# **FORESTRY - CUSTOMER MAGAZINE 1/2023 EN**

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> H212 harvester head: compact, lightweight and fast

# Creating a new forest machine takes passion and persistence

# INTELLIGENT HARVESTER HEAD CONTROL

HADE

## Always the right pressure.

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**Fuel efficiency** 

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JOHN DEERE

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#### WE USE ECO-LABELLED PRINTING PAPER

The Swan is the official Nordic Ecolabel, introduced by the Nordic Council of Ministers. The vision of the Nordic Swan Ecolabel is a sustainable society, in which future generations can benefit from the same conditions and opportunities as we ourselves do. An important step towards this vision is for us all, with the help of ecolabelling, to choose the most environmentally-friendly products.



The Swan logo demonstrates that a product is a good environmental choice. The green symbol is available for around 60 product groups for which it is felt that ecolabelling is needed and will be beneficial. These days, everything from washing-up liquid to furniture and hotels can carry the Swan label



# Innovations convince their users

"You have never needed a map to fell and transport trees" notes a seasoned forest machine contractor, only to reverse his words later (p. 22). "Am I supposed to work from a carousel?" hesitates an operator when climbing into a rotating cabin for the first time. "Those joints move faster when I'm controlling them myself," believes a long-time logging professional. Famous last words – right before the insight that there's no going back to what used to be.

Over the course of six months, I've had a chance to hear many echoes from logging sites and get a first taste of how our new innovations and services are perceived in the field. There's a recurring theme throughout the comments: initial scepticism about the new functions and ways of working, and then being convinced once in operation.

Whether it's a rotating and levelling cabin providing rhythm to the work, Intelligent Boom Control, or the new features of Timbermatic Maps, initial scepticism quickly turns into enthusiasm and no return to the old ways. Once they've had a chance to try out our new tools, it seems crazy not to use them.

This reinforces the notion that we are doing the right things: innovating to benefit customers, optimizing contractors' machine chains for efficiency and reliability, and creating a little bit of magic to lighten the operators' workday. "You can definitely notice it after the day's work," notes a French forest machine contractor who is pleased with the rotating cabin's rhythm and visibility (p. 14).

While producing this magazine, I also had the opportunity to hear what our engineers think about their work. Based on the feedback from logging sites, I wasn't surprised to meet an enthusiastic, dedicated team that is passionate about continuous improvement and for whom the designing of a new forest machine series is first and foremost a matter of customer service. As Engineering Manager Timo Laitinen notes (p. 8): the fact that products are created for the customer makes the work meaningful.

We can be proud when our skilfully engineered products sell themselves and are convincing to those giving them a try, but we must also communicate about these products openly, clearly and boldly. It is an important part of good customer service.

The best messengers are the people operating our forest machines around the world. So we give them a voice here and hope their stories inspire others.

# Creating a new forest machine takes passion and persistence

The productization of a new forest machine series is a multi-phase process that takes several years at the very least. A peek behind the scenes of the engineering work reveals a team that is inspired by problem-solving, passionate about their work and isn't deterred by the fact that their handprint takes years to see.

TEXT: ANNE KASTARINEN, IMAGES: JOHN DEERE

he outlining of a new series of forest machines starts as soon as the previous one is launched. But it takes a long time before it reaches logging sites.

At the heart of the engineering work are constantly evolving customer needs, which John Deere pulls together from numerous sources, most importantly from its own customers and machine operators with whom Engineering Manager **Timo Laitinen** and Engineering Team Leader **Aki Pyykkö** interact with personally or through the support of the customer interface teams.

As customer needs arise around the world, they are inevitably very different. However, certain trends are prevalent regardless of the market.

"For the machine owner, output is still the most important when working with the machine. But these days, having a machine that runs isn't good enough; now it's understood that operator wellbeing contributes to higher machine output," says Laitinen.

The improvement in machine usability and workflow is a trend ending up on the drawing board of engineers from many angles. Northern Europe has long traditions of work wellbeing and ergonomics as such, but also the highly tuned production systems of South America require that the operator has the best possible conditions.

## From engineering to testing and production

At John Deere, the engineering of a new series of forest machines is triggered by an annually approved portfolio plan. A new review is currently underway and is aiming for the turn of the decade. "Until then, the game is pretty clear," Laitinen notes. Some of the projects accepted for drafting are critical development projects that will bring completely new technology to the market. Therefore, also the productization cycle is longer.

"Designing new functionalities for a machine requires time both for the development and testing of the structure and the control system," Pyykkö explains.

It takes cohesive teamwork to create a new series of forest machines. The 23-person engineering team for the forest machines, power systems and transmission is headed by Timo Laitinen, who keeps the ball rolling and ensures that targets are met. Team Leader Pyykkö leads the project for the harvesters and is responsible for the practical implementation together with the team. In addi-

> tion to mechanical engineers, the project team includes frame, power systems and electrical engineers, as well as specialists in areas such as hydraulics and automation who are needed to implement each sub-project.

The project definition phase takes between one and two years. During this period, any new customer needs that have emerged are critically reviewed.

"We identify what implementations would be required to meet the different customer needs and we score the most important features. We try to iden-

tify solutions that are of real benefit to the customer," Laitinen says.

Although the focus of the design is on customer needs, the whole picture must be taken into account. The aim of the design is to find an outstanding solution from the customer, production and profitability point of

## "For the machine owner, output is still the most important."

"Having a machine that runs isn't good enough; now it's understood that operator wellbeing contributes to higher machines to ingher machines to

Engineering Manager Timo Laitinen



view. A narrow market can cut into profitability and so can a high quality risk. New technologies aren't introduced to the market until they have been through a reliable level of testing and validation. In line with John Deere's product testing process, a new product or machine model undergoes at least 2,000 hours of testing.

"With us, the customer doesn't have to be the one testing the finished machine," Laitinen notes.

After the engineering phase, the parts for the prototype machines are ordered. The recent

availability of components has impacted the timelines.

"Engineering might be the shortest phase, and waiting for parts the longest. It requires patience," Pyykkö notes.

The prototype machines are completed quickly, but they are tested for at least a year to ensure their functionality in all conditions. Only then is the machine ready for production.

Ideally, the process flows smoothly from design to testing and production, but it also flexes when things need to be reviewed. It's possible that a product can still return to the drawing board for a bit after the testing phase.

"There was one time when we really had to twist each other's arm to decide which way to go. The product engineers were absolutely sure of their position, but studies around the world indicated that an alternative solution was clearly what the market wanted. We went forward with it, but the very first test confirmed that the solution had been wrong. So we reversed course and went back to the engineers' original proposal," Laitinen recounts.



#### More flexibility with options

Integrating many important features into one machine often translates to compromises. But there's no yielding when it comes to critical features: machine reliability, performance and energy efficiency are always preserved. Sometimes, however, two important features are at odds with each other. In that case, the aim is to take both into account adequately.

"The manufacturability and serviceability of a machine do not always serve one another. On the production line, the machine is assembled from the bottom up; but in the field, it's difficult for the technician if they have to dismantle everything from top to bottom," Laitinen explains.

Have there been situations when you wanted to stick to your own idea, but the team settled on a compromise?

"There have been many," Pyykkö laughs.

"The feedback we receive from forest machine contractors and drivers is in the core of the design."

Engineering Team <sup>1</sup> Leader Aki Pyykkö Laitinen responds more diplomatically. "The process is definitely effective; it ensures that mistakes don't make it to the market."

Machines designed for the most extreme conditions, corner conditions, are among the most difficult because as a whole they no longer work best for the average user. So special options are designed for special markets, options like specially reinforced headboards or rear frames and specially sized load spaces. These have more flexibility, since the basic features are implemented at a precise scale that works everywhere.

The new machine series is a technology platform upon which new features can be built at a later stage – such as automation-related features and operator-assist innovations. The life cycle of a product is long, and introducing new features is by no means a quick process. The wait time can be long also for the customer. As an example, Laitinen mentions the availability of an 8-wheeled model – a change that customers kept asking for year after year.

"I remember one time arriving in Scotland to meet with a customer. The customers sarcastically voiced, 'Oh look, it must be autumn. The Deere guys are here to see if we need 8-wheeled harvesters. Yes, we do.'"

#### **Operators play a key role**

John Deere's forest machines end up in different environments where varying conditions affect the load on the machines and the way they are used. The design must take into account factors such as temperature, the steepness of the terrain, wood species, their weight and different assortments.

Even more significant than the environment is who is operating the machine. There are extreme examples to be found in every market: some operators take very good care of the machine and even take their shoes off when entering the cabin; others seek out maintenance only if the engine doesn't start.

"The biggest differences in operating habits come from users with their different backgrounds, training, experience and preferences," notes Laitinen.

The level of operator training varies widely, and training isn't even available everywhere. Many models are based on personal preference or ingrained habits rather than on technical grounds. "A load of logs can be steadied against the headboard, putting stress on the headboard, or steadied on the ground, putting stress on the grapple mount. We have to take both into account."

When the different methods of use are known, planning is easier than when introducing completely new concepts to the market. New features always enable new methods of use that are unknown at the design stage. Then it's necessary to predict what kinds of stresses the machine will encounter.

"Let's say more strength or stability is wanted on the side of the machine, we don't know for sure how much work will ultimately be done on the side, but we'll implement the improvement solution based on the best available information," Laitinen explains.

"Basically, we assess what use will look like in the best, average and most challenging scenarios," specifies Pyykkö.

Operator training is key to maximizing the use of state-of-the-art features on new machines.

"Machine usability is evolving more than the hardware: how to support and guide the operator to do things the right way, for example by placing different functions in a specific location. The machine already makes many decisions for the operator," notes Laitinen.

## Customers are more satisfied than colleagues

According to Laitinen, the productization of a forest machine is a customer service task that takes into account not only the end users but also numerous internal customers. It's a joint effort involving production, product support, marketing and dealers. What kind of customer feedback do the engineers get about their work?

"Good feedback, when it comes from outside the company. Customers are much more satisfied than our own people," Laitinen reveals.

By default, the internal feedback when working on problems is often negative: something isn't working or not at a sufficient level. Pyykkö notes that receiving feedback sometimes requires thick skin. The most effective way to prepare is to make sure you have the best possible understanding of the customer's needs and operating environment.

"Then you can quickly filter out whether the feedback is relevant and reason enough to take action," says Laitinen.

Sometimes there's discord because the new product doesn't resolve all the problems that were raised.

"The scope of a project is always limited and it doesn't cover all the problem spots. There are issues that we will not touch if it were to create unreasonably complex solutions or time constraints. Our job is to limit what makes sense," Pyykkö explains.

Dealing with feedback is easier knowing that each choice has been justified. New features are not decided by a team leader or mechanical engineer; rather, they are the result of collaboration between several multidisciplinary teams.

"Neither of us has our own machine. We do this work for the customer; it makes this work meaningful," notes Laitinen.

#### Motivated by the journey and the destination

When you only see your handprint every few years, you need other sources of motivation. What's the best thing about designing new forest machines?

"Yes, I have a definite zeal for this work. I like looking at things from different angles and studying plans or 3D models. It's so interesting," Pyykkö admits.

Laitinen recognizes a number of motivating factors, both in himself and in his subordinates. For many, the main motivator is a hightech product, the completion of which is not the only goal. Problem solving and learning along the way are equally rewarding.

"The high point, of course, is completing the product and hearing customer feedback, but that may not come for years after the actual effort. By that time, you may not be as excited about it since you are already preoccupied with new projects. For me, the most rewarding phase is the project definition phase: agreeing on what will be made," says Laitinen.

The months following the definition phase are

# " I have a definite zeal for this work."

Engineering Team Leader Aki Pyykkö

not as exciting, but each concrete step is.

"Creating a graph doesn't give me much satisfaction, but I am happy with every – even minor – success: when we get the machine built or tested, or when we hear the first customer feedback."

Few engineers are working on just a single project; in fact, most have many – Pyykkö has four at the moment.

"We have a lot of problems to solve, and with that comes a constant stream of small successes."

## A sense of direction and skilled hands

When a project goes on for several years, the composition of the team and even the operating models can change along the way.

"Everything except me: Pyykkö will still be here, but everything else will change," Aki Pyykkö clarifies.

"In a long project, it's important that the team leader has been involved right from the start and knows the background," Laitinen adds.

Apart from persistence and thick skin, what else is required of a team leader? According to Laitinen, efficiency and determination to reach the goal – the very qualities that characterize Pyykkö. And there's nothing wrong with an easygoing nature; quite the opposite, in fact.

The key qualities in Laitinen's role are assertiveness and responsibility, taking care of things and people.

"Timo is genuinely interested in his subordinates and in where things are going. He leads the way and points to the common goal when things get murky," Pyykkö notes.

A sense of direction is useful also outside of work: Laitinen enjoys spending time orienteering in the forest. Both men have a variety of building projects in common. Laitinen builds, renovates and repairs the family's vehicles. Pyykkö's persistence is evident in his garage: the 'car project' has been underway for five years – and in the process, many other machines and tools have been created by his skilled hands.

"It's very much looking like the new forest machine series will be completed faster than my car project," Pyykkö laughs.

New forest machines are launched with close cooperation. The marketing and sales teams have a valuable opportunity to get to know the new machine models under the guidance of Timo Laitinen (2nd left) and Aki Pyykkö (6th left).

# IHC – INTELLIGENT HARVESTER HEAD CONTROL

TEXT & IMAGE: JOHN DEERE

The new Intelligent Harvester Head Control (IHC) facilitates harvesting and improves delimbing quality. The force control of the delimbing knives maintains proper compression of the harvester head and excellent measuring accuracy in all conditions.

The correct setting of the delimbing knives pressure is a basic requirement for good and precise harvester head operation. Determining the correct settings is based on a number of variables, like tree size, tree species and felling conditions. Thanks to the new Intelligent Harvester Head Control (IHC), the need for adjustments to knife pressures is significantly reduced, making the harvester operator's work easier.

The force control of the delimbing knives is based on the basic settings per tree species defined in John Deere's Timber-Matic control system. A force sensor in the harvester head's upper delimbing knife constantly measures the force with which the tree is compressed, and the IHC system adjusts it, if necessary, within the given limits. This gives the knives sufficient, but not excessive, compression, and thus the quality of both delimbing and measuring remains at a high level.

#### Ease of use also improves productivity

Thanks to this new innovation, the harvester operator doesn't have to constantly adjust the harvester head settings as tree characteristics or conditions change; instead, IHC adjusts the compression pressure of the delimbing knives as needed.

In addition to ease of use, IHC improves harvesting productivity. Sufficient compression force ensures accurate diameter and length measurement and excellent delimbing quality. When the compression force is proper and not too excessive, the feed rate remains good, the surface layer of the tree is not damaged, and excessive fuel is not consumed. Additionally, debarking of the tree doesn't occur, so the value added remains high and the bark can be recovered for energy. The correct pressure setting also improves the durability of the harvester head.

IHC – Intelligent Harvester Head Control is a feature that John Deere is constantly developing. The option is available with John Deere H212 and H423 harvester heads. ■

# Planting seedlings for a better future

TEXT: MATTI TARKKA & RICHARD LAWLER, PHOTO: JOHN DEERE

A healthy forest ecosystem is essential for a healthy planet. Forests regulate the climate, rainfall patterns and watersheds and are crucial for providing oxygen and clean water. With the increased focus on environmental sustainability, the use of wood for fuel, fiber and wood products is increasing.

Healthy, sustainably managed forests can provide an endless supply of fuel, fiber, and wood products. Wood is the only renewable building material available today and the environmental benefits of wood construction are gaining recognition. Compared to a traditional timber stud, a steel stud requires 21 times more energy to produce and releases 15 times more sulfur dioxide to the atmosphere. Producing concrete emits up to 3 times more carbon dioxide, carbon monoxide and hydrocarbon compared to lumber production.

#### Broader focus on silviculture

With the increased importance that the global Forest Industry has on the decarbonization of the atmosphere, and in order to help global forestry customers meet the growing demand for sustainably sourced, cost-effective

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wood products, John Deere Forestry has shifted its strategic focus from forest harvesting to include the entire Forestry Production System. This is not new at John Deere, since our agriculture team has successfully leveraged Production System thinking to develop a host of technology-driven products that have significantly improved agricultural yield and efficiency, while reducing input costs for farmers.

Applying this holistic thinking to the forest industry, it was clear that the forest harvesting segment has experienced a significant improvement in productivity, efficiency, and safety through mechanization over the past four decades. Forest harvesting has undergone a significant transformation, but silviculture is an area of the overall Forestry Production System that hasn't experienced much change.

As we explored this further with customers and forest owners worldwide, it was clear that increased urbanization was making it increasingly difficult to attract and retain forest workers for the labor-intensive jobs typically found in silviculture. In some regions, especially those that have experienced higher than normal forest losses due to the effects of climate change (forest fire, insect infestations, drought etc.), silviculture activities are so constrained by the labor shortage that it is putting significant pressure on maintaining the exceptional history of sustainably managing the forest ecosystem.

Committed to constantly improving sustainability, we saw an opportunity to leverage our experience with mechanized forest harvesting and the development of precision soil preparation, planting and spraying technology for agriculture and apply it to silviculture.

#### Brazilian forests as a starting point

Like all significant change activities, you have to start somewhere. In discussions with forest customers worldwide, we saw a good opportunity to work with Brazil's forestry industry primarily because they have very organized silvicultural activities, their plantation forestry infrastructure is well defined, and their forests have very short rotation times – which provides us with quick feedback on the positive and any potential negative impacts of mechanized silviculture. Additionally, there was considerable "pull" from Brazil's forest industry for mechanized silviculture solutions to help them meet the growth of the eucalyptus plantation forest area over the coming decade.

According to the latest survey by the Brazilian Tree Industry (Ibá, January 2022), the Brazil-

## John Deere's agricultural technology offers potential opportunities for forest management.

ian forestry sector plants more than one million seedlings per day and has 9.5 million hectares of productive forests. In addition to the significant investment in sustainably managed productive forests, Brazil's forest industry has also developed another 6 million hectares of native forest, exclusively for conservation and providing a natural habitat for native species.

## Mechanized planting as a solution to challenges?

Leveraging customer-focused processes, developed by the John Deere Ag Advanced Marketing team, we mapped the entire Silviculture Production System and looked at the areas where customers were experiencing the biggest challenges. We also looked at where the biggest opportunities existed for customers to improve productivity and efficiency. Comparing the challenges and the opportunities, we quickly identified that mechanized planting provided one of the biggest opportunities for Brazilian customers to meet the challenges they were facing.

We assembled a small, highly talented team by bringing together people with experience in Forestry, Agriculture and Construction equipment development. Working closely with customers, this team managed to quickly create a concept Mechanized Seedling Planter that was initially sent for customer testing in early 2020. Unfortunately, the global pandemic stopped our testing and we had to reassemble our efforts during the pandemic based on very limited customer feedback.

#### Promising test results

We were able to resume field testing after the global travel restrictions were lifted. We presented the concept Mechanized Seedling Planter to many excited customers at the Florestal 2022 forestry show in Três Lagoas, Mato Grosso do Sul, Brazil, in May 2022.

The Mechanized Seedling Planter is currently undergoing further customer testing. Initial feedback is very favorable, and we are on track to meet the customer request to be able to plant one hectare of forest per hour and significantly reduce manual labor by approximately 90%. In order to achieve these results, we integrated several technologies leveraged directly from Agriculture, such as automated path planning and steering, which simplifies the operation of the machine and improves the overall quality of the planting.

# Continuous development for healthier forests

The Mechanized Seedling Planter is designed to be adaptable to different species and is intended to be used in different forestry markets around the world. The planter is built on the 1510G forwarder that is in serial production at the Joensuu factory in Finland. The 1510G's performance and ergonomics provide an industry leading platform for the silviculture solutions Deere is developing.

Mechanized planting is only the beginning; through the leverage of Agriculture technologies, there are further opportunities to improve the productivity and efficiency, while reducing input costs for forest owners. Emerging technologies like the recently released John Deere See and Spray<sup>™</sup> have significant potential to further reduce the cost of silviculture activities while improving the health of the forest.

The future of the forest looks more promising every day.

# First thinning in the Médoc, France

![](_page_11_Picture_1.jpeg)

Farbo is a company based in Hourtin, in the Médoc region in the South-West of France. This area is renowned around the world for its excellent winegrowing and also covers the northern part of the Landes de Gascogne, where the forestry of maritime pines is practised. Following the planting of numerous trees after the storm in 1999, several thinning operations need to be carried out today. Steve Cazorro, the manager of Farbo and a loyal John Deere customer, has found the H212 head to be the ideal tool to improve his productivity among these young stands.

#### A need for productivity

Twenty kilometres from his company's main office in Hourtin, Steve Cazarro welcomes us to a vast site in the Vendays-Montalivet communal forest. He has been commissioned by the French National Forests Office to carry out an overdue first thinning across a total surface area of 85 ha. The thinning area has not been marked out; Cazarro has to choose the pines to remove himself based on the dominant trees to keep for the future. He estimates that around 400 to 500 stems per hectare will need to be removed, with an average unit volume of 0.150 m<sup>3</sup>, or around 70 m<sup>3</sup>/ha. He bought the standing wood and intends to get at least three products from it: sawn wood, cant and paper. This is demanding work, requiring a high level of concentration for the selection and rigour when it comes to storing to create piles that are well aligned by product in order to facilitate the later hauling that Cazorro outsources. The other priority for our forester concerns productivity. In a thinning operation where the pines are still very close together, a brisk pace is required, while of course being careful not to damage the trees left in place, in order to ensure sufficient yields to maximise the profitability of the operation.

#### Compact, lightweight and fast H212 harvester head provides a real productivity boost

Besides the total surface area of the site, which is larger than normal for Farbo as it mainly works with private properties, Cazorro knows this type of set-up well, since it is very common in the Médoc region. Numerous plots were replanted there after the storm in 1999 that devastated 100,000 ha of forest across the region.

The machine Cazorro operates, a John Deere 1070G 6-wheeled harvester, is one he bought in 2021. It was a second-hand purchase, relatively new from 2020, that the company acquired to replace a 4-wheeled harvester. Cazorro immediately noticed a marked increase in stability, all while maintaining excellent manoeuvrability despite the machine being fitted with 710 tyres. The agility offered by the 1070G is incredibly valuable in this dense plot. This is also true for the machine's range, which, thanks to the 10 m boom reach, enables work from a reasonable distance while maintaining excellent precision when grabbing stems. This dexterity also comes from the harvester head, a John Deere H212 model. Cazorro has lots of expe-

# H212 harvester head provides a real productivity boost.

rience with 4-wheel-drive heads, and before buying this new machine he had the opportunity to try out one owned by a fellow logger from the Landes region who has an identical set-up. He was immediately won over by this new lightweight, 2-wheeled model with a very simple design and high efficiency in small- and medium-sized woods. In fact, he tells us that the compact head is very fast, both for picking up wood and for processing. Maritime pines, which are often twisted, go through much better. This is all the more important because, as he tells us, young pines are often brittle and were breaking with 4-wheeled models. This no longer happens with the H212, as we were able to see for ourselves. The compact size and lightness of the H212 head allow the operator to nimbly grab small pines and then to cut them into logs at high speed, without any collateral damage to the surrounding trees.

#### **Growing business**

Cazarro's first experiences with mechanised logging were at a very young age, with his uncle's company on a tracked harvester. When he set up his own business in 2009, he only carried out logging operations with a John Deere 770 harvester equipped with a H745 head. It was a fantastic tool on an excellent machine that was perfectly suited to the Landes de Gascogne woodland, according to the entrepreneur. After replacing this exact set-up once, he then moved on to a higher capacity configuration with a John Deere 1270E harvester equipped with a H270 head. This head performs well with the biggest pines while also proving effective with hardwood. Then came the 4-wheeldrive heads with a H414 followed by a H415, mounted on John Deere 1170E and 1270G bases respectively. The latter is still part of the business' fleet, which today has three harvesters: A 1070E with a H413 head, a 1270G with the H415 head and then the much talked about 1070G and its H212. A 1110G forwarder with a fixed cabin completes the fleet, with the other hauling operations outsourced to subcontrac-

![](_page_13_Picture_0.jpeg)

tors. Cazarro's business has certainly grown well since the beginning. In 2015 when he noticed a slowdown in demand for the provision of forestry services, the entrepreneur decided to add a wholesale wood trading element to the business. He had been mulling over the idea of growing the operation and he seized this opportunity to restructure and start buying his own timber. He then did a lot of work to set this up, involving the construction of a brand new workshop in Hourtin. This very well equipped site can carry out all minor maintenance operations such as oil, filter and hose changes, and other routine procedures. The company now has four operators, an administrative manager and, for a year and a half now, a buyer who has been working to grow this new aspect of the business by prospecting forest owners in the region.

#### Yields in small woods

Steve Cazorro's assessment of the 1070G harvester that he still drives himself is conclusively positive. He is particularly pleased with the H212 head. As well as excelling during first and second rounds of thinning in maritime pine plots, it also performs very well with hardwood. The harvesting of oaks intended for sawing and for wood heating, and of black locusts, or false acacia, to be turned into posts, actually represents no less than a third of the company's activity. The 2-wheel-drive H212 head

performs really well with these kinds of trees. He explains that for every new site, he starts by adjusting the settings of the head according to the species to be harvested and the age of the trees. Thanks to John Deere's built-in technology and user-friendly and easy-to-use interface, he makes adjustments to the pressure, the knife and wheel opening pulse, and the acceleration and braking times to find the perfect balance between the speed of feeding and the quality of the delimbing. The results speak for themselves. So much so that Cazorro says that while he had never got back to the quality of the H745 head from his early days, with the H212 today, he has exceeded the levels of productivity it allowed him to achieve and that he had never found again with 4-wheel-drive heads in small woods. Progress through maritime pines is fast, cutting on all sides. The result being that, on the site where we met, he explained that he was cutting at a rate of 17 m<sup>3</sup>/h, equivalent to around 130 m<sup>3</sup> over an 8-hour work day. This rapid pace allows him to increase from 2 to 2.5 ha/day, which is guite efficient for a first thinning. For hardwood trees, the 10 m boom proves to be very handy when working in segmented areas and to support natural regeneration without damaging seedlings. And, thanks to the weight of the H212 head, he has never had any stability issues when cutting with the maximum boom reach on the sides of the harvester.

# Efficient machines and local service bring peace of mind

Pleased with the performance demonstrated by his John Deere 1070G harvester fitted with the H212 head, Steve Cazorro is now thinking about updating the 1070E with an identical setup. With the G model, he also appreciated the added value provided by the rotating cabin. The visibility is much better, he says. "You feel it by the end of the day!" In fact, he says he maintains a constant level of productivity throughout his 8-hour day.

When it comes to harvester heads, while he recognises that each of them has their own features, he believes there are no bad ones, just differences depending on the work you want them to carry out. He has decided to go with what he knows, gradually coming back to 2-wheeled models. He also highlights his great collaboration with Payant, a John Deere distributor for his sector. The proximity to the Bazas workshop, which is 130 km away, is definitely a benefit. Thierry Fraysse, the head of the forest equipment department at Payant, has no trouble identifying the needs of his long-time customer and meets these needs in the best way possible. Machine downtime is always bad for business. With high-guality equipment and a reliable service, he knows he'll be able to continue growing his business with peace of mind.

# "Every new machine model raises standards to a new level."

- Jörg Nuhn, CEO, Nuhn GmbH

TEXT: PATRICK SUTTER, IMAGES: ANDREAS HARTKOPF & HERRMANN & RENZ

The company Herrmann & Renz GmbH based in Blaustein near Ulm in Southern Germany was founded in 1986. Today the company is one of the biggest logging companies of the country. This excellently run company has been servived by company NUHN, importer of John Deere forest machines in Germany, since they purchased their first harvester in 1992. oachim Groner, managing director at Herrmann & Renz GmbH, remembers his time as forest machine operator really well. "My career in this company started in 2000, after the turn of the century. My first harvester was a Timberjack 1270B. A wonderful machine. Since then our company has grown so much." A success story from Southern Germany: ten years later Joachim Groner was promoted to a management position. Today he is the sole director and owner of the company. The company now has 30 employees and owns 20 big John

![](_page_14_Picture_5.jpeg)

Deere machines, which are in daily use. Herrmann & Renz acquired its first harvester from NUHN in 1992. Based in Niederaula, Hessen, NUHN GmbH & Co. KG serves more than 2 500 customer with more than 3 000 machines all over Germany. At their main location in Hessen they have around 30 employees. In addition, the company works with partner companies in different parts of the country.

NUHN is well known not only for the sale of John Deere products, but also for their excellent customer and spare part services. This familyrun business, founded in 1967, has been operating in the forest machine business since 1978. Managing director Jörg Nuhn, who is the second generation of owners, says: "We sell only John Deere machines. They are extremely powerful and efficient, and every new model sets new standards. All customers know that they are getting premium quality machines."

Jörg Nuhn especially stresses the importance of customer service. Joachim Groner of Herrmann & Renz can vouch for this: "The advice, the customer service and especially the spare part service are really excellent. If we order new parts in the afternoon, we get them early next morning." Training sessions are part of the service as well. The technology of the machines has become more and more complex. Therefore the customers need to keep pace with all the functions and possibilities as well. The most impor-

## "John Deere harvesters offer the highest quality."

tant subject is, and has been for quite a while, digitalisation.

#### **Innovative systems**

With the help of John Deere tools every forest section can be analysed separately. Thus trees can be logged very precisely. "John Deere has developed very innovative systems. Since 2018 there have been giant steps forward in the area of digitalisation. The tools are included as standard. In the beginning many customers were hesitant, but now most customers use the systems because they offer so many advantages," Jörg Nuhn says.

Herrmann & Renz is a pioneer in digitalisation. Already in 2016 managing director Joachim Groner bought the first machine with digital features, a 1470G harvester, the largest John Deere model. At that time, RDA (Remote Display Access) was also introduced, providing

![](_page_15_Picture_9.jpeg)

remote visual access via the internet. Thus a much faster error diagnostic was possible, which meant a higher uptime of the machine.

Another feature, of which Joachim Groner is a committed supporter since its launch in 2018, is TimberMatic Maps. The data collected by the sensors of the harvester and the precise location of the felled logs with the help of GPS are transfered automatically for the use of the forwarder. If there are any points of interest, like a steep slope, the harvester operator can enter this on the map, together with a remark – or he can add a warning if necessary. The communication between operators is improved considerably by this, since the data is saved in the system. The data between the machines is exchanged via a cloud service.

Joachim Groner explains: "It is now much easier to organise the tasks. Everything is shown on the map, including how many cubic meters lie in certain positions." Another big advantage of TimberMatic Maps is that the trails driven are shown. With the help of the colours of the lines the forwarder operators can see if there is a slope in the forest or if a certain spot is impassable. The operator can decide if they need to work on a section on that same day, for example, if there is a forecast of rain. In Joachim Groner's opinion, there are many advantages which make the daily job of operators easier.

#### **Tools boost effiency**

Herrmann & Renz is convinced of the advantages of digitalisation. "With the help of digital tools we can clearly grow our income and are much more efficient," Groner says. The company places great importance on an optimized log processing. With the help of the technology and software in use, the company can considerably boost the profit for its clients compared to conventional log processing.

Today, Herrmann & Renz owns 20 John Deere machines. "Our company has bought John Deere machines (former Timberjack) from day 1 - for more than 30 years. This was a conscious decision, since these harvesters offer the highest quality. By now our long-term employees know this brand very well, they are proficient at working with them, there is no need for them to get used to other brands. When we need spare parts and repairs, the sourcing from the single source is an advantage as well," Joachim Groner says. His company has its own workshop which does the repairs. Our employees are motivated, when there is a smooth interlocking between guality, technology and service. Each operator has its own area of responsibility which they really appreciate according to Groner. For the complete processing of forest stands, Herrmann &

## "Our employees are motivated, when there is a smooth interlocking between quality, technology and service."

Renz also uses manual forest workers. The company also prioritises quality management and occupational safety. For the customers, not only maximum profit is important, Joachim Groner knows. Many customers place great importance on safety.

A unique selling proposition of the company

is the fact that beside forwarders, they also have a 12x forestry tractors with winches assisting each harvester. Joachim Groner has built their infrastructure in such a way that his employees do not have to drive back and forth all the time. And with the company's own flatbed truck the machines can be driven to a different location any time. "That means that our employees do not have to wait. Even in this aspect we are very efficient, since there are hardly any standstill times," Groner explains.

#### **Optimized processes**

The work in the company has changed considerably since they bought their first harvester 1470G in 2016. The systems offer precise information and improve the workflow in the whole organisation. There is no need for paper notes anymore. The processes in the company are coordinated perfectly. Another feature which is being used daily by the managing director is TimberManager. With TimberManager he can see all his machines and their performance data on his PC screen. Thus he can follow the progress on the logging site any time – in cubic meters and in percent.

The organizational structure of Hermann & Renz has recently changed. There are now several team leaders in charge of each teams, supporting the managing director with daily operations. Together with the company growth the structure had to grow as well. Nothing should be left to chance, but clear responsibilities and processes are needed instead, Joachim Groner says. He is looking optimistically into the future. "We have the perfect technology, we are very productive and have created an ideal organizational structure." In coming years he wants to continue the profitable growth strategy. And he wants to create new jobs. The success story from Blaustein is set to continue.

### Herrmann & Renz GmbH

- Office: Blaustein near Ulm in Southern Germany
- Founded: 1986
- $\cdot\,$  Managing Director and owner Joachim Groner
- Employees: 30+
- $\cdot\,$  Close cooperation with NUHN since 1992
- At the moment 20 John Deere forest machines in use
- $\cdot$  Development of new stands
- Self-harvest and timber trade
- Transport service
- Special loggings

From left to right, Johannes Rapp, machine driver, Marine Rösch operational management, Marius Eberhardt, team leader, Rafael Schenk, team leader, Joachim Groner, managent uterctor and Beter Groner, commercial managent

# **TimberNanagerTM** in Australia - significant efficiency in harvesting operations

TEXT: SIMON SHACKLETON, IMAGES: MATT B

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![](_page_18_Picture_0.jpeg)

Drummond began in forestry after leaving school and worked as an operator for around 12 years before establishing M & C Harvesting in 2019.

The business' high-performing fleet is made of a number of John Deere machines including two 859MH Tracked Harvesters and two 1910E Forwarders. Both the tracked harvesters and forwarders are designed to withstand rugged environments, such as steep slope logging.

Contracted to produce approximately 115,000 tonnes per annum of softwood timber from the Northern Districts of HVP Plantation's forestry area, Drummond said it was critical his equipment was up to the job.

"We specialise in intermediate terrain, between steep slope and flat and have the contract for first and second thinnings," Drummond said.

"Over the past 12 months, especially, we have experienced wet weather and the tracked harvesters have performed exceptionally well."

John Deere's connection with the Waratah range has also been a drawcard for Mr Drummond, who utilises Waratah 618C attachments on his harvesters.

"We really like the combination of the John Deere machines and the Waratah heads and the reliability and the reputation that these two brands have working together."

#### TimberMatic Maps and TimberManager make operations easy

John Deere's digital forestry operating system, Timber-Matic Maps and TimberManager has added significant efficiency to M & C Harvesting operations. The cloud system provides managers remote capabilities to the working site and the ability to monitor production between harvester and forwarder. With the system, it is also easy to mark locations for stacked timber and to create boundaries around the logging site.

Drummond said it was a powerful tool to streamline production, especially with an expanding workforce.

"I started harvesting with a two-piece system which has now grown to four allowing me the transition into a management role," Drummond said. "A key feature that made me originally interested in John Deere was TimberMatic Maps and TimberManager and its ability to accept PDF maps with overlays showing the thinning rows. We've found the mapping to be very accurate.

"Traditionally, boundaries are laid out by boots on the ground, so the use of TimberMatic Maps means our operators do not need to get out and walk around the block to check boundaries as much, which, in turn, gives them more seat time and higher production.

"It also means I can see where my machines and operators are at any time, which helps if problems arise. I can now assist resolving issues remotely."

"I can also see production figures for each machine. The production data is really accurate: I'm able to monitor what the harvester has produced, how much there is for the forwarder to haul, and what has been forwarded to the landing."

"Being able to monitor the machines and how they perform including fuel consumption is also of enormous benefit to operational efficiency."

#### Partnered with the best

Drummond said while it was John Deere's reputation for quality that first piqued his interest, it was the proven reliability and back up support that persuaded his purchase.

"I have had a really good relationship with all the team at RDO Equipment, Lavington and I would say they're responsiveness to our needs for servicing is always excellent," Drummond said.

"I can always trust that they will arrive with everything required, like filters, oils and parts, for the job and I can hand my machinery over to them and get on with what I need to do."

While the forestry industry is under pressure following severe bushfires and rising input costs, Drummond is thrilled with the direction of his business.

"I am really happy with how the business is tracking. We have expanded to five employees in the past 18 months, and I am excited to continue growing, which could mean more new employment opportunities and additional equipment for M&C Harvesting."

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French forest machine customers visit Joensuu:

# The future of forestry and the Finnish Forest Inventory are of interest

TEXT: SIRKKA-LIISA AALTONEN IMAGES: HARRI MÄENPÄÄ

A delegation from John Deere's French dealer AFCO visited Joensuu in mid-March. The future trends in forestry were discussed in a presentation by Senior Researcher Lauri Sikanen and Research Manager Johanna Routa, both from the Natural Resources Institute of Finland Luke. Digitalisation, artificial intelligence and data are playing a stronger role on the researchers' agenda. The EU Parliament's position on the update of the Renewable Energy Directive (REDIII) was a topic of concern for the French forest machinery customers.

![](_page_19_Picture_4.jpeg)

t the time of the visit, the snapshot of the EU directive was of concern both to the guests and the hosts; the entire definition of renewable energy was being reinterpreted. According to the position of the EU Parliament, only the secondary fraction circulating through industry would be eligible and count as renewable bioenergy. In contrast, primary biomass – small wood, harvest slash and roots – would be excluded from renewable energy subsidies. The only exceptions would be thinnings aiding in the prevention of forest fires or road accidents, or forests affected by natural disasters, pests or disease.

The news received at the end of March was a relief. During the negotiations, it was agreed that sustainable bioenergy would in all cases be counted as fully renewable. The agreement on the matter was described as tentative. The reason for this cautious expression is that the outcome of the negotiations won't become concrete until after the EU Council and Parliament have voted on it.

What is certain is that the forestry debate in EU Member States will continue. Issues relating to the supply of energy wood and also the consideration of national differences between EU Member States are of concern to others besides just the Finns and the French. There is a lot of emotion involved in the forestry debate. Luke, a research institute owned by the Finnish Ministry of Agriculture and Forestry, is flagging the importance of researched data over emotion. The EU Parliament's goal is to increase the share of renewable energy to 45% of energy consumption by 2030. In 2020, the share of renewable energy was around 22%.

#### The importance of forestry

Heading the French delegation was AFCO's Marketing and Development Director Thomas Richard. AFCO is one of France's three dealers of John Deere forest machines. The AFCO delegation of forest machine customers began their visit with a tour of John Deere Forestry Oy's Joensuu factory. As a leading developer of logging solutions, Deere engages in cooperation also with the Natural Resources Institute of Finland Luke.

Almost twice the size of Finland, France is the fourth largest forested country in Europe. The country's forest cover is about 30%, or just over 16 million hectares. Finland, on the other hand, is the most forested country in Europe, with around 86% of its total land area covered by forest, some 22 million hectares. For both countries, forestry is of great importance.

#### **Emerging data economy**

The presentations by Luke's Lauri Sikanen and Johanna Routa gave the guests a good overview of Finland's forestry and of future trends in the forestry sector. Biogenic carbon dioxide, hydrogen economy, green methane and biodiversity are the themes of tomorrow. It is also about knowledge – the increasingly more versatile and efficient use of data, a data economy. In logging, for example, it's no longer enough for a forestry machine to find a tree to be harvested 'on the same hectare or even on the same metre'. The demand for efficiency in logging is intensifying, which is why 'we need to get to the same centimetres', Routa explained.

#### A superpower of forest resource data

Luke produces annual data on Finland's forest resources, forest health, biodiversity, carbon stocks and their changes. The National Forest Inventory (NFI) has been carried out in Finland since 1921. The data produced by the NFI is based on statistical sampling and the measurement of more than 100 variables annually in experimental plots located throughout Finland. Municipality-specific forest resource data and forest resource maps are produced every two years from a combination of NFI's field data and satellite imagery.

In the past, data collection was entirely footwork. Now every hectare of private forest in Finland is documented by laser scanning. Originally developed for military purposes, laser scanning has been harnessed to provide the best possible information on Finnish forests.

Finland is a superpower in forest resource data. Finns have a lot to offer to the world in terms of forest resource data expertise. There seems to be a need for data also in France. Both Finland and France have a large number of private forest owners. The average size of a private forest holding in Finland is 30 hectares, and forest resource mapping and data collection are already in the genes. In France, on the other hand, the vast majority of privately owned forest holdings are only one hectare in size. When holdings are small and forest data is fragmented, it is extremely difficult and inefficient to carry out a sound forest bioeconomy. There is a desire to increase logging in France. Activation measures will target the country's largest forest owners. For John Deere, France is one of the most important markets in continental Europe.

# **PASSION AND COMMITMENT**

FCO (Atelier Forestier du Centre Ouest) is a family company, based in Egletons (Corrèze - France) and created in 1977 by **Mr. Bernard Abisset**. In the beginning, the company was specialized in the maintenance and repair of forestry equipment of the French brand Cemet – Agrip. The acquisition of the brand by the Finnish group FMG in 1989 led AFCO to continue its development with Timberjack and in 1991, it became a dealer of the brand for 8 districts in central western France.

In 2003, **Marylène Pinlet**, daughter of the founder, took over the management of the company she had joined in 1992.

It was in 2005 that the structure logically became a John Deere Dealer, when the American firm affixed its name to the forestry equipment from Timberjack, bought 5 years earlier.

2013 marks a turning point for AFCO. John Deere attributes a new geographical area to the French structure, which has since extended over 26 departments of the North-West tier of France, from Nouvelle-Aquitaine, to Brittany and Normandy. To provide a quality technical service in this new sector, AFCO decided to rely on 2 service agents, AFCB in Brittany and Cornu SAS in Normandy, structures present for many years in the sector and still today the technical

![](_page_20_Picture_17.jpeg)

# AFCO has more than 500 new machines delivered since 1991.

relays of AFCO on the area.

Today, AFCO continues to focus on what has built its success since 1977: serving logging professionals. With more than 500 new machines delivered since 1991, 30 employees strive every day to respond effectively to customers, with passion and commitment. ■

# "It used to be that you didn't need a map to fell and transport trees"

Now it would seem inefficient without maps.

#### TEXT AND IMAGES: JOHN DEERE

When forest machine contractor **Riku Naarajärvi** heard about the TimberMatic Maps application, he had already become accustomed to digital maps. Forest company map systems had long been in use, mainly in defining a logging area and work instructions, so he didn't have high expectations for the new application. "It used to be that you didn't need a map to fell and transport trees," Naarajärvi remembers thinking. Nevertheless, he decided to give the new applications a chance.

"Curiosity enticed me to take a closer look at the matter, and then I understood that it goes beyond just a map and work instructions, it's about management of the whole production chain. These have been designed with the contractor's real needs in mind."

# Immediate benefits from the ease of use

The first harvester of the Längelmäki-based Pekka Naarajärvi company was the legendary Lokomo 990. Today the machine chain has

# "I thought, 'Why haven't these been available earlier?"

State State

TTD.

Riku Naarajärvi

![](_page_23_Picture_0.jpeg)

three John Deere forwarders and the 1270G harvester, acquired in 2021, and the Timber-Matic Maps and TimberManager applications that came with it.

The ease of use of the maps and the benefits they bring to the day-to-day work were immediately clear. "The application automatically marks the location and species of the felled logs for the forwarder operator, making the work planning more efficient. There's no more guessing, and finding the logs is easy in the dark or in the snow," Riku Naarajärvi says.

The possibility to add different markings to the map, like retention trees, soft terrain areas and notes about the tracks also received praise. And the fact that TimberManager made the site planning even more precise with driving routes, landing areas, and estimates of different timber species quickly convinced Riku Naarajärvi about the usefulness of the application. But that was just the beginning.

# Advanced map layers unlocked new possibilities

Introduced to Finnish customers in autumn 2022, the advanced map layers brought a lot of new features for contractors and operators: notifications of forest use, terrain map with oblique view, drivability maps highlighting moist terrain and steep slopes, visibility map, thinning removal, tree length, and landing suitability map.

"The advanced map layers unlocked the possibility to use data in a totally new way," Riku Naarajärvi says, and adds: "I thought, 'Why haven't these been available earlier?'"

Preplanning a logging site is really easy. The basic data about the site is easy to copy from forest company maps, and the actual logging site-specific planning is done using the detailed data provided by the new map layers in the TimberManager application. "For example, driving routes can be planned based on the terrain map with the oblique view and the drivability map. They show the terrain contours, like big boulders, steep slopes and ditches with surprising accuracy. The reality in the forest can sometimes differ, so the machine operator's visual assessment is still needed, but the map layers are at least indicative. The features of the map

# Driving routes can be planned based on the terrain map with the oblique view and the drivability map.

layers are used in preplanning prior at the work site and in real time as the work progresses." According to Naarajärvi there is already an advantage by having familiarity with the site already during the planning phase and then learning more as the work progresses.

"For example, marking a retention tree can be done already when visiting the site and walking in the forest. When you place a mark on the map in the forest, the data is immediately visible to everyone working at the same logging site. There's no need to guess what this or that means. It's also easy to plan and monitor compliance with instructions. The ultimate responsibility has shifted from the felling to the planning stage."

# Oblique view map shows terrain contours

In addition to the contractor, machine operators also find the new map layers useful. "I've heard comments that, without Maps, the work wouldn't go as well," says Naarajärvi. The oblique view map, mostly used by operators, shows especially the small contours in the terrain. A standard topographic map doesn't do this because its symbols and the spaces between the contour lines are rarely detailed enough. The moisture map showing where water is also helps in planning. The information makes it significantly easier to plan the driving routes both from a perspective of efficiency and preventing terrain damage. "The tracks are easier to make also while keeping the forwarder operator in mind. Verbal instructions and different markings can be added to the map." Markings made during the felling can also reduce unnecessary driving. "If you divert from the driving route to make a seed tree or windthrows and bring the logs next to the driving route, you can make a note to the forwarder operator that despite the track being visible, there's nothing to get to."

![](_page_23_Picture_14.jpeg)

![](_page_24_Picture_0.jpeg)

#### Map layers have a lot of information

Riku Naarajärvi uses the information provided by the visibility and thinning removal maps in defining the need for clearing and thinning in relation to the best growing density. The tree length map shows an accurate canopy model and can even show the length of a single tree, making the estimating of removals from a selected area more accurate than ever. Naarajärvi uses the information also in planning where to lay down tree branches.

Riku Naarajärvi says that the map layers provide new tools also for demanding conditions. "Take, for instance, the removal of a dominant tree when it's pitch black outside. Finding it on the length map is easy. Or when trying to keep even route spacing in a dense forest, now there's a tool for that too." Sometimes in the forest it is difficult to estimate the distance to the previous route. Now you can define, say, a 20-meter alert zone around the machine. When the edge of the alert zone approaches the previously recorded logging route, the distance is right. "Hands down, an excellent feature."

#### Continued development of Timber-Matic Maps and TimberManager

Close development with customers ensures that

the applications serve users in the best possible way. Riku Naarajärvi values John Deere's active development work and willingness to listen to customers. "Working with Deere has been very smooth. The feedback, wishes and ideas we've offered have often been implemented quickly if they had any potential. It feels like Maps, Manager and the map layers have been developed for the customer. I have no doubt that there are plenty of new features on the way."

"I can't even imagine logging without Maps and map layers. They have advanced tremendously. The more information, the more benefits. That's how it goes," Riku Naarajärvi sums up. ■

# Enchanted by forest machinery

### John Deere forest machines have that certain and special something that keeps fascinating me.

TEXT AND IMAGE: DANIEL HIRSCHFELD

oday, I know the process behind a forest machine from the design and testing to the customer in the forest. That makes every picture special to me: knowing how and where it all started, which processes it involved, and how the machines work in action. The continuous development and innovations, like IBC, TimberMatic Maps and TimberManager, the constantly improved drive comfort and easy operating, and the responsibility taken for nature and environment make John Deere very special to me. I appreciate it how they value the drivers' and customers' opinions.

John Deere is like one big family. The dealers, contractors and operators all have a special connection with John Deere Forestry, and they are ready to make any extra effort possible during the photo shooting to make the pictures extraordinary. Whether it means driving to a certain area in the forest just because of a terrific surrounding or moving the machine to

![](_page_25_Picture_5.jpeg)

a new position to make it look better and have all important parts highlighted.

My favorite picture was taken in fall 2022. The photo is special because on that day I finally completed my collection of G series harvesters. The forest in the background has that certain something and the machine is perfectly placed. But to be honest, I love all my pictures.

My collection of forwarders is not yet complete, but it is still missing the top model. John Deere 1910G in action. Taking a picture of it would be a dream come true.

Daniel Hirschfeld, photographer, Germany. Instagram: dani\_deere24

# EVERGREENS

he Lokomo FMG 909 forwarder is quick to start up when Esko Rauva turns the ignition key. We are in Pirkanmaa region, Finland, in the middle of a landscape of forests and fields and next to the predecessors of today's forest machines.

Rauva is a long-time contractor in logging and agriculture. Back in the day, he acquired a used FMG 909 forwarder and a 990 harvester. He has made sure that a piece of forest machine history has remained in presentable condition to this day. These machines aren't used in the company's logging operations, but last summers the 909 has loaded hundreds of cubic meters of logs from thinning sites.

![](_page_26_Picture_4.jpeg)

Still a very functional machine for small-scale contracting! At one time, the Lokomo 909 was the most popular forwarder in Finland. Rauva says there shouldn't be any others just like it in Finland. The story goes that it had been left behind in a big sale to Poland, and that's how the machine remained in Finland. The Polish features of the machine include bigger tires and a more robust load space and loader.

It's been more than 20 years since the nine-ninety harvester has felled trees professionally. Time and sitting unused

> eventually take their toll, but it starts up like a new machine. The computer would also have to be updated for modern logging work, but it could fell and cut trees even right now. Both the harvester and the forwarder have racked up an estimated 25,000 hours of operation.

The machine models were made at the Joensuu factory in the late 1980s. With the Lokomo forwarder's engine running, Rauva offers a tip: "Machines stay in good condition when they are used for their intended pur-

pose." For logging!

Send us pictures of your evergreen machines InTheForest@JohnDeere.com

![](_page_26_Picture_12.jpeg)

# H212 provides a productivity boost

Steve Cazorro, CEO of the logging company Farbon, is carrying out the first thinning on 85 hectares of land. The area was planted after a storm in 1999 and the forest is now in the initial harvesting phase.

See full article on page 12.

![](_page_27_Picture_3.jpeg)