



# NLMK GROUP

Corporate Magazine

# 6, December 2012

**Oleg Bagrin:**  
“Efficiency is our  
core value”

## Great ideas

How to save a million

10

## Logistics

A major shift

12

## Infographics

Idleness as the driver of progress

18

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Corporate Magazine  
No. 6, December 2012

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Altai-Koks employees conquer one of the highest peaks in Russia

## LETTERS TO THE EDITOR

— I have greatly enjoyed your articles on travel, sporting events, and the creative successes of employees in each issue of the magazine – after all, the entire Group is made up of people, first and foremost. These topics really strike a chord with me, and I often find new ideas for my own personal development in the articles. And, of course, I always keenly follow the news and photo reports about the ‘Young Leader’ contest.

*Olga Valitova, Office Manager, VIZ-Steel*

— I always enjoy reading interviews with successful managers, and learning about the problems and tasks that they face in production today, the solutions they find, and how they see the future prospects for the development of the industry. In addition to issues relating to professional work, it is very interesting indeed to find out about the people themselves, their interests and hobbies, and their outlook on life. In the interview with Brijesh Kumar Garg, NLMK Vice President for Procurement, I was particularly struck by one of his main principles in life: “You must always challenge yourself or you will never progress.” I absolutely agree. You shouldn’t be afraid to try to aim for goals that may appear too ambitious; the most important thing is to have a clear idea of what you hope to achieve. Ultimately, the main thing is not to just sit around twiddling your thumbs, but to do something!

*Ludmila Stepanova, Financial Economist, Railway Transportation Management, Novolipetsk*

— I always enjoy reading about the employees featured in the magazine. It makes a pleasant change from the technical information I deal with on a day-to-day basis. I also enjoy the travel reports; in fact, the entire magazine has been very interesting lately!

*Artem Shatkus, Stoilensky Press Office*

— It was interesting to read the article by the Interfax News Agency metallurgy columnist Svetlana Burmistrova. Finally, a true analyst. Her contribution only improved the quality of the magazine as a whole. I am greatly impressed with the depth and substance

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The most interesting responses  
will be published and we  
will be sure to answer  
all your  
e-mails!**

of the publication. The idea to include a feature about the travels of company employees was an excellent one. Now I know where to go on my next vacation.

*Pavel Kuznetsov, Programmer, Novolipetsk*

— I have been greatly impressed by the scientific and historical articles in your magazine. The articles about the various hobbies of NLMK employees are very interesting too.

It’s fascinating to read about what various people like to do in their free time, especially when the articles are about people you know.

*Sergei Shevhchenko, Occupational Safety Engineer, Altai-Koks*

— I always read the magazine, and I learn a lot from each issue. I really liked the article on kite surfing in the last issue. I love these kinds of activities, but I was only vaguely aware of what kite surfing was. I also like the new look of the magazine, and it has become even more interesting to read.

*Valentina Karavaeva, Treasurer’s Office Secretary, Novolipetsk*

— We all work in a large company, and there is always so much going on. I’m very glad there is a publication that helps employees keep up with all the events. It’s always fascinating to read about the employees at our companies, and not only the managers, but also the people who work behind the scenes, and on whom we equally depend for the smooth running of the company. I really like the ‘Hobbies’ section; it’s always interesting to read more about what employees get up to when they’re away from work. We have some real characters here, and clearly, they’re talented in more ways than one! It’s what makes us such a good team.

*Sergei Gureev, Mining Group Engineer, Stoilensky*

► All the issues of the magazine are available online at:

<http://nlmk.com/media-center/nlmk-corporate-magazine>





# OLEG BAGRIN:

## "EFFICIENCY IS OUR CORE VALUE"

*NLMK President Oleg Bagrin discusses why he considers efficiency to be just as important as production volumes, and addresses market localization, the consequences of the crisis for the global steel sector, and the importance of sports*

— **Mr Bagrin, you are the new President of the Group and you have been on the Board of Directors since 2004. How do you see the company now, and in the future?**

— Since we adopted our growth strategy ten years ago, NLMK has transformed itself from a Russian company into a world leader. This is a huge credit to our management and employees. As President, I have set us a goal of strengthening our leadership position, including taking advantage of the opportunities thrown up by the crisis.

— **Are you talking about leadership in terms of production output?**

— Not just that. NLMK is now a global company. We developed a presence in all key markets and established production facilities in Russia, Europe and the USA. Our unprecedented expansion projects have grown our production capacity from 9 million tonnes in 2007 to 15 million tonnes in 2012 – a rise of nearly 70%. In the process, we have become the largest steel producer in Russia. After the mini-mill in Kaluga Region is commissioned, we will produce 16 million tonnes of steel in Russia. Including our plants in the USA and Europe, our production will be more than 17 million tonnes a year, nearly double the volume of 2007.

However, leadership is not just about scale. It is also defined by the quality of growth, which consists of efficiency, and sustainable returns. NLMK has always been an efficiency leader. Our cost of production is 30% below the current world average. Ensuring the company's stability and finding ways to improve efficiency have always been of great importance to us. These principles are the foundation of our strategy, and they are relevant today as never before.

— **How would you summarize NLMK's strategy?**

— We aim to deliver high-quality growth, developing our competitive advantages and using resources efficiently. Our strategy is also one of responsible leadership, based on process safety and on the interests of clients, partners, and employees.

— **Does efficiency mean producing at a lower cost and selling at a higher price?**

— It's more complex than that. Efficiency comes first from low operating costs and product competitiveness. To a great extent, we have achieved this by vertical integration, sourcing our own iron ore, coke, scrap metal, and electric power. We have made great inroads here and it remains the main pillar of our strategy.

Second, efficient production is impossible without state-of-the-art technologies. In recent years, we have undertaken a large-scale modernization of our fixed assets, implementing the world's best technologies and developing some things ourselves.

However, our concept of efficiency goes much further than this. Ultimately, a business system is

## Profile

### Oleg Bagrin

Age: 38

Years with company: 8

**Position:** President and Chairman of the Board of NLMK. Member of the Board of Directors of NLMK and a number of subsidiaries and affiliates: NLMK International B.V. (The Netherlands), NLMK Pennsylvania Corp., NLMK Indiana LLC, Sharon Coating LLC (USA). Member of the NLMK Board of Directors' Strategic Planning Committee and Human Resources Committee

**Education:** State Management University (Moscow), with a degree in Mathematical Methods and Operations Research in Economics. Degree in Business Administration from the University of Cambridge University (UK). Ph.D., Economics

**Key projects at NLMK Group in which he participated:**

- Creation of a vertically-integrated company structure through acquisition of raw materials and finished products facilities
- NLMK Group IPO
- Attraction of USD1.6 billion in debut syndicated financing for NLMK
- Placement of NLMK debut Eurobond issue (USD500 million) in 2012
- Development and implementation of NLMK Group's Upgrade and Development Program

Hobbies: mountain climbing

Married with three children

only efficient to the extent that it uses resources effectively. Our resources are raw materials, equipment and technologies, equity and debt capital and, most importantly, human resources. Even the best equipment does not guarantee that you will remain a leader. It is important to properly structure the entire business, and integrate all processes, including production, sales, logistics, employee training, finance, and decision-making support.

— **Do you mean that efficiency goes beyond production?**

— Undoubtedly. A company functions like a single organism. It has, figuratively speaking, a skeleton, muscles, blood vessels, nerves, and so forth. Each system performs its function, but they must all be developed in concert, because developing one part and ignoring another disrupts the operation of the entire organism. Advanced production facilities and technologies are the foundation of the company, but they are not enough. There is no sense in building the best production facilities in their class or producing the latest product if vital support systems such as staff training, equipment maintenance and repairs, or client services have not been established. Our job now is to fine tune the company's business processes, so they will operate more smoothly and productively as a whole.

— **Will this help the company survive the second wave of the crisis?**

— I wouldn't try to distinguish between the first or second wave of the economic crisis. The important thing is that it began in 2008, and it continues today. It has several consequences for the steel industry. First, there is now significant excess capacity around the world. Second, China continues to be an important influence. Its economy is cooling off. Growth in its steel consumption is slowing and its export potential is being freed up. And third, steel is again becoming a local product, with localization of consumption replacing imports in national markets, primarily in Europe and America. This is a marked trend.

— **How should we respond to the market?**

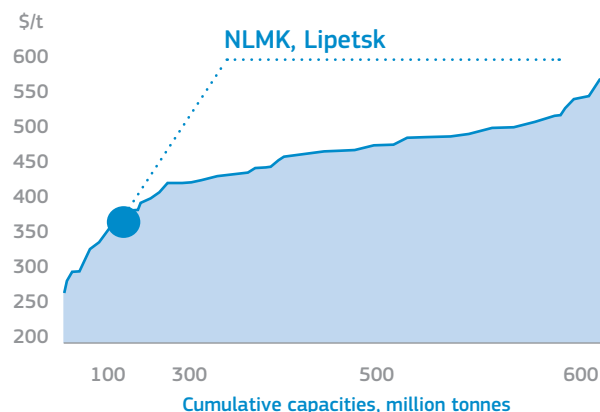
— NLMK is already responding. First, we are further reducing production costs by increasing our resource

“ **NLMK has transformed itself from a Russian company into a world leader. As President, I have set us a goal of strengthening our leadership position** ”

base and improving production efficiency. That is the only way we can ensure competitive products under tough market conditions.

Second, even with low operating costs we aren't always able to compete in foreign markets. More than 80% of Russian steel exports are commodity products for further processing, and this is a cyclical market. It is therefore important for us to expand our offerings of high-quality, customized finished products in Russia and other strategic markets. Our acquisition of rolling capacity in the USA and Europe has enabled us to expand our presence in markets where delivering finished goods from Russia is less efficient because of trade barriers, supply chain costs and risks, and challenging client service. Our foreign subsidiaries are now expanding their product lines, improving quality and service, and cutting costs, particularly in the European divisions.

**Global Slab Cash Costs**



Source: World Steel Dynamics, BOF steel cash cost, June 2012



NLMK Group steel production, million tonnes



NLMK Verona, Italy

— **So we have essentially changed from an exporter into a global player with local presence?**

— Precisely. This is the right response to market localization for a company with low costs, large export potential and a vertically-integrated supply chain, with industrial linkages on three continents. No other steel company has such an integrated structure.

— **Does this integrated structure work?**

— Yes. We make deliveries between parts of our production system, down to the final processing stages. This allows us to make maximum use of our production capacity and ensure cost effectiveness by monitoring the margins of the preceding process stages and making just-in-time deliveries. In this way, we reduce market risks and ensure the stability of the entire system, in which each part of the value chain is connected to the next. Of course, this system demands complete responsibility from everyone involved, at every stage of the production process.

— **So everyone must rely not only on themselves, but also on their neighbor?**

— It's much like a relay race. Each participant depends on the reliability and efficiency of the one before. For instance, the Lipetsk plant expects timely deliveries of

high-quality iron ore and coke from our raw materials subsidiaries, and our colleagues in Verona or Farrell expect high-quality and uninterrupted deliveries of slabs from Lipetsk. Altai-Koks, NLMK, and DanSteel, member companies of our Group, do not exist in a vacuum, buying and selling independently of the others. All of our facilities are working towards a common goal, ensuring the Group's profitability and stability. That is why we have to be driven by mutual responsibility for the efficiency of this interaction: if one link in the process is weak, the entire chain suffers.

— **In addition to perfecting the cooperation mechanisms within the Group, what other tasks does the company face? What will be the areas of future growth for NLMK?**

— I hope the Board of Directors will soon approve the third stage of our Technical Upgrade and Development Program. We are planning significant investments in manufacturing niche products, such as high-quality auto sheet metal. In addition, raw materials security remains an important goal for us. We are implementing plans to expand production at the Stoilensky mine, and exploring options for expanding the coal supply. Upstream projects aimed at replacing expensive coal and improving coke quality are under way. These include introducing technologies for pulverized coal injection, stamped coal charge,



using coal tar and petroleum coke. Our top priority is to reduce the cost of processing, for instance, by optimizing processes at the Lipetsk sinter and blast furnace facilities.

The plans for improving the efficiency of production and other business processes at our existing assets are more important than continuing to rapidly expand our production.

— Does this mean abandoning the previous strategy of increasing production capacity despite the crisis?

— No. It's not a matter of abandoning our previous plans, but rather an evolution of priorities. The company has doubled production volumes in five years and it would be irrational to continue to increase it so aggressively, when there is already excess production capacity in the market resulting from the crisis. Despite the cyclical downturn, we are utilizing more than 90% of our capacity making decent margins. We are therefore close to achieving the goals set for the second phase of our Development Program: leadership in production volume and improved product quality. This demonstrates that we are successfully executing our strategy.

In the next phase of our development, we have a new priority: maximizing the efficiency of our entire business system. For example, the Novolipetsk plant is one of the most modern facilities in the industry, but this doesn't guarantee the success of the company as a whole. Our task now is to improve efficiency at each stage of the production process, and to integrate our production and support business processes.

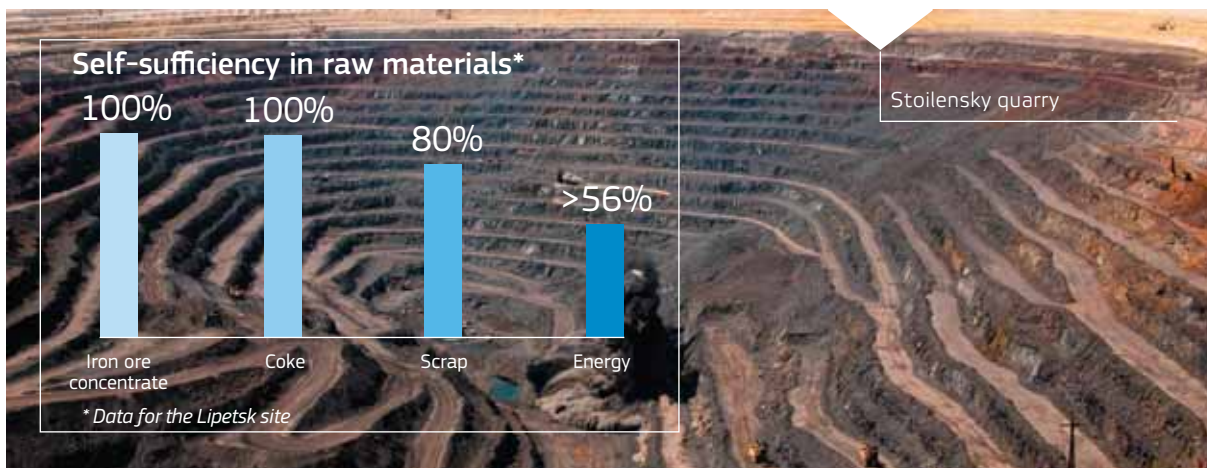
“ Ensuring the company's stability and finding ways to improve efficiency have always been of great importance to us. These principles are the foundation of our strategy, and they are relevant today as never before

— Could you give an example?

— We recently built a cutting-edge quenched and tempered steel (Q&T) plate mill in Belgium. We perfected production but still did not meet our sales plan, despite the market demand. It turned out that we had not provided this world-leading, supermodern facility with a proper sales process in time, and the sales and service network did not adequately meet client demands. Now, after establishing sales offices in every Q&T plate consumption center around the world, we know what we are facing. We probably won't have enough specialists trained in selling a sophisticated product or enough client tech support engineers in every area where we have a presence. The lesson: setting up a business process isn't enough; running it efficiently means having qualified specialists and related processes in place.

— So, it is not just about making savings and optimizing processes: people can help improve efficiency too?

— Of course. When we talk about efficiency in our business processes, this is something that starts and



finishes with the professionalism and effectiveness of our employees. Therefore, investing in people is always the company's top priority. While past success was driven by natural resources and technology, the future demands smooth-running processes, led by skilled and motivated people. Enhancing their skills is therefore a core value at NLMK.

— I believe that NLMK already has one of the best staff development systems in Russia. Is this not enough?

**“ The most vital qualities today are willingness to adapt to change, and the ability to think critically and act decisively. It is important to assume an active role in the life of the company**

— We have always invested in developing our people. For example, at the Lipetsk facility, we train all employees in their primary jobs and offer development courses in 70 areas. About 60% of employees have achieved the highest professional qualifications. Even so, having employees trained in their own specialist areas is not enough anymore. If we are to enhance our leadership, we need leaders; engaged, strong personalities capable of delivering efficiencies to match the scale and complexity of our business.

— How would you describe the perfect employee?

— I think the most vital qualities today are a willingness to adapt to change, and the ability to think critically and act decisively. It is important to assume an active role in the life of the company. The starting point is “I’m not fully satisfied with what’s going on and I think it can be done better.” The next step – look around, talk to your colleagues, and seek a solution for a solution to improve the situation.

It’s easy to criticize your co-workers, but a far more effective approach is to always look for ways to improve your own work processes. Incidentally, the requirements for managers are exactly the same. It does no good to bury yourself in the drama of the moment, constantly stamping out fires and getting

# 129 Hours

average number of training hours per employee per year

caught up in the same issues over and over. First of all, we must establish the right working conditions for our people, which means developing talent and improving our business processes to create a stage where everyone can truly perform.

I think we need to discuss this in greater detail with our HR managers in future issues of the NLMK Group Magazine.

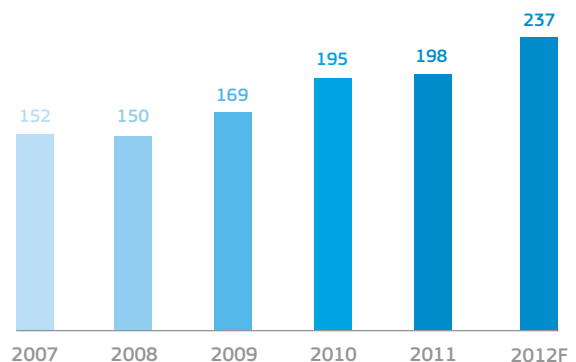
— Describe your typical working day.

— My schedule is busy, from morning until late in the evening, with meetings and events scheduled many days in advance. A lot of time is spent on the road. And there will be even more trips now. Regular visits to our main facilities in Russia, Europe, and the US are in the calendar.

— How do you deal with the jet lag, the heavy schedule, and the stress?

— A manager can’t be effective if he stays at work till late, and then switches on the TV at home. It’s important to strike a good work/life balance. Sport is the best stress reliever for me – it allows you to refocus your attention and clear up your mind.

Productivity, tonnes of steel/person +20%





**> 43,000** *workers*  
underwent professional training  
in 2011

Endurance training helps too. It can be hard to deal with such loads without it.

— Is it true that you go mountain climbing?

— Let's put it this way – I enjoy spending time up in the mountains. I first became interested in this at school, but only got actively involved about seven years ago. By now I have dozens of routes behind.

— How does “spending time up in the mountains” differ from alpinism?

— Well, firstly, I always climb with a professional guide; this greatly improves safety. Secondly, my trips are generally not long expeditions, I simply don't have time for that, but short technical routes – ‘fast and light’ as they say these days.

**“ Having employees trained in their own specialist areas is not enough. If we are to enhance our leadership, we need leaders; engaged, strong personalities capable of delivering the efficiencies to match the scale and complexity of our business**

— How is success measured in this sport?

— To a great extent, it's endurance, both physical and psychological. It is also the ability to work as part of a roped team. If one person works but the other doesn't, you get nowhere. It is important to understand your partner, his physical and emotional state. And of course, you need to have intuition and pay constant attention to what's around you. Your surroundings change frequently in the mountains, sometimes several times a day, and a lot can depend on vigilance.

Curiously, these same qualities are important in business. Endurance, the ability to work in a team, and attention to the external factors and safety are just as important in the workplace as in the mountains. ■

Award ceremony for the winners of the 'NLMK Young Leader' contest



# HOW TO SAVE A MILLION



► Vladimir Bodrykh, Evgeny Boldyrev, and Nikolai Cherkasov discuss drawings of the new development

***A new section in NLMK Group Magazine covering efficiency experts and the ideas that make company production processes more efficient and improve results***

A group of innovators at the Sintering Plant headed by Vladimir Bodrykh, Deputy Director for Equipment, developed a useful model with a rather complicated name: 'TSG-4 Pallet Cart Roller Saddle for Sintering Machine'.

Young employees at the Sintering Plant, Department Head Nikolai Cherkasov and Engineer Evgeny Boldyrev, are among those who developed the new design.

Evgeny Boldyrev talks about how work has been proceeding on the program:

— Experience shows that with automated lubrication of the old design for the traveling roller and load roller, the bearing was only lubricated in one of them, the traveling roller. The lubricant did not reach the load roller bearing. Naturally, this led



A view of a pallet car roller bearing



to overheating, and resulted in premature failure. Furthermore, dust and other particulates were always getting into the gap between the traveling roller and load roller.

Since the load roller bearing bears the greater load during operation, and rotates at low speed, a roller bearing should not be used in it. At low speed and high load, the rollers wear on the separator and get out of alignment. The bearings wear differently over their diameter. The result is that the seal of the traveling roller is broken and lubricant leaks out of the bearing. This is an accident hazard.

**Don't miss out on the chance to tell everyone at the company about your successful project! We would love to hear from you! [magazine@nlmk.com](mailto:magazine@nlmk.com)**

### The problem was solved by making a few changes:

1. A ring was placed between the rollers to create a labyrinth seal with the end surface of the travelling roller and the locking element on the load roller bearing.
2. The load roller bearing is designed as a plain bearing with a groove, while the load roller bearing locking element is designed as an end cover plate.
3. The support axle has a groove that can line up with the groove on the bearing, while the ring can be locked on the axle.

According to the developers, this makes it possible to reduce sintering machine downtime, improve equipment reliability, and reduce repair and lubricant costs.

"When we calculated the preliminary savings from introducing the new model, we found that it allows us to save over RUB1 million (~US\$33,000;

~€25,000) annually," says Nikolai Cherkasov. "That's a significant amount!"

The innovation has not gone unnoticed by industry experts.

"This design was not only noticed, but also adopted by other companies in the industry," Evgeny Boldyrev recounts proudly. "Nearly all of our equipment is manufactured at Uralmash, including the pallet carts, and we, of course, sent them our innovation so that they could alter the design and subsequently deliver carts with our design for the saddle rollers."

The efficiency experts were awarded a bonus for their work. ■

### Profile

**Development:** pallet car roller saddle for sintering machine

**Innovators:** Nikolai Cherkasov and Evgeny Boldyrev

**Result:** all roller saddles are lubricated uniformly and therefore are less subject to wear

**Technical details:** the new design for the load roller saddle roller has a plain bearing, while the supports are sealed using precision labyrinth seals

**Savings:** over RUB1 million (~US\$33,000; ~€25,000) annually



# A MAJOR SHIFT

*This autumn, Freight One (PGK) became the primary operator for NLMK Group, replacing our previous partner, Independent Transportation Company (NTK). Vice President for Logistics **Alexander Sapronov** discusses the reasons for this decision, and outlines some fundamental changes to company logistics*



## OUR OBJECTIVE IS TO HAVE THE BEST LOGISTICS IN THE WORLD

The Group is unique in terms of the complexity of the logistical tasks it handles and the volume of its logistics business, with no equals in the Russian steel industry. I shall cite a few figures to illustrate this. Transport freight, which includes both external and internal haulage, was more than 300 million tonnes in 2012. For comparison, the annual freight volume for Russian Railways is now 1.3–1.4 billion tonnes. In addition, the annual logistics budget is approximately RUB70 billion (~US\$2.32 billion; ~€1.73 billion).

All of this demands a high level of quality and efficiency from our logistics team. We have structured our logistic operations into three main areas: external, internal and intradepartmental logistics. Our priorities are to optimize processes, reduce costs, and improve efficiency.

We are working on a draft of a Group logistics development strategy and plan to submit it for a first review this December. Our objective is to make NLMK Group's logistics the best in the world.

## REDUCING DEPENDENCE ON A MONOPOLY

We are essentially 100% dependent on rail transport for freight haulage. Every day, more than 1,500 carloads of raw materials have to be delivered to Novolipetsk, our main production site in Lipetsk, alone. The cargoes we need to move – metal, ore, coal, and coke – are huge, and sometimes have to be transported over very long distances.

For example, coke trains cover a distance of 3,600 kilometers, and their route follows four railways: the Western Siberian, Southern Urals, Kuybyshevsk and Southeastern Railways. At least three unit trains carrying coke must reach Lipetsk every day.

The transportation of pellets is another important area of operations. These are delivered in specialized pellet hopper cars. This is required by the offloading technology at Novolipetsk created for the pellet hopper car fleet. Therefore, they have to be returned to Mikhailovsky and Lebedinsky, and this means taking responsibility for an additional run of empty pellet hopper cars. If these were gondolas, this could be avoided.

Transporting finished goods is just as difficult. More than a million tonnes of steel are shipped from

**“ We are making every effort to ensure that NLMK Group's logistics are the best in the world, and I am confident that we have the capabilities to achieve this ”**

### Alexander Saprnov

**Position:** Vice President for Logistics

**Years in logistics:** 20

**Years with NLMK Group:** 4

1995–2001 President, Russky Mir

2001–2005 Vice President, First Vice President, YUKOS RM

2005–2007 Vice President, Rosneft

2008–2009 Freight One Deputy General Director for Russian Railways Strategy and Corporate Development

**NLMK Group:**

2009–2012 General Director, Independent Transportation Group

**Since February 2012:** NLMK Vice President for Logistics



Novolipetsk every month. This includes dozens of specifications for hundreds of customers in Russia and abroad.

To fully describe logistics, I will briefly mention the transportation of scrap metal, which we deliver to Group facilities from 400 stations in 37 regions around the Russian Federation. Naturally, NLMK is one of Russian Railways' key clients and the main client of the Southeastern Railway, where Novolipetsk, Stoilensky, Dolomit and Stagdok are located.

However, reducing our dependency on the rail monopoly is one of our priorities. For the first time this year, we delivered steel for export using river-sea vessels: the steel was delivered to the port of Rostov by rail, and then transhipped to a vessel, and then exported to customers first along the



river, and then by sea. We found this to be more economical and efficient than the usual methods of delivery via Novorossiysk. We gained new experience, and intend to work with our colleagues in the sales office to expand this practice next year.

### **TARIFF STANDARDIZATION: PROBLEMS OR OPPORTUNITIES?**

From November 1, railway rates for empty gondola and flat cars were standardized. What does this mean for us?

Previously, the rate for empty runs was determined by the class of freight hauled in the car. All railway freight is divided into three classes: first, second, and third. These classes affect the rate for haulage of the freight and for return of the empty car. In our freight structure, steel is third-class, the most expensive to transport. Therefore, it would be very expensive to return a car after offloading.

For example, direct return of a gondola car from Novorossiysk to Novolipetsk caused losses for the operator. This could have been avoided by increasing the cost of steel transport to Novorossiysk, which was unacceptable for us, or by using so-called passing loading. In operator slang, this is called 'breaking up' or 'rate washing'. This means that a car must be loaded and travel a

certain distance with a first-class load (crushed rock for example), so that after offloading the empty car can return at a lower rate.

This factor significantly impacted rolling stock movement logistics, but rate standardization is radically changing this system. And the need to 'break up' the rate is no longer pressing. Empty cars can return at a single rate regardless of the class of load hauled in them. As you know, there are no such things as miracles: standardization also

“ *Logistics is everywhere around us, outside, on site, and in the shops* ”

affected rates for loaded cars. For some cargoes, primarily low rate class cargoes, they became slightly higher. However, third class has mostly won out. On the whole, standardization did not have a significant impact on the Group's rate interests. We consider rate variables as an opportunity to reduce our transportation expenses by exploiting the opportunities to optimize logistics offered by standardization.



### NEW PARTNERSHIP: FREIGHT ONE

A further important event this year was the transfer of the rolling stock belonging to NLMK Group's traditional partner, Independent Transportation Company (NTK), to Freight One. Thus, Independent Transportation Company's functions as an active Group operator have been shifted to Freight One.

This is because the two companies have the same rolling stock. Independent Transportation Company has about 30,000 all-purpose gondola cars. Freight One has more than 80,000. Therefore, merging the rolling stock of the two companies is an objective solution to optimize expenditure, personnel, rolling stock maintenance, and organizational and technical aspects of haulage.

This is a very significant event for all of the companies. We prepared for it after carefully calculating the consequences, for Independent Transportation Company had proven itself to be a partner with a significant advantage. Independent Transportation Company provided a full range of haulage services, and we must admit that we had no serious problems in recent years, which proved to be very difficult for many freight carriers.

Starting from October 1, management of the Independent Transportation Company rolling stock was transferred to Freight One.

We held a joint meeting in Lipetsk in late October, during which we reviewed cooperation and service issues so as not to lose the positive experience of quality service built up by Independent Transportation Company.

In 2012, NLMK Group external haulage was about 85 million tonnes. This figure is expected to increase to 90 million tonnes in 2013. This is why we take our relationship with our new partner seriously: because the performance of all the Group's companies depends on it.

The current situation does not mean that Independent Transportation Company is going out of business, simply that its functions are changing. All of the Group's companies have long-term agreements with Independent Transportation Company. They will continue to operate, keeping their rate level for providing rolling stock.

We put together our requirements for Freight One at the meeting in Lipetsk, laying out the types, volumes, and quality of services that we expect.

This was based on three factors: firstly, the rate level defined in the long-term agreements with Independent Transportation Company will remain the same. This is the first basic requirement: to maintain the price level for services. The second requirement is to maintain the level of service. ▶



Furthermore, we feel that the potential of Freight One as a company with a very extensive network of affiliates – and these are affiliates employing 100–150 people – will enable them to provide an even more efficient service. The third factor is that Freight One should take full responsibility for all transportation services across the Group's companies.

Why was this meeting held? Our partners, who are not very familiar with the steelmaking industry, need to understand how it works, the requirements and deadlines for the delivery of raw materials, as well as the requirements for shipping finished goods, which I mentioned above.

I am convinced that Freight One's potential will make it possible to improve the quality of services provided and add new servicing tools and new transportation products.

### LOGISTICS AS A PART OF BUSINESS

Logistics is everywhere around us, outside, on site, and in the shops.

I noted above that the NLMK Group's logistics are structured in three areas: external, internal, and intradepartmental logistics. These areas are all interrelated, and an effect achieved in one of them creates synergy in other areas. We said that the pellet offloading systems at Novolipetsk were adapted for receiving specialized pellet hopper cars. Hauling in pellet hopper cars is expensive. For example, we pay RUB426,000 (~US\$14,125; ~€10,540) more for one train of pellets from Mikhailovsky than if the pellets were transported in gondolas.

Thus, external logistics required changes in intradepartmental logistics. We set the goal of developing NLMK's capability for offloading pellets from all-purpose gondolas and eliminating the use



Car tipper  
at Altai-Koks

“ *In the second half of 2012, we expect to achieve more than **RUB320 million** (~US\$10.6 million; ~€7.9 million) in real savings in transport expenses* ”

of pellet hopper cars. We found a solution together with our colleagues from the production unit and the Lipetsk Government Institute for the Design of Metallurgical Plants (GIPROMEZ): to use coke car tippers for this purpose, install a conveyor, and use it to deliver the pellets to Blast Furnace Shop No. 1. The institute is making a design modification now. This example is important because we deviated from standard practices and the proven approaches, and we found simple solutions that did not require major expenditure. In terms of internal and intradepartmental logistics as a whole, the key goal is to reduce operating and investment costs.

Here is another example. Given the poor market conditions, we need a new approach to managing slab deliveries from NLMK to the Group's European companies. Savings in the supply chain have a positive impact on the competitiveness of the products manufactured by our facilities in Europe.

The traditional approach to managing rolling stock logistics by NLMK must also be changed. Our efforts here are directed at steadily moving away from specialized rolling stock, including flat cars, and switching to all-purpose rolling stock. This is more cost effective in terms of operating costs and frees us from investments. There is no specialized rolling stock on the market, and it must either be purchased independently or acquired through an expensive license. All of this increases our cash costs. The situation is the opposite in the case of all-purpose gondolas. They are available on the market, the supply exceeds the demand, and the operator rates are acceptable.

We bolstered our business relationship with the railways. In particular, we began hauling steel from Novolipetsk to the ports of Novorossiysk and



Tuapse jointly with Northeastern Railways and North Caucasus Railways according to the train schedules, without changing locomotives. This means that a steel train will travel from Lipetsk to the ports nonstop, as an express train.

All iron ore from Stoilensky to Novolipetsk is being hauled by the same method. We have received support from the West Siberian Railway management and are preparing to introduce new technology for hauling coal from the coal loading stations in the Kuzbass to Altai-Koks using trains assembled by the railway.

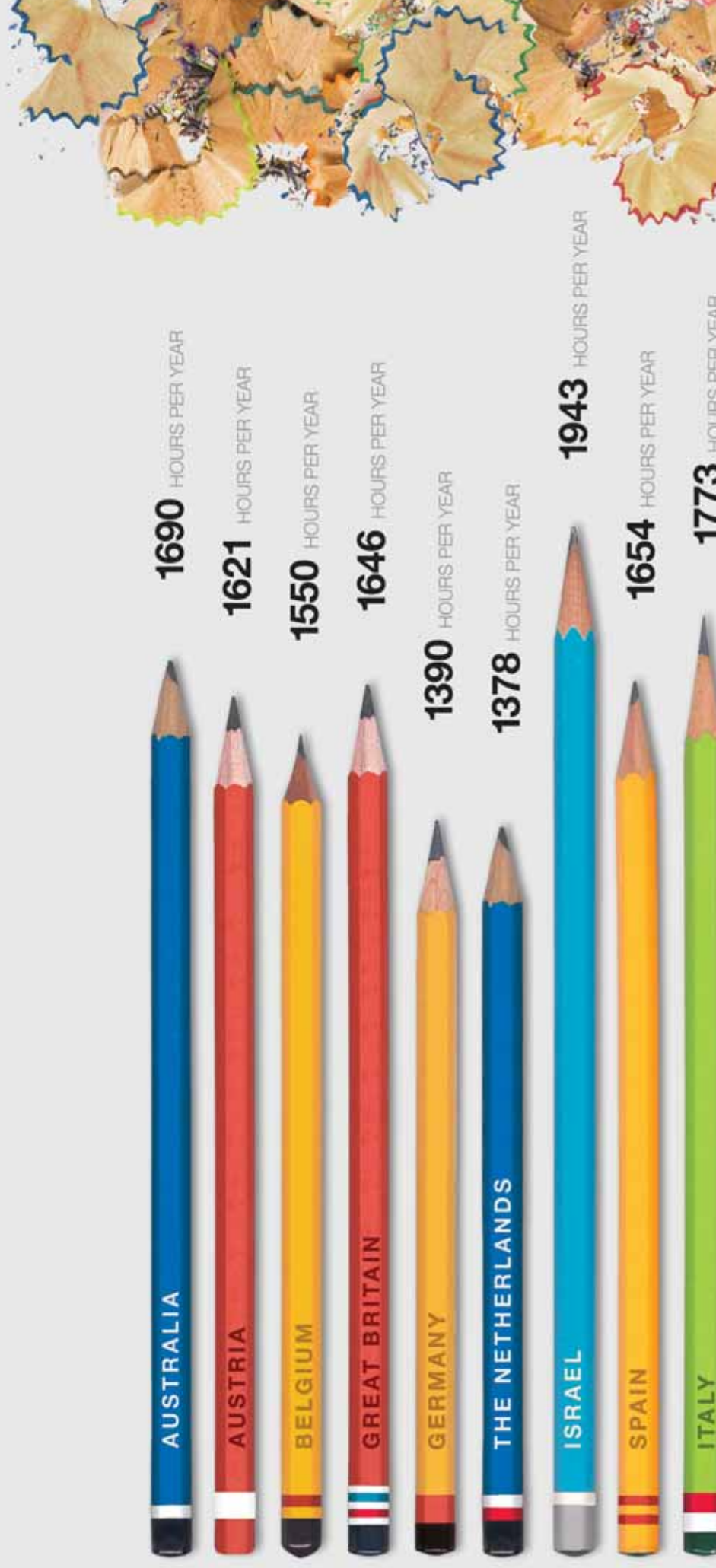
On the whole, during the second half of 2012, by optimizing our solutions, we expect to save more than RUB320 million (~US\$10.6 million; ~€7.9 million) in transportation costs.

All our actions are directed toward the same goal – improving efficiency and reducing costs. We are making every effort to ensure that NLMK Group's logistics are the best in the world, and I am confident that we have the capabilities to achieve this. ■

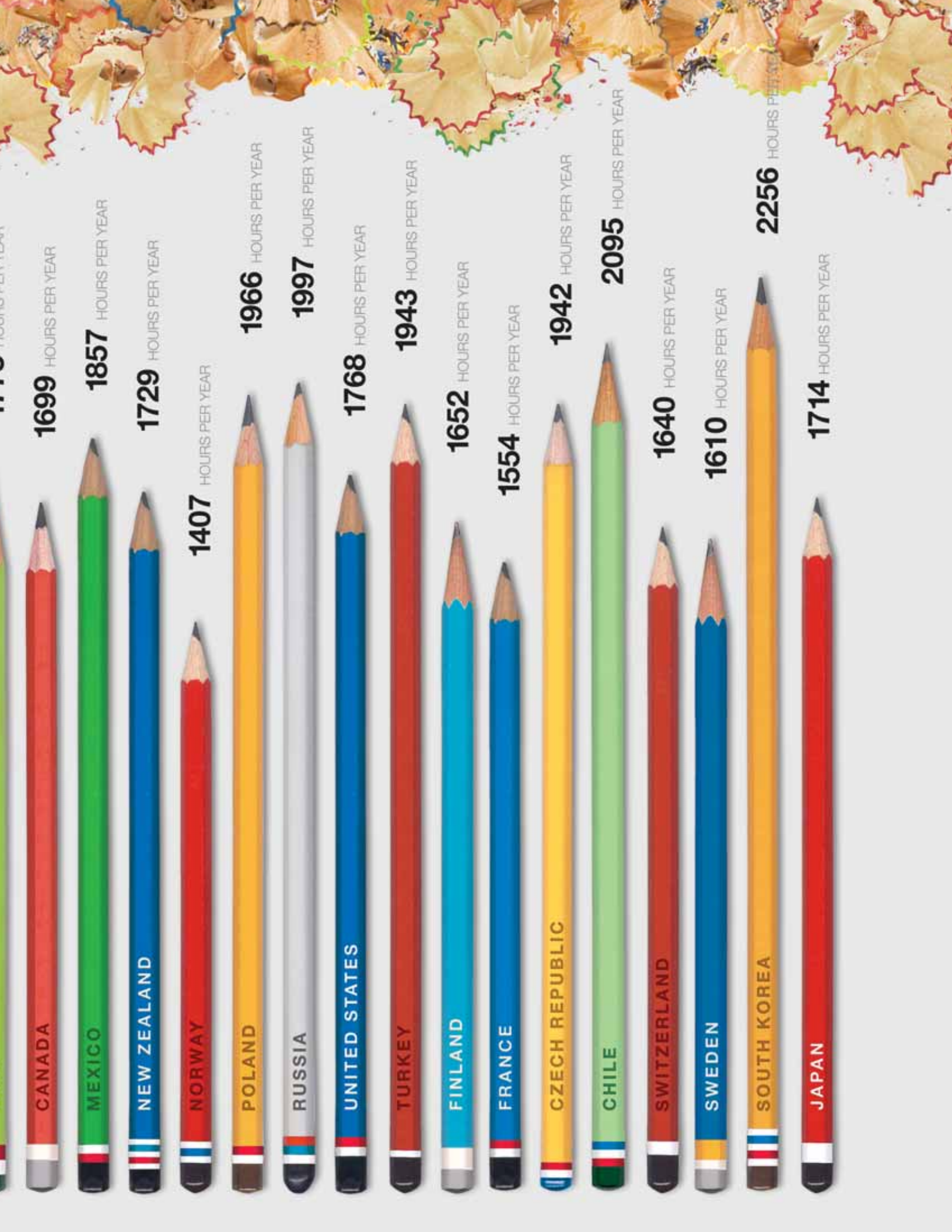


# IDLENESS AS THE DRIVER OF PROGRESS

PEOPLE INVENT THINGS AND INTRODUCE NEW TECHNOLOGIES IN ORDER TO WORK LESS. AS A RESULT, THE AVERAGE WESTERN EUROPEAN EMPLOYEE WORKS 1.5 HOURS LESS PER DAY THAN THEIR RUSSIAN COUNTERPART, BUT WITH GREATER PRODUCTIVITY. THE BOTTOM LINE IS SIMPLE: MORE INNOVATIONS AND HIGHER PRODUCTIVITY MAKE BUSINESS MORE EFFICIENT AND GIVE EMPLOYEES MORE SPARE TIME.







CANADA

1699

HOURS PER YEAR

MEXICO

1857

HOURS PER YEAR

NEW ZEALAND

1729

HOURS PER YEAR

NORWAY

1407

HOURS PER YEAR

POLAND

1966

HOURS PER YEAR

RUSSIA

1997

HOURS PER YEAR

UNITED STATES

1768

HOURS PER YEAR

TURKEY

1943

HOURS PER YEAR

FINLAND

1652

HOURS PER YEAR

FRANCE

1554

HOURS PER YEAR

CZECH REPUBLIC

1942

HOURS PER YEAR

CHILE

2095

HOURS PER YEAR

SWITZERLAND

1640

HOURS PER YEAR

SWEDEN

1610

HOURS PER YEAR

SOUTH KOREA

2256

HOURS PER YEAR

JAPAN

1714

HOURS PER YEAR



# NAILING IT

*Of all the many different metal goods in the world, the nail is perhaps the most ancient human invention. NLMK Group Special Correspondent **Marina Sayfieva** reports on how nails are made today*

The Ural Precision Alloys Plant (UZPS), which produces 885 different end products, including nails, is part of the Long Products Division of the NLMK Urals companies. Every day, the nail plant produces 200 tonnes of nails of various types, approximately 45 million units. UZPS is one of the leading metal goods companies in Russia by production volume: its production capacity is 0.45 million tonnes of metal goods per year. The plant produces 276 types of nail.

## NAILS FROM VEHICLES? WHY NOT!

The production of metal goods is the final link in a chain which unites several NLMK Group Urals companies. It all begins with NLMK Urals Vtorchermet. Scrap metal arrives here and, after processing, becomes the raw material for NSMMZ EAF steelmaking. Vehicles also become scrap metal. Cars sometimes arrive for recycling under their own power. This is a test of nerves for the car owner: right before his eyes, the claws and shear presses transform his peppy Moskvich into a neat block of scrap metal.

“When I prepare to crush a car, I have to first remove the fuel tank and tires,” says shop supervisor Alexander Baryshnikov. “Using the claws for this task is delicate work. It’s like trying to fill a soup bowl with an excavator.”

“Now, the scrap is ready for processing at NSMMZ: first it goes to the EAF, and then it is sent onto the rolling mill. The quality of the nails



Wire is the raw material for nails. A specific diameter is used for each type of goods



ultimately depends on the quality of the steel. There is no such thing as a grade 1 or grade 2 nail. All products must conform to the client's requirements."

"The next step is the UZPS steel wire plant. Wire is the raw material for nails. A specific diameter is used for each type of product."

## “ One out of every three nails in Russia is produced by UZPS ”

"Nail-making machines are sensitive and require the diameter of the wire to be constant over its entire length. The quality of the wire must be such that no further adjustment of the machinery is required," says plant engineer Natalia Biktimirova.

Wire arrives at the nail plant in coils weighing up to a tonne. Today, nails are manufactured on a compact automated production line. It looks like one machine, but it is actually several pieces of equipment packaged compactly in a single housing. There are 209 such units in the nail plant.

On average, one unit services ten nail making machines. The most labor-intensive part of the job is switching to a new size.

"The blades, matrices and punches must be replaced; all of this must be removed, disassembled and fitted. It takes a worker up to half an hour to make this adjustment. Sometimes several machines must be changed simultaneously, and, each of these machines has a personality of its own," says senior foreman Mikhail Nikolaev.

### EACH NAIL HAS ITS OWN PLACE

We distinguish between nails by applications and properties. The majority of the production is construction nails, with a shank diameter of 0.6–0.8 mm and length of 10–200 mm. For example, there are slate nails, roofing nails and felt nails, and each has its own specific uses and means of production. Galvanized wire nails, so-called finishing nails, are used for finishing and attaching veneer or parquet. Their job is to be unseen and corrosion-resistant.

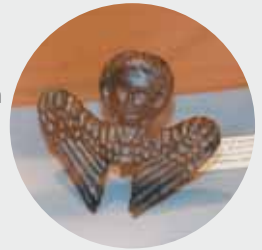
Nails with helical and circular shank knurling are made on German Wafios machines. The shop began producing these types of nails comparatively recently, in 2005. They are used in construction as high-reliability fasteners. The company's share in the domestic market for low-carbon steel goods is more than 20%. The plant is a consistent leader in the nails market – one out of every three nails in Russia is produced by UZPS. ■

Tatiana Alyabieva, crane operator.  
The wire is ready to be moved to the machine

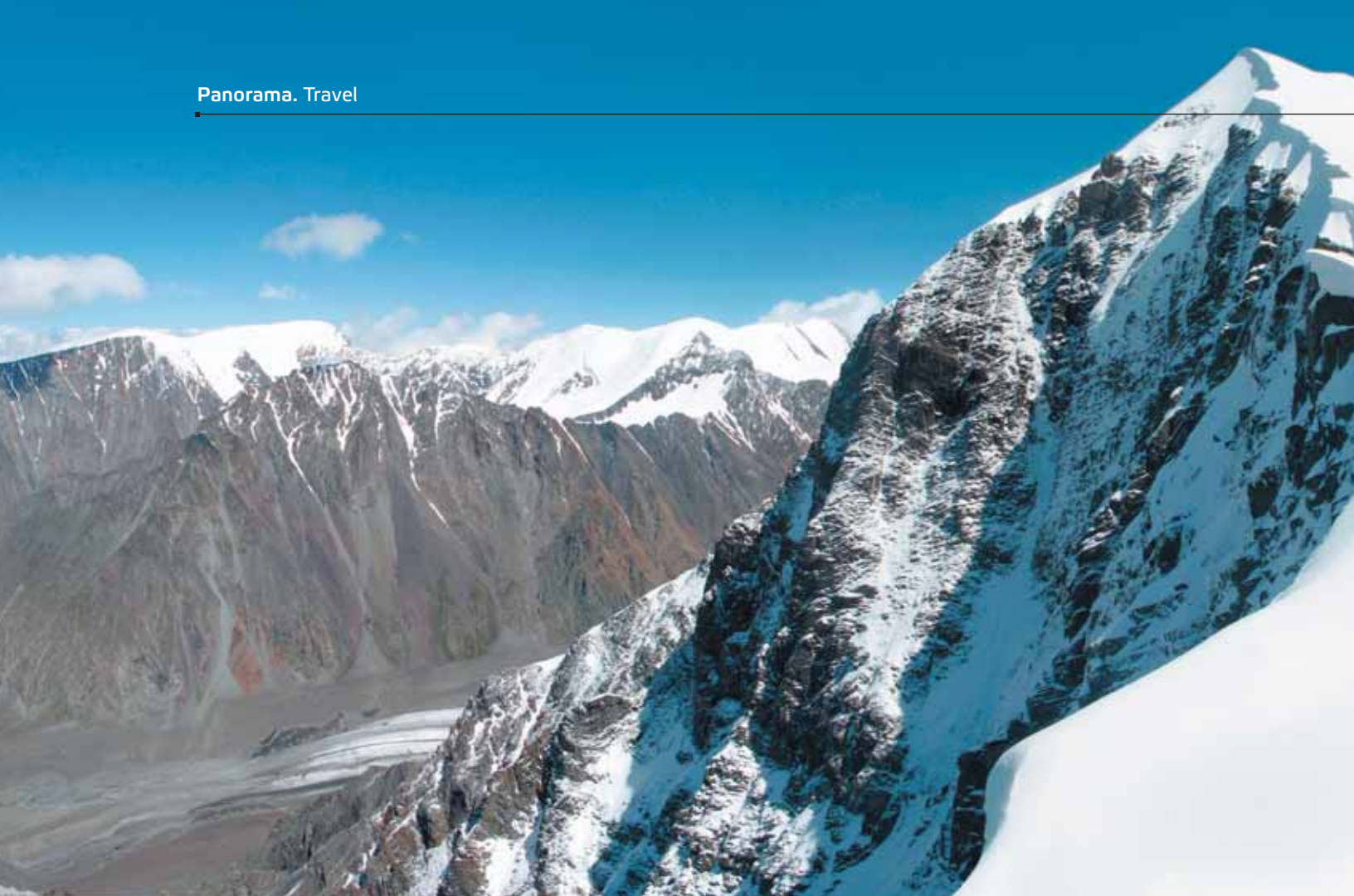


### Five facts about nails

The most valuable exhibit in the nail collection at the Demidov Center Museum is a talisman nail with an image of a cherub. These nails were driven into a gate; it was thought that they protected a house against evil spirits.



- 1 The first 'nails' were hewn from hardwood. Metal nails only appeared in the Bronze Age. Nails were forged in roughly the same way as spears. Several centuries later, they were made from copper or iron wire.
- 2 The first nails were incredibly expensive. Archaeologists have found the remains of boxes of nails deep underground in Scotland: when leaving, Roman soldiers buried their treasure.
- 3 The first machine for manufacturing nails was only patented in 1790. Since then, nails have become a common item.
- 4 Nails are a universal means of determining the historical age of a building. Nail production technology has changed rapidly, and therefore the date of construction can be determined from the type of nails used in the construction.
- 5 According to one story, nails were first produced in Russia by the Cherepanov manufacturers in Tagil. But there is another story that the plant in Revda was the first metal goods plant in Russia. Of course, many ironworking plants produced metal goods for their own needs, but those in Revda were the first in industrial production on an industrial scale.



# SCALING THE HEIGHTS

POLINA DYACHKOVA

*Altai-Koks employees conquer one of the highest peaks in Russia*

Company workers Vladimir Vaygel, an electrician, Dmitriy Gammer, a pusher operator, his wife Lyudmila, Vladimir Sergienko, and Galina Durneva from Rubtsovsk go mountaineering almost every year. “A group of five, to say nothing of the dog,” they joke. Only the men climbed to the summit of Belukha Mountain. Ahead of them stretched four-and-a-half kilometers of uphill climbing before they reached the summit, where even in summer there are glaciers underfoot, and lightning and rain mix in with the snow.

## THE DELONE PASS, MENSU GLACIER, AND THE GREAT BERELSKY SADDLE

The group was lucky: in the village of Tiungur from where they set off, they were able to hire a horse to carry their equipment and food to the first mountainous part – Lake Ak-kem. Otherwise, their backpacks would have weighed 45–50 kilos.

The women stayed at Lake Ak-kem for six days while the men pushed on. They descended from the moraine and, crossing the glacier, made it through the





Evgeny Yuriev

## THE SUMMIT!

The men woke before dawn and set off from camp for the summit at 5:00. By around 7:00, they were already at the point from which they would begin their attempt on the summit.

"We were lucky. There was a group of tourists in front of us preparing for the ascent, and their instructor was arranging the ropes for them," Vladimir Sergienko says. "He said to us, go ahead. As his group approached, we'd already 'leapt' ahead, and at 9:00 we were already at the summit!"

Emotions were varied:

"Of course, it's the highest peak we've climbed so far," says Vladimir. "All I felt was tiredness, tiredness, and more tiredness. But when Dmitriy lit the flare, that was something else – a feeling that's hard to express in words, but I really wanted to say 'We did it!'"

"We'd also promised the youth council at Altai-Koks that, if we could, we'd plant the company flag at the summit," Dmitriy Gammer adds, "and we did that too!"

They managed to take a few photos on the summit before starting the descent, but a blizzard suddenly whipped up and the group only had time to fulfill their promise to their colleagues before rushing back to camp.



## Fact

▼ A view of Belukha from space



Delone Pass. To do this, they needed 225 meters of rope as the slope was almost a constant 40–45 degrees steep. After several hours, they reached the Mensu Glacier.

"We had a pleasant surprise that day," says Vladimir Vaygel. "As we were climbing down from the pass, we bumped into some retirees from Tomsk. One of them was our former colleague, Alexander Rozhkov. He loves climbing. I've even been to Mountain Shoria with him. This year he was climbing to the summit of Belukha Mountain with a group of climbers from Tomsk. The old men were all very austere, bearded and tied together with rope. They were taking a more difficult route and were making good progress. Good for them!"

After spending the night on the Mensu Glacier, the climbers had to make a small, but rather steep ascent onto the Great Berelsky Saddle, which connects the Mensu Glacier to the Great Berelsky Glacier.

"There was a path there, so we could walk the whole way without even using ropes. All we needed were ice-picks," Dmitriy Gammer recalls. "We even got half a day's rest on the Great Berelsky Glacier."

**Belukha Mountain** is located in the eastern part of Russia. It is the highest peak in the Katun Mountains, and the highest peak in Western Siberia. Belukha has two peaks in the form of an uneven pyramid – the eastern (4,506 m) and the western (4,435 m). The mountain gets its name from the snow that covers it from its peak to its foot (from the Russian word for 'white', *beliy*).



Vladimir Vaygel

▲ **Dmitriy Gammer:** "The lightning struck the snow between our tent and the tent of some climbers from Novosibirsk. My heart stood still! At least I wasn't lying on the bare snow, but was on a mat and in a jacket or I'd have felt the charge!"

▼ On the Mensu Glacier

Dmitriy Gammer



▼ Vladimir Vaygel and Dmitriy Gammer at the summit of Belukha with an Altai-Koks flag



Vladimir Sergienko

“I’ve been afraid of heights since I was a child. I took up mountain climbing to deal with this fear and to prove to myself that I could do it

“We were stuck near the pass for almost a whole day. The icy wind was blowing the blizzard sideways, and there could have been an avalanche at any moment. It was snowing, then sleeting and something like a layered pie of snow was forming at our feet, but we were afraid of setting off an avalanche if we started to cross the pass,” says Vladimir Vaygel.

It got even worse when, along with the blizzard, a storm blew up.

“All night the blizzard raged and the lightning flashed,” remembers Dmitriy Gammer. “I’d never seen anything like it: a rainstorm below and a snowstorm above. It seemed that the lightning was striking somewhere nearby. Once, it even struck the snow between our tent and the tent of some climbers from Novosibirsk. It felt as if my heart stood still, and I started pinching myself to make sure I was still alive. At least I wasn’t lying on the bare snow, but was on a mat and in a jacket or I’d have felt the charge.”

## THE RETURN JOURNEY IS THE HARDEST

“The descent from the summit is always harder and more dangerous,” says Vladimir Vaygel, “as there’s a kind of euphoria and you can lose concentration... We had to turn around and make the descent in a three-step process, i.e. two steps down, ice-pick in, and two steps again. We did this for about 300 meters.

Yevgeny Yunev





Even I lost it for a moment: the rope slipped and I slid down on my back for literally a meter before managing to pull myself together. Luckily the snow was firm. The main thing was that no one was injured, and the mountain let us go. On the way back we met a group from Kazan who hadn't managed to reach the summit because of the bad weather. So Belukha doesn't submit to everyone."

The climbers made it safely back to the Great Berelsky Saddle and the Delone Pass, and they returned to Lake Ak-kem where the women were waiting. They went back to Tiungur as a complete group. Overall, they had covered about 120 kilometers in two weeks.

"I find other types of sports dull," considers Dmitriy Gammer, "But with this, you've got different landscapes, something new every day. You can touch it all with your hands and feet. Some people like to go to the beach or abroad, while this is like work, you've got to put your back into it. You get physically tired, but emotionally you're resting."

"What's more, it's sociable and you meet new people," adds Vladimir Vaygel. "You don't get many unfriendly types climbing, only those who know how to make friends and aren't afraid of difficulties. It's a victory over yourself. I, for instance, have been afraid of heights since I was a child. I took up mountain climbing to deal with this fear and to prove to myself that I could do it." ■

## Mountain climber's glossary

**Sleeping pad** — a camper's mat which provides insulation between the reclining body and the ground, allowing a more comfortable sleep and protecting the sleeping bag from moisture and damage

The symptoms of **altitude sickness** are nausea, vomiting, headache and listlessness. **Altitude sickness** may occur at altitudes above 3,500 m. The likelihood of altitude sickness increases when you ascend rapidly and decreases when you ascend slowly, since this provides the time necessary for acclimatization

**Crampons** — metal attachments for boots that allow you to walk over ice

**Self-arrest** — to hook an ice axe over a solid part of the ice or drive the ice axe into a glacier

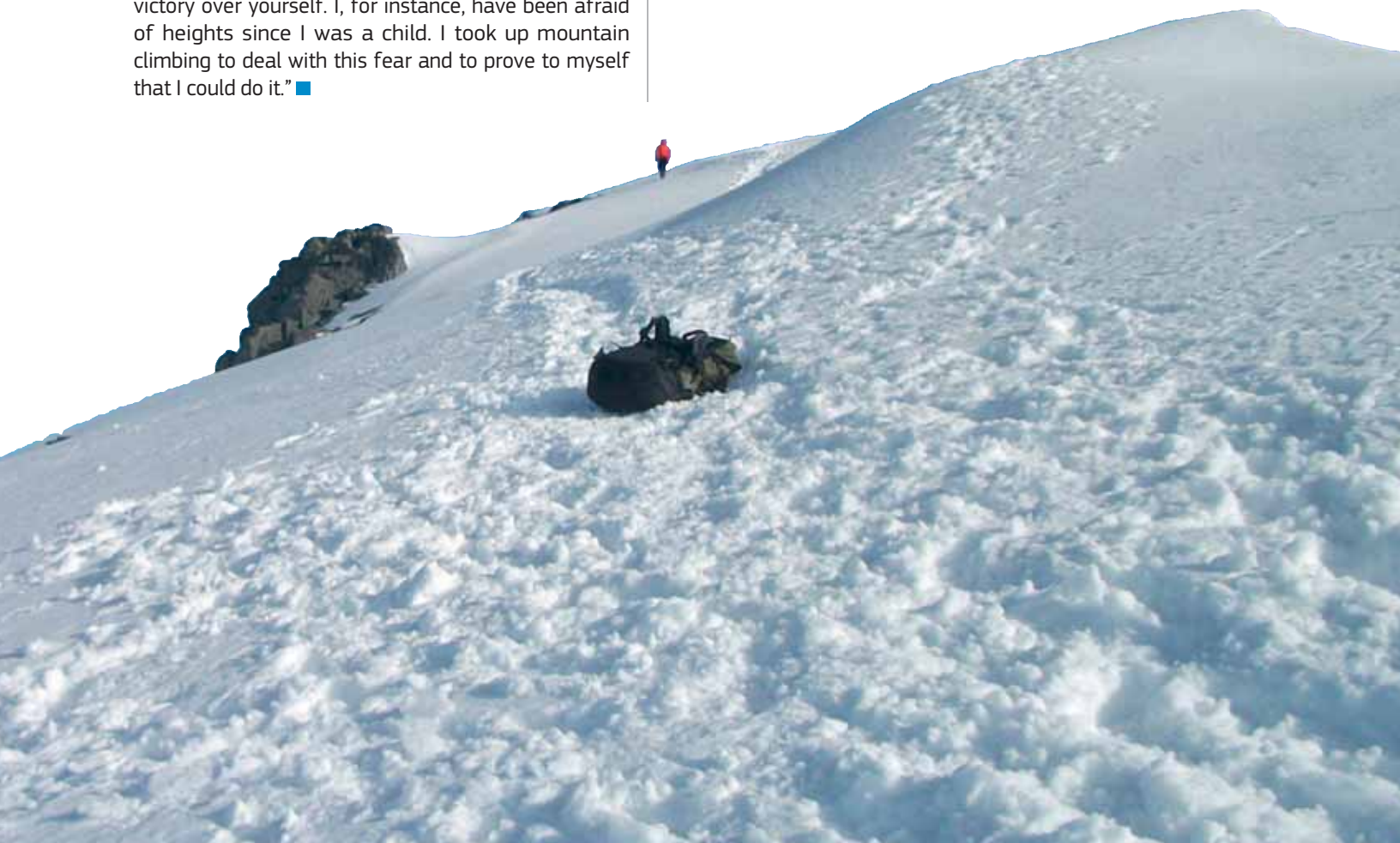


**Moraine** — a mixture of rocky debris, from gigantic boulders to silt formed as a result of the weathering of a glacier as it moves

**Nival zone** — the zone of rocks, glacial ice, and snow

**Saddle** — a low point somewhere in the center of a ridge through which passage is possible

**Cairn** — a trail marker in the form of a pyramid of rocks





## Next issue:

NLMK Europe: an engaging and committed environmental policy

Lean and efficient supply chain:  
Seven Steps to Success

Luxembourg the steelmaking capital  
of Europe