

HEAVY

NOKIAN HEAVY TYRES' CUSTOMER MAGAZINE

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A NEW KING
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nokian
HEAVY TYRES

'THE LIVING ROCK MASS KEEPS YOU ALERT'

➤ You don't see Tapio Toivoniemi at work very often. This is not because of laziness, but because he works in a gold mine hundreds of metres below ground level. The faint-hearted could be terrified of such an isolated working environment, especially after hearing news of different mining accidents from around the world. Tapio "Topi" Toivoniemi, however, is not faint-hearted.

"I'm not afraid, even though a certain kind of consciousness is always necessary. If you are not careful, you may end up hurt; the rock mass has its own activity. I might not see anyone else for an entire day. However, independence is the best part of this job."

"No one, apart from the rock, dictates my pace of work."

Toivoniemi's most important tool is a massive, remotely controlled mine loader used for emptying the excavated tunnel and transporting the material for processing. Two years ago, the machine was equipped with Nokian tyres.

"Nokian tyres are too good and durable for their own good; some other tyres would already be in this stage," says Toivoniemi with a laugh, pointing at a groove depth indicator with his knife. Topi and his 32-ton machine must complete numerous rounds to gain enough gold for one watch: one tonne of ore from the Orivesi mine contains approximately 7 grams of gold.

BEHIND THE WHEEL	Tapio Toivoniemi
MACHINE	Toro 500D mine loader. Manufactured in Sweden in 1985, overhauled at Tamrock, Tampere, in 1998.
TYRES	Nokian Mine L-55/26,5-25
WHAT	Transporting gold ore for Polar Mining Oy
WHERE	Orivesi, Tampere region, Finland

📷 Juho Paavola



Success comes from the field, not from the office

Nokian Heavy Tyres has recovered strongly after the recession. How was this success achieved, Sales and Marketing Manager Vesa Sampakoski?

– When the recession hit, we put our heads together and thought about the foundation of our previous success. We came up with a summary of our success factors: We must operate close to the customer, understand the working conditions and machines of our end-users and know what kind of service our customers need. Humble field work in these areas has enabled us to generate added value for our customers. The customers have rewarded our hard work, and now that the trends are turning upwards again, we are growing with them.

The winning position is also the result of specialisation and pioneering work. What does this mean in practice?

– In order to be a frontrunner, we must understand the customers’ needs and businesses. We focus on the basic things that have the most effect on the customers’ business and enable them to work efficiently and safely. Recognising these basics and steering the development of our products and services in an open-minded and goal-oriented manner keeps us at the spearhead of development. This cannot be achieved merely by brainstorming at the office, which is why we conduct a lot of field work with our customers. However, we cannot be everywhere at the same time; therefore, we select certain aspects in which we can and want to be the best.

How does it feel to be the world’s strongest?

– You must ask “the new king of the forest” about this. The king, with its three friends, can carry approximately 68 more sales and marketing managers in the forest than its fellows in this strong group. Read more about this on page 10 of this magazine.

We are passionate about developing even more functional solutions and tools for forest, field, road, terminal and mine work. Relying on our persistence and creativity, we can ensure you safe and efficient work. We provide flexible service in all cases to help you achieve your goals.

Nokian heavy tyres are sold in both the OE and replacement markets. The company works in close co-operation with original equipment manufacturers. Nokian Heavy Tyres Ltd. is part of the Nokian Tyres Group.

NOKIAN HEAVY TYRES is one of the world’s leading manufacturers of special tyres. Its key product segment is forestry tyres. Other important products are special tyres for agricultural machinery and a variety of industrial machine tyres.

What makes Nokian Heavy Tyres unique is its familiarity with extreme driving conditions and its respect for nature. We also lead a continuous, close dialogue with our customers.



HEAVY
Nokian Heavy Tyres
customer magazine

The magazine appears two
times a year in Finnish, English,
German and Russian.

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PRINTING
Hämeen Kirjapaino Oy
11/2010

ISSN 1799-3652

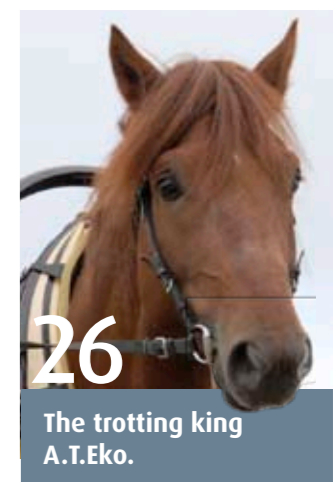
Cover photo by Juho Paavola

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The world’s strongest forestry tyre!

The new Nokian Forest King F is now the strongest forestry tyre in the world. Its PR (ply rate) figure, which describes the load-bearing capacity, is 24, while that of a typical forestry tyres is 16 or 20.

I did it again!



Succeeding at something is the greatest feeling you can experience during a workday. It would be great to experience that feeling more often, but is that possible? Yes it is, and you don't even need to buy anything or acquire new professional skills. The makings of success are within everyone's reach every day.

Know your goals

Before you climb in the cabin of your work machine in the morning, consider the elements of your day's work for a while. Don't think only of the work to be carried out, but rather what things will look like at the end of the day. A successful person has goals in life. You have to know where you want to go, otherwise you won't be able to get there!

We all want to succeed personally and professionally, don't we? That makes life so much more meaningful. But what does success mean in the end? Someone has said that success is not about reaching your goals but about striving for goals. In other words, simply aiming for a bull's eye can make us happy, happier even than actually hitting it. And when you're close to achieving one goal, the next goal should already be taking shape in your mind.

You can set goals with different time lines. After the day's work you can think about what the workplace and your life will look like in a week, a month, and a year. Try to close your eyes and visualise your goals. What will the work site look like after I've worked hard this week? What will I have accomplished within the next month? What kind of equipment will I use and who will I work for in a year?

You should paint a picture of your future that feels the best. Imagine how great you will feel when your dreams come true.

A positive attitude helps make each workday better.



Attitude makes a difference

Everyone has a bad day every now and then. Miserable weather, machinery breakdown, delayed contracts – these can be impossible to avoid altogether. It's natural to blow a fuse when faced with misfortune, but you might also want to consider if being in a foul mood serves a purpose. Or does it simply eat away your energy?

There are very few things in this world that are plain good or plain bad. It comes as a surprise to many people that they actually have a choice on how to deal with things they encounter. What if you decided to turn misfortune into fortune? What positive things could come out of

it? Adversities and misfortune offer you a chance of learning something – a positive attitude if nothing else! A positive attitude helps make each workday better.

You can choose your attitude, and in the same way you can choose the things you want to think about. Remember that your own thinking can take you very far. All the greatest deeds in the world were first just ideas in someone's head.

By the same token, your thinking could be the factor preventing success. We all have an inner voice that keeps rattling on during the day, and studies show it can say up to 60,000 things per day. When your inner voice keeps saying "This is not going to work out," silence it immediately! Instead, tell yourself "I can do this, I'm good at this". The brain is a miraculous instrument in that it believes everything you tell it, and even strives to make those things come true. >



You may fail occasionally, but that too is part of the journey towards success. Can you take the risk of not trying it?



Challenge yourself

Your work becomes a great deal more exciting if you make its goal to always become a little better. The better you become, the bigger and better the goals you can set for yourself. Read the most recent publications in this field to learn ways for personal and professional development. Follow the example of those you think are particularly good at something. Maybe there's a family member, a friend or a more distant acquaintance with a specific trait you could learn from.

Try performing your work a little differently. If you do things differently, could you be a little more efficient, more skilful or faster? Your brain likes to be stimulated. The more you learn new things, the easier the learning process becomes. Challenge yourself! Follow the example of a persistent little toddler. Walking is terribly difficult at first, but a child gets up time after time, because he so desperately wants to move forward. This is the passion you need when you are learning new things.

It is estimated that we need about 10,000 hours of practice to become a master at something. In a professional's career, it only takes a few years at work to reach that number. But what if you made it your goal to be a super master? Undoubtedly there are things to be learned after the 10,000 hours. ■

LITERATURE AND BACKGROUND MATERIAL:
 Brian Tracy: Goals
 Napoleon Hill: Think and Grow Rich
 W. Chan Kim - René Mauborgne: Blue Ocean Strategy

✍ Katri Syvärinen 📧 Ville Pirinen

Differentiate from others and help others

When you have skills and knowledge others need, you are also needed. The best way to secure future work is to ensure you have a unique skill or other element in your work that others cannot offer. It may be a small thing, but very important for the customer. Surprising competitive strengths can prove to be very efficient, and you may well end up winning entirely new markets. This way you can be sure there's demand for your work and your products.

Take some time on a regular basis to think

of ways to help your customers and your co-workers with their work. Rather than thinking of ways to invoice more, focus on ways of being even more useful to your business partners. If you can offer a unique, high-quality product and service, price becomes less significant. And if you reserve some time to plan ways of performing your work better than before, you can offer even higher added value to others.

To become a unique specialist, you may have to choose a path different from the one others have taken, and different from those you have taken before. If you want to achieve something, you must differentiate from competitors and from the old you. That's when you will succeed. You may fail occasionally, but that too is part of the journey towards success. Can you take the risk of not trying it?

Patience and a positive attitude

The Heavy magazine interviewed visitors at FinnMETKO, one of the biggest trade fairs in the heavy machinery industry, in September and asked them what helps them succeed at work.



JORMA ARVOLA is a forest machine contractor from Vihanti.
 "When I was younger, I had more energy than I do at this age. Now I have to make sure I recharge my batteries - for example by visiting this event! I get energised when I see a finished logging site; that gives me strength to carry on."



PENTTI KINNUNEN is an entrepreneur with a long track record in forestry and farming.
 "I feel good when I see the results of my work. When the forest is neat and well kept, it's great to look at for a long time. Positive customer feedback always makes me happy."



MARKKU RINTAMÄKI is a machine contractor who had a long career at M & H Rintamäki Oy but is now retired.
 "I've had good days and bad days in my career. I had many good days before the recession in the 1990s - the prices were right back then. If you want to succeed, you need to have the right temperament. You can't have a short temper in this line of work."



ARTO YLIKOSKI has his own harvesting company, Ylikoski Forest.
 "A positive attitude will get you pretty far, but being negative doesn't solve anything. If you lose your positive attitude for a moment, you just need to bring it back. The best workday comes from waking up a minute before the alarm goes off, seeing that the wife has packed the perfect lunch for me, the weather is great and there's a good forest to work in."

TAMARA LANNIK is from Russia and studies agriculture and forestry in Finland.
 "I think success at work comes from being interested in and enthusiastic about your work. I like studying, and this is precisely the occupation I want for myself. Once I complete the study programme, I will go back to Russia and will probably work in agriculture. My whole family is in this line of business - it's our thing. It also means my family will help and support me in my work."

JUHA PUKKALA is a service entrepreneur who learns new things every day when he services machinery.
 "A machine breakdown can make an entrepreneur anxious. Being an entrepreneur myself, I understand the difficulty of the situation. I have to respect the customer. The greatest thing about my job is when I get the customer to calm down and manage to sort out the machinery. Assignments abroad are the most interesting and challenging ones. If we don't speak the same language, we use pantomime and theatre to figure out the problem. Finally I get the machine fixed, and then we smile and shake hands. That feels good."

NIKO LEPPÄSALMI, a forest machine operator, likes the independence his work offers.
 "The feeling of success comes from a clean harvesting trail and the sense of accomplishment. I get to plan my workday from start to finish myself, and I never have two identical days. But it does take character to go out into a dark forest for a long workday. You have to be strong and never give up!"



The new king of the forest

Stronger than ever, more load-bearing capacity than ever – the new Nokian Forest King F is now the world's strongest forest machine tyre.

The new product in the Nokian Heavy Tyres range is the cross-ply Nokian Forest King F 710/45-26.5, which is designed especially for CTL (cut-to-length) machines and tailored for demanding conditions. On a soft, stumpy, stony or other kind of challenging surface, the improved operating properties of the tyre come to the fore.

A distinguishing feature of the Nokian Forest King F is its strong structure and load-bearing capacity. Its PR (Ply Rate) number is 24 – tyres of the same size typically have a PR figure of 16 or 20. In the forest, the tyre's load-bearing capacity has risen from 6,900 kg to 8,000 kg.

The increase in load-bearing capacity is considerable, as it corresponds to 4 m³ of pine wood harvested in summer by 6-8-wheeled forest machines. The operating reliability of the tyre has also increased, as a result of which full loads can now be reliably transported.

Pioneering and precise material development work is behind the improved properties. New stronger materials enable a durable structure

and higher operating pressure without the weight of the tyre increasing. The tyre is particularly designed for use in the back bogie and primarily with tracks.

– The tyre's design supports the position of the tracks and chains, so that they sit and stay well on the tyre even in damp conditions when grip is weak, says **Martti Päivinen**, Product Development Manager at Nokian Heavy Tyres.

– Straight sidewalls prevent damage to the sides. Thanks to the tread pattern groove profile, which deepens on the shoulder and the straight tyre sidewall, the tyre cleans easily and has increased durability and strength. Due to the wider tread, the tyre's contact area is also larger, which reduces surface pressure. The wide contact area and low surface pressure treat growing trees and sensitive undergrowth softly, says Päivinen. ■

» Take a closer look at our strong novelty:
www.nokianheavytyres.com/the_worlds_strongest_forest_tyre

The new Nokian Forest King F

- Size: 710/45-26.5
- PR figure: 24
- Load-bearing capacity: 10 km/h / 8,000 kg (capacity in forest)
- Balanced shape, very stable in use on CTL machines
- Durable straight sides and tread pattern.
- Excellent grip and reliability in use with tracks and chains

Nokian Forest King F size range:

- 710/40-22.5 PR 16
- 710/40-24.5 PR 20
- 600/55-26.5 PR 20
- 710/45-26.5 PR 16
- 710/45-26.5 PR 20
- 710/45-26.5 PR 24 **New**
- 750/55-26.5 PR 20
- 780/55-26.5 PR 20 **New**
- 800/40-26.5 PR 20

An addition to the Nokian Forest Rider range

Earning a world reputation with its excellent traction properties and driving comfort, the Nokian Forest Rider forestry tyre range will be complemented with two new members, both tailored for cut-to-length machines. The new size, 600/50R24.5, is especially well-suited as a bogey for smaller machines, while the bigger size, 710/70R34, is designed e.g. for six-wheeled harvesters.

The sturdy radial structure translates into a large contact area that gives the tyre impressive grip and a sensitive, comfortable driving response. The traction and moving capacity of Nokian Forest Rider is 12 per cent better and the rolling resistance 5 per cent lower than those of a traditional cross-ply tyre. Due to the low rolling resistance, the tyre is also a fuel-saving and environmentally friendly choice.

Thanks to the larger contact area, the Nokian Forest Rider has a lower surface pressure than a cross-ply tyre, ensuring that the tyre does not sink in soft terrain. ■

» For more information on tyres used by thousands of timber harvesters around the world:
www.nokianheavytyres.com/products_int

Nokian Forest Rider

- Excellent mobility
- A durable structure and patented side puncture protection
- Cleans easily and does not damage the soil in soft forest terrain
- Comfortable driving response and minimal vibration
- Low rolling resistance, smaller fuel consumption.

Nokian Forest Rider sizes for CTL machines:

- 650/45R24.5
- 600/50R24.5 **New**
- 600/55R26.5
- 710/45R26.5
- 800/50R26.5
- 600/65R34
- 710/55R34
- 710/70R34 **New**





Environment + grip + driving comfort = The new Nokian Hakka Green summer tyre

Nokian Tyres has launched the first tyre in the Nokian Hakka summer tyre range, the Hakka Green tyre. The ultra-lightly rolling new tyre utilises the Venturi effect that causes the downforce known from Formula racing cars, the shape of a golf ball surface and Nordic pine oil.

Today, environmental aspects represent one of the key criteria for tyre selection, which is why environmental friendliness was at the core of Nokian Hakka Green's development work. The rolling resistance of the Nokian Hakka Green is 15 percent lower than that of the Nokian Hakka H, its test-winning predecessor. The new generation summer tyre is estimated to reduce an average driver's fuel consumption by 41 litres a year. The reduction in carbon dioxide emissions from driving would be equivalent to a robust driver's weight (106 kg). Designed for the Nordic conditions, the tyre is extremely stable and safe and performs superbly in wet conditions. The Nokian Hakka Green will be available in stores in spring 2011. ■

» For more information on the innovations used in the Nokian summer tyres to promote safety, environmental friendliness, driving properties and durability, please visit: www.nokiantyres.com/summer



No weather is a surprise for the 75-year-old Hakkapeliitta

With the right tyres, driving in the wintertime is not a problem.

The Nokian Hakkapeliitta is the right tyre for all types of winter weather: snow, ice and slush. The tyre performs effortlessly in the world's most demanding winter conditions.

The Nokian Hakkapeliitta has been leading the way in safe winter driving since 1936. It has won more tests than any other winter tyre in the world. ■

» Learn more about tyres that make driving fun in the world's most challenging winter conditions: www.nokiantyres.com

New Vianor Industrial – expert answers for professionals

The Vianor tyre chain has co-operated with Nokian Heavy Tyres to develop the Vianor Industrial concept, as a result of which machine entrepreneurs and contractors will be offered professional solutions, exploiting the latest innovations and operating models in the industry.

– Among the strengths of the new concept is Vianor's improved ability to be nearby, understanding the customer and predicting different tyre-related needs, and to develop solutions to problems on both the product and service sides. Co-operation with Nokian

Heavy Tyres enables the flow of information and an unbroken chain of development work between product manufacturers, retailers and end-users, says **Juha Lehtinen**, Vianor's Marketing Manager for machinery tyres.

This unique concept is an answer to the need for an increasingly technical service offering for customers using heavy machinery. In Finland, Sweden and Norway, more than 20 sales outlets are already operating based on the Vianor Industrial concept. The professional skills of the specially-trained sales personnel

is also at the disposal of the customers at Vianor's other sales outlets, which, if necessary, can consult to obtain the best solutions. In the future, the number of sales outlets involved in the Vianor Industrial concept will increase and expand all over the world. ■



Driving result an entire season longer

The durability of the Nokian Country King agricultural tyre designed for year-round use has been maximised with a new rubber compound. This flotation radial tyre moves easily both on the road and in the field and is up to 20% more wear resistant than before. Other improvements in the block-patterned special tyre include better puncture and cut resistance, which is an increasingly valuable characteristic in demanding and varying trailer use.

"For agricultural contractors, this means the driving result is up to a whole season longer, and the tyre offers improved reliability in tough and consuming transition on varying surfaces. Less tyre damage means more efficient working hours. Other top characteristics of the Nokian Country King, such as reliable grip, very low rolling resistance and excellent driving comfort, have

remained unchanged," **Martti Päivinen**, Product Development Manager for Nokian Heavy Tyres explains.

The fuel-saving Nokian Country King is a recommendable choice for large agricultural machines and trailers when moving more on roads than in fields. The heavy machines and loads used for this kind of work require tyres that have good load-bearing properties and function reliably. When carrying heavier loads, the Nokian Country King's contact area expands, which improves its load-bearing capacity. Thanks to the sturdy structure, the trailer will not sway or move during loading. ■

» More information is available at: www.nokianheavytyres.com/products_int

Nokian Country King

- Flotation tyre with high load-bearing capacity, stable and comfortable driving
- Low rolling resistance reduces fuel consumption
- Cleans quickly and easily



Test result: Nokian Forest Rider is the most gentle forest wanderer

The first functional radial forestry tyre in the world, the Nokian Forest Rider, is gentler on the forest terrain than traditional cross-ply tyres. This was proven by the initial results of the new surface pressure test conducted in Germany. The contact area and surface pressure of Forest Rider tyres with different loads and inflating pressures were measured by the University of Göttingen.

The test results can be compared with the extensive forestry machines' surface pressure tests conducted at the same university earlier. The Nokian Nordman Forest and Trelleborg T-422 tyres were also included in this test.

The final results and their analyses will be completed later this autumn. We will tell you more about the successful test performance of the Forest Rider in the next issue of Heavy. ■

News directly in your e-mail box

More information on new products. Help with tyre pressure monitoring. User experiences and information about heavy tyres and their use. Join our mailing list and order news conveniently in your own e-mail box. ■

» www.nokianheavytyres.com/order-news

The map shows your nearest tyre outlet

Whenever you have access to the Internet, you have access to the contact information of your nearest Nokian Heavy Tyres retail outlet at http://www.nokianheavytyres.com/retail-outlets_int.

We are now offering our tyre users or those planning to buy new tyres the easiest way to find the quickest route to your local tyre outlet. The new Google Maps search based service is always up to date. Try it to find out just how easy it is! ■

Despite the early hour, the late summer morning is sunny and warm as the farmer reaches his workplace in a small Spanish village nestled between the Iberian and the Pyrenee Mountains. The land is too dry and barren to provide a livelihood for the farmer; therefore, he earns some extra money by operating his tractor in a nearby quarry.

Disbelief gave way to insight



It's almost like driving a regular car.
José Antonio Binaburo

"I HAVE BEEN FARMING in Fuentetodos for almost 30 years, primarily wheat and barley. Planting season is in November, and harvesting takes place at the turn of June and July.

Some years back, I was able to earn a living from farming, but recently I've taken up other work as well. I use my tractor to pull a trailer at the nearby quarry. When fully loaded, the trailer weighs 22 tons. I clock up 250 kilometres and eight trips there and back every day.

The working relationship between the farmer and his co-worker is very close. José Antonio Binaburo and the Fendt 712 tractor have been working together in the fields for days, weeks, and months. Yet any change – even if it only means different tyres – can initially be a glitch in the relationship.



WHEN THEY INSTALLED Nokian TRI 2 tyres on my tractor in December 2009, my first reaction was fear. I just didn't think the new tyres would work. During the first test drive I pulled a plough on a muddy field, and the tyres slipped. I was not at all convinced. I was pleased with the self-cleaning properties of the TRI 2 tyres but still didn't fully trust them.

I had a few sleepless nights, and then I rang the company that installed the tyres. I asked for someone to come and replace the tyres. But they refused, and asked me to trust them. So the tyres stayed.

But just like a sharp-edged stone gradually becomes smooth, it takes time in a relationship to build trust. José's solid experience later combined with an insight that made him even more competent and respected.

THE WINTER WAS COLD and wet, and it was not until the turn of February and March that we were able to start work. That's when I realised that by reducing the tyre pressure to 1.8 – 1.9 bar the tyres worked much better at pulling the plough than I had expected. Similarly, driving on the road with the trailer was considerably more comfortable. It's almost like driving a regular car. Now I change the tyre pressure depending on the type of work: When I pull the plough I use 1.9 bar pressure, while on the road with the trailer I use 2.5 bar pressure.

The tyres seem highly durable. After 700 working hours, the groove depth was measured. The tyres had only worn one millimetre. This translates into more than 9,000 hours of expected service life compared to the 5,000 – 6,000 hours I was previously used to. The tyres have remained intact; I haven't had a single cut or puncture, even though there are sharp-edged stones everywhere. I'm also saving fuel, especially when pulling the plough. I've been able to save up to 4,000 euros a year.

The tyres have made me pretty famous in this region." ■

✍️ José Javier Martínez Izquierdo



Fuentetodos

Home of the painter of royalty

Fuentetodos is a small village in northeast Spain, about 40 kilometres southeast of the city of Zaragoza. The population of the village is less than two hundred, so what makes it so popular with more than 25,000 tourists annually?

The answer is: It's the birthplace of **Francisco de Goya**. Goya's former home is now a museum and a popular place to visit among art lovers. Francisco de Goya was born in the village in the mid-1700s and spent his childhood there. He later became one of the most popular artists in Spain throughout history. He was the official painter of royalty and painted several portraits of the Spanish royal family.

An agile 8-wheeled straddle carrier is quick and strong Powerful performance



Straddle carriers twist and turn smoothly between the rows of containers, picking up containers weighing dozens of tonnes, and carrying them to the wharf where a massive harbour crane lifts them onboard. Work at the harbour is demanding and at times performed at high speed. Safety is the number-one priority, which is why the port operators set big demands on the tyres of the 8-wheeled machine, particularly when it comes to wear resistance and driving stability.

Work at container harbours is hectic and schedules very tight. Despite the rush, the overall ambience in the harbour is calm, and work is extremely carefully organised. With amazing ease, reach stackers and terminal tractors move containers to their precise locations. The tirelessly moving straddle carriers, 8-wheeled multi-purpose machines that look >



Steveco operates more than 200 rubber-wheel machines in Kotka



Steveco Oy is the leading port operator in Finland and the market leader in forest industry transportation. Steveco operates more than 200 wheel-mounted machines in the Mussalo and Hietanen harbours in Kotka. This explains why the Steveco repair centre in Mussalo, Finland's largest container harbour, spends a lot of time on tyre servicing.

"Fuel and tyre costs are a major cost item, which is why we keep a close eye on them," says **Antti Sipola**, the foreman in

charge of the repair centre.

"Safety is our first priority. That's why we don't use retreaded tyres in straddle carriers. If the tread suddenly came off, it could cause a dangerous situation."

Finnsteve is the largest operator in Vuosaari harbour in Helsinki



The Vuosaari harbour in Helsinki was opened in 2008, and its terminal area, built above the water, is the most modern in Finland. With its 185 rubber-wheeled machines, Finnsteve Oy – a part of the Finnlines Group – is the largest operator working in the harbour.

Tyre maintenance is high on the agenda in Vuosaari, too. Tyres to Finnsteve are supplied by Vianor, but Finnsteve's own mechanics remove and install the tyres on the machines.

"The tyre pressure is very low when tyres are replaced. We don't want to take any risks with the installations. The straddle carrier drivers always inspect their tyres before they take off. Both tyres and rims are examined more carefully in connection with servicing," **Ari Lehtinen** explains. Lehtinen is in charge of operations at the repair centre employing fifteen mechanics.



Here, 10 metres up, you really learn to appreciate tyre stability, stevedorer Timo Pyykkö sums up.

like the steel frame of a building, are the ones doing most of the work. The machines move freely on rubber wheels and make effective use of the entire area leased by the port operator.

Driving a straddle carrier requires special skills, and the brisk wind blowing from the sea adds a considerable challenge factor to the task. The straddle carrier's dead weight is about 60 tonnes. When moving a heavy container, the eight tyres have to carry a load of up to 100,000 kg. The driver sitting in the cabin 10 metres off the ground appreciates tyre stability, which allows the driver to fully concentrate on handling the containers.

Harbour tyres wear differently than many other tyre types. In stevedoring, machinery is required to make repeated sharp turns. Particularly in a straddle carrier, the tyre abrasion against the surface is very strong. The tyre tread must be durable but not so hard as to cause any additional vibration. In addition, there are specific demands on the tyre body structure and the rubber compounds used. Minimum heat build-up improves the tyres' wear resistance while stability makes working more efficient.

According to **Ari Lehtinen**, repair centre manager at Finnsteve Oy, a company operating in the Vuosaari harbour in Helsinki, the tyre surfaces in straddle carriers usually wear down to an angular, blade-like shape, which causes vibration. The inner and outer tyre surface, as well as a pair of tyres on the same axle, wear asymmetrically.

"We are prepared to pay a little extra for a high-quality tyre if the driving response and user experiences are good," says **Antti Sipola**, foreman responsible for repair work at Steveco Oy, a company operating at Kotka harbours. ■

📷 Tatu Haveri



A smooth ride on durable tyres

In an eight-wheeled straddle carrier, the tyres on the driving axles in the middle are exposed to the toughest wear. Meanwhile the driving tyres in the corners wear unevenly, causing vibration.

At the Vuosaari harbour in Helsinki, the Nokian HTS Straddle tyres have been in use for a year.

"Based on a one-year experience, Nokian HTS Straddle seems to be at least as durable as the competing tyre brands. We are pleased with the wear resistance," concludes Ari Lehtinen, Finnsteve's repair centre manager, as he studies a Nokian tyre mounted on the drive shaft.

The machines drive on asphalt and concrete surfaces, which in Vuosaari are salted in the winter to prevent ice formation. But when it snows, the tracks between the stacks of containers can get packed with snow, and in these conditions good grip is essential. Similarly, on wet surfaces good grip is required, both longitudinal and lateral.

In the Mussalo harbour in Kotka, one straddle carrier has been fitted with Straddle tyres fairly recently, which means experiences have only been gained over a short period. Antti Sipola, the foreman in charge at Steveco's repair centre, expects the tyres to offer durability, even wear and good stability.

"It's possible that tyres providing better stability allow us to drive more safely into a corner. Good driving response enables the driver to trust the tyres and to safely pick up speed," says Sipola, examining the tread on the new tyres.

A moment later, **Timo Pyykkö**, a stevedorer, climbs into the cabin of a straddle carrier and drives a few corners to get a feel of the new Nokian HTS Straddle tyres.

"It may well be the case that these are the most stable tyres I've ever driven on," Pyykkö says, with 18 years of stevedoring experience. ■



Nokian HTS Straddle – Beyond All-Steel

- Excellent hourly output in varying and demanding conditions
- Superior stability makes working safe and efficient
- Low rolling resistance reduces fuel costs
- High load-bearing capacity, reliable grip
- Size: 16.00R25
- Load-bearing capacity: 14 000kg/1 000 kPa/25 km/h

Nokian HTS Straddle – stability and durability

The Nokian HTS Straddle combines excellent stability and high load-bearing capacity with extreme wear resistance. The unique Beyond All-Steel structure guarantees better motion absorption and driving comfort than traditional harbour tyres, as well as low rolling resistance.

The new tyre was developed from the outset with the special requirements of harbour work in mind, and development work was carried out in co-operation with the world's leading equipment manufacturers. The tyre properties are closely monitored to ensure smooth performance at work. When the machine tilts, a low-quality tyre with a soft body may give in an inch or two more, increasing the swaying motion up in the cabin.

Instead of the traditional block pattern, the Nokian HTS Straddle features winding grooves in an otherwise even surface. The grooves make the tyre more stable and offer excellent driving response. They also slow down tyre wear and prevent cracks, and help the tyre maintain its original shape. ■

» For more information on Nokian harbour tyres and their users, go to: www.nokianheavytyres.com www.finnsteve.fi (also available in English) www.steveco.fi/en/



In all conditions, in all cardinal directions

Nokian Heavy Tyres is known as an expert in the demanding Nordic conditions. However, the world of heavy tyres spans the entire compass. The properties tested and proven in the north are convincing users worldwide. As a global business, Nokian Heavy Tyres understands various special conditions. What is extreme in one climatic zone may be an everyday phenomenon in another. Machine operators around the world know that the right tyres suitable for their particular usage conditions have a key impact on the flawlessness, economics and safety of work.

AUSTRIA: Gentle park maintenance

The mild Austrian climate favours green valleys. People can enjoy parks and golf courses throughout the long summer. However, these sites require regular maintenance. Optimal tyres are gentle on these sensitive environments and enable maintaining their premium condition.



VIENNA

Average highest temperature: +25°C
Average lowest temperature: -2°C
All-time highest temperature: +37°C
All-time lowest temperature: -22°C

BRAZIL: Efficiency at sugar cane farms

Vast sugar cane farms flourish in the tropical climate and fertile soil. Brazil is one of the world's biggest producers of sugar cane. For a long time, the sugar cane crop was harvested manually, but nowadays efficient harvester machines are used. The unique new tyres, manufactured using purified, low-aromatic oils only, are environmentally friendly.



SAO PAULO

Average highest temperature: +28°C
Average lowest temperature: +12°C
All-time highest temperature: +38°C
All-time lowest temperature: +2°C

RUSSIA: Reliability even in extreme conditions

The vast differences between seasons are very concretely present in Russia. For example, the mines of central Siberia experience extremely freezing winters and reasonably hot summers. This makes them very demanding environments. High-quality mining tyres designed for demanding conditions help mining machine operators work safely even in difficult situations.



YAKUTSK

Average highest temperature: +23°C
Average lowest temperature: -42°C
All-time highest temperature: +36°C
All-time lowest temperature: -58°C

AUSTRALIA: Durability in heat

The northern parts of Australia are hot, and the central parts are also warm. Moreover, Australia is the driest continent on Earth. Its most significant natural resources are deposited in the rich soil. The challenging mine environment requires tyres featuring materials and structures designed to endure particularly hard use. The busy work cannot be interrupted for a minute.



KALGOORLIE

Average highest temperature: +32°C
Average lowest temperature: +5°C
All-time highest temperature: +46°C
All-time lowest temperature: -3°C



Usability is an integral part of machinery design

From ergonomics to user experience

Prior objective: Ergonomics

Current objective: Overall usability

Future objective: Machinery operation is a user experience

“Demands on usability are growing in sync with the growing number of software in machines.”

A good working relationship between heavy-duty machine and the operator is of vital importance. Machinery with good usability features adds more productivity and pleasure to work. A decade ago, the concept of usability primarily referred to the physical strain of work. Now the objective is to ensure the machine is in every way designed to make work easier and smoother.

Usability is already an obvious part of product development in a number of consumer products such as home electronics. Gradually, companies engaged in the more traditional sectors of industry, such as mechanical engineering, have begun to hire usability specialists; but more are still needed.

In 2007–2010, the Tampere University of Technology, together with partner companies, conducted a joint research project (KASTE) in which usability was included in the mechanical engineering product development stage. Companies have, in fact, become aware of the need for

usability specialists, but the recession cut down investments in product development.

“Demands on usability are growing in sync with the growing number of software in machines. The first steps have now been taken to making machinery usability a key objective from the very beginning,” says **Jarmo Palviainen**, a researcher at TUT’s Human Centered Technology Department.

It is important to learn how to combine traditional machine design engineering and new software engineering in product development. According to a survey conducted among final-year forestry students, machines are currently fairly good in terms of basic usability.

“Users find the repeated basic functions in forestry machinery practical and sensible. Meanwhile, there is room for improvement in less routine-like tasks such as site preparation. Another challenge for product development is the fact that a part of work machinery operators in developing countries are illiterate. Not every-

one has grown surrounded by technology like us Europeans,” Palviainen points out.

One of the companies involved in the KASTE project was John Deere Forestry. **Arto Peltomaa**, Development Manager, says companies have made efforts to improve usability for quite some time, but enthusiasm has been growing in the past few years.

“Through our participation in the research project we have been inspired by other sectors of industry on how to develop our own product development processes. Usability design has a higher priority these days, and this reflects on customer satisfaction, too,” Peltomaa comments.

What’s the best place for gauges?

Some years ago, attention was paid to ensuring enough room for a maintenance man to work; now the focus is on the needs of the machine operator. What type of work does the machine perform? What information does the operator need when performing different tasks? Are

the necessary controls and gauges in the right places?

VTT Technical Research Centre of Finland has been designing mining machinery, tractor and crane cabins in a virtual environment. The end-user gets to test the machine for functionality even before it is built.

“With a simulator, we can make sure the operator can see in all the necessary directions. We also design the layout for the machine; to find the best place for various devices that allow the operator to easily access the information he needs for different tasks,” explains **Kaj Helin**, Team Leader at VTT.

Simulators for learning how to fly a plane or drive a car have been around for a long time. The main difference between those and a design simulator is that a design simulator allows changes during use: A bucket or a frame can be replaced if necessary, or another panel may be added in the cabin.

“A virtual environment delivers the best

benefits in the early stages of design engineering. Small details are not worth simulating as it is more complicated and more expensive. But if you can find errors as early in the design chain as possible, fixing them is cheaper, too,” Helin underlines.

Users sometimes make simple requests that are essential in terms of comfort, such as adding a water bottle holder in the cabin. It is important to design the cabin as a whole.

“We bring the end-user, ergonomics and usability specialists and the designers of the cabin and other parts together at the same time. If all of a sudden we need to know if, say, the structure of the bucket can be changed, we have the right person present to answer that question.”

An enjoyable machine

Good usability properties promote work efficiency and comfort. This means operators’ well-being at work improves, leading to fewer work-related illnesses and absences. At the same

time, the machines become more productive. All these things make the industry more attractive.

In the future, benefits may be even more diverse. The researchers have already taken a step forward and are now trying to determine the makings of a good user experience. The future objective could be to build a work machine designed to motivate the user and to add pleasure to the work.

“When you spend 16 hours in the forest, it would be helpful if the job felt meaningful. Maybe in the future we could design indicators that allow the user to monitor his own development and work performance. And when the operator gets to work with equipment that looks good to himself and others, he can take pride in his work,” Jarmo Palviainen, a researcher at TUT, contemplates. ■

✍ Katri Syvärinen 📍 Sauli Kiviranta, VTT



In the field with forestry machine entrepreneurs and operators

Personal service and guidance are in store for up to 140 forest machine contractors, when Nokian Heavy Tyres travels around Finland on an extensive field tour with operators of the machinery. The purpose of the tour is to study the efficiency of the products on six-wheeled forest machines.

– Owners and machine operators will be asked about the efficiency of the tyres and how satisfied they are with them in general. In addition, possible tyre damage will be discussed,



and the durability of the tyres in relation to the hours driven will be investigated, says **Juha Sjöblom**, Technical Customer Service Manager.

A particularly important topic on the tour will be the tyre pressures and their impact on the durability of both the tyre and the tube. Too great a pressure increases the risk of puncture

damage, and too low a pressure causes the tube to rub against the inner surface of the tyre. The tube will then wear more quickly than when driving at the correct pressure.

– Increasing the pressures without field is also a safety risk. Therefore, during the tour, customers will also be told about our new, even stronger forest machinery tyres, which allow higher pressure levels, says Sjöblom.

Nokian Heavy Tyres' regional sales and technical customer service will implement the field tour during the autumn. This will require substantial effort because the machines are located over a very wide area. Once the tour is over, the material collected will be carefully studied and will also be reported to machine manufacturers. In that way, manufacturers too can obtain essential information about the experiences of operators with their machines. ■



Winter is coming, Nokian TRI 2 will hold its grip

More operating hours, reliable grip on winter roads, driving comfort and high load-bearing capacity at demanding sites. All this comes with the block-patterned Nokian TRI 2 tyre, now available in a new size particularly suitable for small tractors.

The numerous edges of the block pattern and the special tread compound based on natural rubber provide precise grip especially in varying winter conditions.

The tread pattern and strong structure ensure that the Nokian TRI2 wears evenly and offers users many efficient working hours. Thanks to its pleasant driving response, the Nokian TRI 2 is at its best when the machine is simultaneously used for driving and working. A comfortable passenger car-like driving response makes highway travel easier and increases traffic safety.

Nokian TRI 2

- Versatile and environmentally friendly special tyre designed for the needs of modern farming and machine contracting
- Excellent grip, high load-bearing capacity and a pleasant driving response.
- Sturdy and fast also on the road.

The newest size in the environmentally friendly Nokian TRI 2 product family is 250/80 R16 STEEL, which is particularly suitable for small tractors used in facility maintenance and grass field maintenance. Thanks to the low surface pressure, it is easy on the ground and cleans effortlessly, ensuring that machines do not carry soil onto roads. ■

The pressure indicator makes pressure maintenance easier

Monitoring tyre pressure can be very simple: with the Tyre Pressure LED pressure indicator, you cannot miss noticing any drops in pressure. This reduces the need to check tyre pressure with a gauge. The pressure indicator is available for all Nokian special tyres tailored for heavy machinery.

The pressure indicator is a led light fitted in the tyre valve. The light starts to flash when, for example, a forestry machine's tyre pressure goes down 0.6 bar. In order to ensure that the flashing light can be noticed at a glimpse, the black valve cap is replaced with a white cap. This simple solution saves time and money.

The right tyre pressure is important for forestry and farming machines in order to avoid punctures and other damage to the tyre. In cold weather, the air inside the tyre shrinks, which lowers the tyre pressure. You can inflate the tyres to a slightly higher pressure for the winter season. ■



The All-Steel steel belt tyre

Steel belt tyres have been on the market for several decades, and they have nearly become the standard also for heavy-duty machine tyres.

- The tyre has a one-layer body
- The body reinforcement material is the familiar steel chord
- Earthmoving machinery and truck tyres are typically all steel tyres
- Good retreading properties.



Nokian Hakkapeliitta Truck E

Beyond All-Steel – stronger than superman

Nokian Heavy Tyres has developed a new radial tyre featuring novel material solutions and a revolutionary structure.

- The tyre body is multi-layered
- The Beyond All-Steel construction is a hybrid that has an ultra-durable multi-layer textile structure
- Safer driving behaviour
- Better stability and driving comfort
- Better swing dampening, tyre and shock absorber in one product
- Lighter weight, which means lower rolling resistance
- Better reliability in demanding conditions and applications
- Slower wearing
- First featured in: the Nokian HTS Straddle harbour tyre



Nokian HTS Straddle

The grand old man of forest machinery The late Einari Vidgrén was also a horseman at heart



At the end of last July in harness racing, we got to see Vidgrén achieve what all professionals and amateurs would like the career of their Finnish horse culminate in: the nine year-old Finnish stallion, A T Eko, owned by Einari Vidgrén Oy, won the title of Racing King 2010 quite supremely at Oulu's Äimärautio Race Course. This was Einari Vidgrén's last achievement in the field of horse racing, as he unexpectedly passed away in the autumn.

Vidgrén's career as a horseman began at his childhood home, the Mäkelä farm, where there were horses. Over the years, Mäkelä expanded from a small farm into a trotting stable and it now has, amongst other things, a six-kilometre practice track and swimming pool, which can

provide the horses with a varied training programme.

Einari Vidgrén always made the decisions about his horses' participation in races himself.

In addition to the crowning of A T Eko, other highlights of Vidgrén's equestrian career include, on the thoroughbred side, Jimi Boy winning the Kriterium at Teivo in Tampere in 1984, and the Finnish and European records of Jimi Boy's father, Barbro Assassin in 1980.

Nearly one hundred years of kings

The royal trotting competitions have long traditions in Finland – the first royal races were held in Lahti as early as 1924.

The royal races include three races over two days. On the first day, the race covers 2,100 metres, on the second one mile and then the actual long royal run of 3,100 metres.

The competition is very demanding and mares and stallions compete in their own classes for the titles of queen and king. The total times of the races are added together and the trotter that achieves the shortest combined time is crowned. A T Eko did his job in exemplary fashion, winning the 2,100 metres and 3,100 metres and coming second in the mile.

Royalty knows its worth

The stable workers tell us that, although A T Eko

is nice and easy to handle, he knows his worth in the stable. For example, he needs to have a pen outside so that he can follow what's going on at the stable without any hindrance.

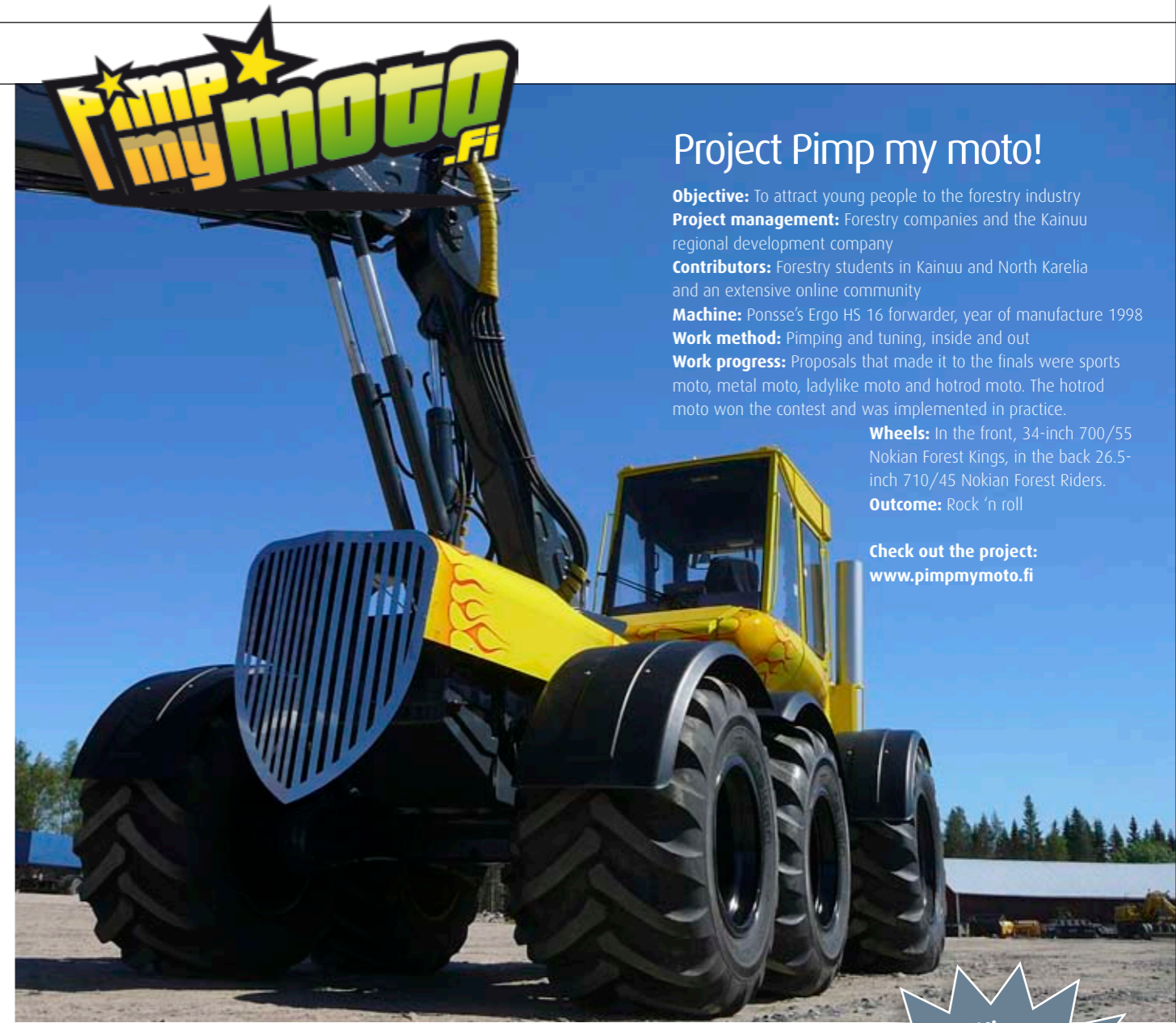
The king's basic training programme contains much walking and jog-trotting, gentle riding and, in the summer, swimming. Before races, the stallion is exercised at racing speed.

At present, two of A T Eko's descendants are being reared at Einari Vidgrén Oy's stable to follow in the footsteps of their father.

By next summer, the king will have more than 200 descendants and, through merits, this number is increasing year by year. We will be interested to see what kind of runners develop from little Eko's. ■

Sad news found us preparing the lay-out of this magazine: Einari Vidgrén had suddenly passed away. This article is based on an interview from earlier this autumn, and with it we want to pay tribute to the respected forestry machine pioneer.

✍ Jaana Sorvaniemi 📷 Kai Jäderholm



Project Pimp my moto!

Objective: To attract young people to the forestry industry
Project management: Forestry companies and the Kainuu regional development company

Contributors: Forestry students in Kainuu and North Karelia and an extensive online community

Machine: Ponsse's Ergo HS 16 forwarder, year of manufacture 1998

Work method: Pimping and tuning, inside and out
Work progress: Proposals that made it to the finals were sports moto, metal moto, ladylike moto and hotrod moto. The hotrod moto won the contest and was implemented in practice.

Wheels: In the front, 34-inch 700/55 Nokian Forest Kings, in the back 26.5-inch 710/45 Nokian Forest Riders.

Outcome: Rock 'n roll

Check out the project:
www.pimpmymoto.fi

Win premium summer tyres!

The Top 10 HEAVY METAL Albums

1. **Metallica:** Master of Puppets
2. **Iron Maiden:** Number of the Beast
3. **Metallica:** Ride the Lightning
4. **AC/DC:** Back in Black
5. **Slayer:** Reign in Blood
6. **Iron Maiden:** Powerslave
7. **Iron Maiden:** Piece of Mind
8. **Dio:** Holy Diver
9. **Slayer:** Seasons in the Abyss
10. **Judas Priest:** Screaming For Vengeance

Source: Metal-rules.com Time: October 2010

Comment, influence, win!

Did you like Heavy? Which topics would you find interesting in the future? Give us feedback about the magazine! We will already try to fulfil your topic wishes in the next issue.

Vote for the best feature in this issue and win new Nokian summer tyres! Voting is easy: Go to our website

www.nokianheavytyres.com/feedback_int

and enter the page number of your favourite article in the text field. At the same time, you can also offer further feedback on the magazine, our activities or products. Respond before year-end to participate in the prize drawing!

Those who offered feedback on the previous issue participated in the drawing for a set of Nokian winter tyres, and the winner is Jukka Karhula.

