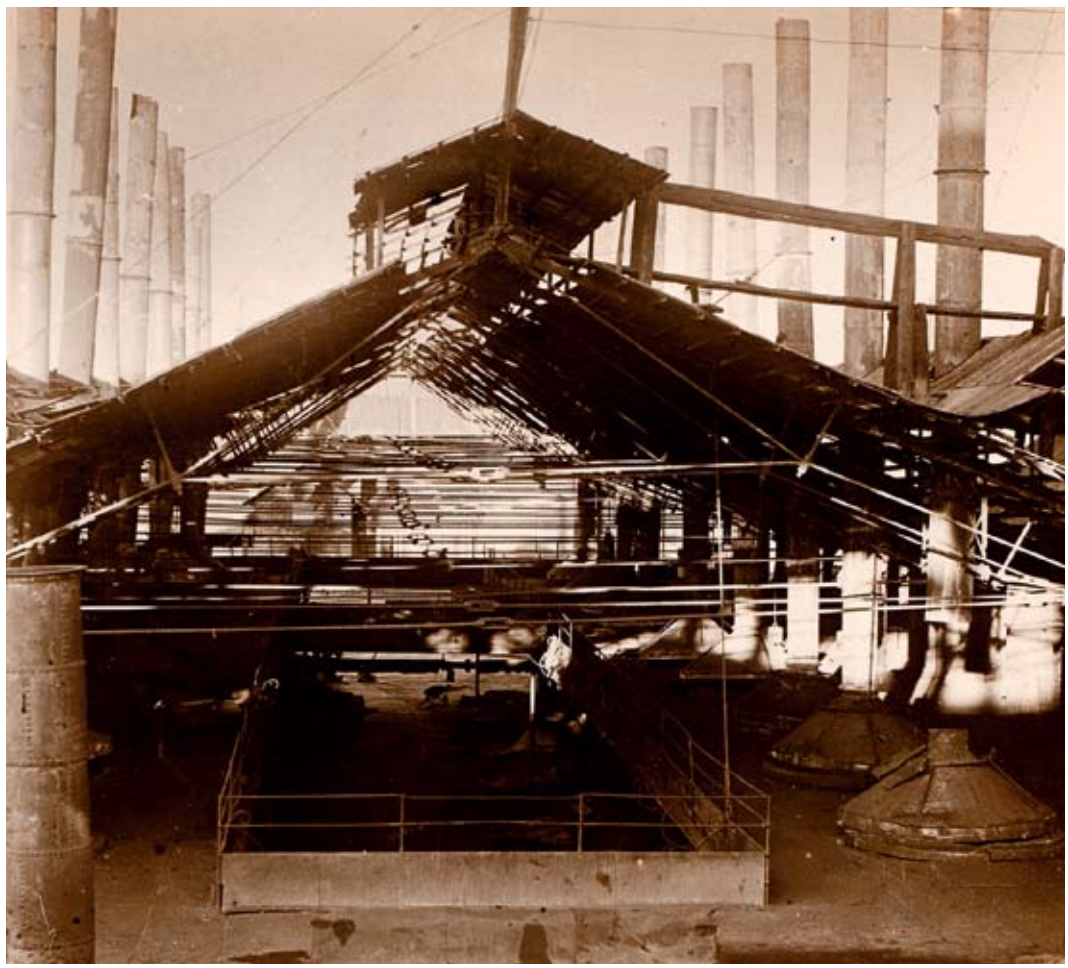


WILHELM DE GENNIN

ERNST JOHANN BIRON

rinburg, came to Moscow from the Netherlands to serve as a sergeant and firework maker. The Saxon Iohann Bluher came to work as a simple overman in 1699. Three years later he went on to discover the ore reserves in Karelia and was placed in charge of the construction of Peter's Plants (now the city of Petrozavodsk). Bluher participated in numerous research expeditions, inspected the plants and in many ways, he "*was the man behind developing mining in the Urals*", according to academician I.German. Bluher was also the one who came up with the idea of a single mining authority, the Berg-Kollegium.

Peter managed to bring a lot of foreigners to Russia, but it was the Germans, and particularly the Saxons who played the most important role in the country's mining. Saxony was the epicenter of European mining. Plant districts were being organized under German supervision and in line with strict German standards. Russian mining terminology of the XVIII century is all German, even when it came to official government authorities and legal documents: Berg-Kollegium, Berg-Privilege, Berg-Reglement.



COPPER SMELTING FURNACE, BYISK PLANT, NIZHNY TAGIL

VIEW OF KYSHTYM PLANT

ADMIRAL SAMUEL GREIG

German dominance had its downsides too. Under Anna Ioannovna who inherited the throne after the death of Peter the Great and was reluctant to get over-involved in state affairs, her favorite, Ernst Johann Biron, Duke of Courland, seized the reins of government in the country. During an administrative reform of the mining industry Biron appointed a Saxon Baron von Schemberg Head of the Berg-Directorium (ex-Berg-Kollegium). Over the four years in the position Schemberg managed to degrade the Urals state-owned plants. The Empress granted him a number of plants for use in the Bragodat' mountain, as well as copper mines in Lapland. Schemberg promised to pay 400,000 roubles for them but failed to keep his word… After the fall of Biron, the Saxon was arrested and deported after returning half of his debt to the treasury.

Nonetheless, the good done by foreigners for Russian mining far outweighs the bad. They helped transform the industry into a well-aligned system. Suddenly it wasn't such a risky venture for foreigners any more.

Alongside Germans, an important contribution to developing the Russian industry was made by the Scottish. By the beginning of the XIXth century, a lot of the things created by the Saxon "nestlings of Peter's nest" (as a poet would later put it) were becoming outdated. The impetus to development was lost. Russian steelmaking was losing its leadership, first falling to third in Europe, and then down to fifth. It was then decided to turn to Great Britain for help, where the Industrial Revolution and new production relations were already yielding results.

It all started with the need to replace old warship cannons with more modern weapons, the carronades. Samuel Greig, an English Admiral serving in Russia, reported this to Catherine II. The Empress approved and ordered the admiral to solve the issue. Greig turned to Charles Gascoigne, head of the Carron Company in Scotland that produced the best carronades at the time (it was Gascoigne, in fact, who pushed forward the development of the new

140 MM ENGLISH CARRONADE MOUNTED ON A SLIDING GUN CARRIAGE, XVIIITH CENTURY

type of cannon and contributed to its fundamental design). Gascoigne agreed and in 1786, at the age of 48, he came to Russia to reconstruct the plants in Karelia and set up the production of carronades.

A true businessman, he was perhaps merely looking to expand his weapon manufacturing. But he found work in Russia so rewarding that 15 years later he will have abandoned all thoughts of going home.

Gascoigne's first request was for the Russian government to give him full control of the plants. Then he ordered craftsmen and equipment from Carron, including the first industrial prototypes of steam engines. He then multiplied the workforce. Karelia Plants were soon producing impressive amounts of carronades that could well compete with the Carron ones.

Gascoigne went on to master iron casting techniques, producing complex decorations and building structures. For instance, Gascoigne's plants manufactured the vaults for the first cast iron bridge in Saint-Petersburg, built in 1808 by architect V.Geste (the "Green Bridge" across the river Moika).

KARL KARLOVICH GASKOIN (CHARLES GASCOIGNE)

In 1793 Gascoigne initiated the construction of the Kronstadt, and then the Saint-Petersburg Plants. In 1975 he launched the Lugansk Foundry, which later grew into the city of Lugansk. In 1803 Gascoigne insisted on revamping the idled Izhorsk Plants, and three years later these were re-launched, equipped with steam engines.

Gascoigne was incredibly respected in his field. Heads of Russian "mining dynasties" – the Demidovs, the Batashevs, the Mosolovs – valued his opinion. But unlike Russian industrialists, he was never more than a manager at his plants – all the sites that he founded and revamped remained state-owned.

Charles Gascoigne died on June 19, 1806, having dedicated more than 20 years of his life to Russian mining. He did not leave any heirs, and his "phantom empire" quickly fell apart. Separate plants continued to be run by the Scottish for a long time afterwards. ✪

Among foreigners summoned to Russia by Peter the Great to "breathe life" into the mining industry, Johann Wilhelm Schlatter (1708 – 1768) stands out among the rest. When Johann was 11, his father decided to try his luck in Russia. At 13, Johann joined the Berg-Kollegium as an assay master and did incredibly well. This experience proved invaluable to him later on when he went into minting. For instance, Schlatter discovered a new method of separating gold and silver in mixed ores (the method is named after him). Another one of his achievements included setting up a research laboratory at the Saint-Petersburg Mint.

Schlatter's writing deserves a special mention. He authored a number of books on mining, including the *Detailed Course of Instruction for the Mining Industry*, perhaps of equal importance for Russian mining as the works of the famous Italian, Agricola. Between 1760 and 1767 Schlatter served as President of the Berg-Kollegium. His children and grandchildren also devoted their lives to mining, establishing one of the first mining dynasties in Russia.