



2019 SAFETY AND ENVIRONMENT REPORT



ERMEWA GROUP IN 2019



€486m
2019 Revenue

€264m
2019 EBITDA

€269m
2019 CAPEX

1,000+
Customers

40+
Offices
worldwide

c.750
Employees



RAILCARS
42,000 units



TANK CONTAINERS
60,000 units



WORKSHOPS



- #2 player in freight railcar leasing in Europe, with a market share of around 17%
- Strong presence across various sectors in major European countries
- #2 largest fleet in Europe and largest fleet in France
- All types of railcars owned, with over 300 different types of wagons
- Average leased fleet age of 32 years
- Strong customer base with blue chip companies



- #1 player in global tank containers market and more dominant in specialized and gas tank container leasing markets
- Global presence in more than 80 countries
- Dedicated Chinese domestic fleet of 2,600 units
- Average fleet age of 8 years
- Wide range of industrial customers in various segments: Oil, Chemicals, Mining, Transportation, Food, etc.



- 6 workshops strategically located across France
- Undisputed leader on the French market
- Supporting the railcar leasing activity and providing services to 3rd-parties
- Service range covering all maintenance needs for railcars: wheelsets & railcar maintenance, transformation, retrofit and new railcar construction
- Design capabilities for new railcars
- European certificates
- Around 45% of external revenue



SAFETY, QUALITY AND ENVIRONMENT POLICY

Our business operations must fall within a long-term sustainability logic. This means that on top of the need for technical, economic and commercial performance on a day-to-day basis, our Group must depend on fundamentals which guarantee long-term development and make a certain number of commitments towards its employees and partners.

For Ermewa Group, these fundamentals are

- **First, assets to be maintained:** Group employees' expertise, economic effectiveness of our operations and environmental quality;
- **And second, basic principles to be observed:** risk management, investment by everyone, responsibility shown by everybody, continual improvement process and environmental protection.

With regard to our commitments, our duty is to

- Ensure the health and safety of our employees and persons involved in our operations.
- Satisfy our clients and assist them to ensure the safety of their operations.
- Deliver reliable, compliant and certified products and services.
- Comply with applicable laws, regulations and procedures.
- Naturally apply a sustainable development approach.
- Maintain employee satisfaction and motivate them to be involved in the continual improvement process.

In order to meet these commitments,

WE HAVE

- Implemented a Group Safety Management System.
- Created a Group Safety Management Committee.
- Adopted a common event management method in order to provide optimized feedback.

WE KEEP

- Controlling compliance with procedures and regulatory requirements relating to Safety, Quality and the Environment.
- Communicating internally on the performance of the Safety Management System.
- Assessing the risks of all our operations by using relevant indicators.
- Providing continuous training to all our employees.

Ermewa Group Management Committee



David Zindo
CEO Ermewa Group



Etienne Fallou
CFO Ermewa Group



Caroline Tomkevitch
HR Director



Agathe Marie
Legal & Insurance Director



Stéphane Gavard
CTO Ermewa Group



Peter Reinshagen
Managing Director Ermewa



Vincent Martin
Managing Director Eurotainer



Julien Mathiaud
Managing Director Inveho

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MESSAGE FROM THE CHIEF EXECUTIVE OFFICER

Dear Employees,

Ermewa Group has been very successful in 2019, probably our most successful year in our recent history. I will leave it up to you to judge the main achievements:

- Our global fleet cleared the 100,000+ mark, while maintaining an overall 90% utilization rate
- We invested €270 M in our fleets and workshops (o/w 1,500+ new-build wagons)
- Inveho delivered 600+ new-build wagons
- We became the world leader in Tank Container Leasing with the acquisition of Raffles Lease
- We conquered our financial independence by raising €1.6 Bn on the private markets

I would like to take this opportunity to congratulate the teams for their great achievements in 2019. Our 750 employees are the solid foundation of our Group.

These numbers and achievements are a further step towards our global ambition: to be a reliable provider of essential services to our clients through the leasing of railcars and tank containers, while maximizing safety, asset life, and environmental protection.

On one hand, this ambition requires agility and proximity. We run our business through our four individually branded offers and serve our markets from 29 locations in 21 different countries. On the other hand, we need a strong "conceptual framework" (Ethics and Values) and a sound "group platform" notably in charge of Financing, IT and Safety rules.

This second "Annual Safety and Environment Report" perfectly illustrates these principles and provides a comprehensive view of our initiatives and results in 2019. As you will appreciate, 2019 was busy again in the fields of Safety, Innovation, CSR, Regulations and Investments.

2020 will be special. As we are finalizing this report, the world is going through the COVID-19 crisis and slowly starts to implement "lockdown" plans. It is a huge shock to both our lives and our businesses. Our 100% involved teams and our ability to continuously serve our customers and keep investing in our fleet and industrial capacities have been and will continue to be key. Return on experience is at the core of our business culture. We will learn. I strongly believe that our Group will overcome the obstacles and wisely navigate through the troubled times to come.

Enjoy the reading.



David Zindo
CEO Ermewa Group

PART I VALUES, ETHICS

OUR VALUES



TEAM SPIRIT

We foster a team spirit

- We identify ourselves as Ermewa Group and share the same values
- We operate as one team with one fleet in each of our business activities
- Worldwide, our teams collaborate to ensure the success of our projects



PROXIMITY

We know our customers

- We offer optimized solutions to meet our customers' needs
- Local contacts are our strength to better address our customers' requirements
- Being close to the market as we actively participate in the evolution of our industry



COMMITMENT

Ermewa Group is a trusted and professional partner

- We deliver on our commitments to various stakeholders
- We guarantee the highest standard of services
- We empower people to take on challenges



TECHNICAL EXPERTISE

We master technical complexity

- Our technical expertise brings real added value to our customers
- We are committed to delivering tailor-made solutions
- We encourage innovative approaches



PROACTIVE

Our approach is proactive and entrepreneurial

- We anticipate customer needs and requirements
- Response time is one of our key assets
- We think 'outside the box'



SUSTAINABLE DEVELOPMENT

We care for people and the planet

- The security of our assets and safe environmental practices are our top priorities
- We value our employees and contribute to their development
- We prioritize long-term strategies and deliver results to our shareholders

OUR ETHICS CHARTER

RESPONSIBILITY TOWARDS CIVIL SOCIETY

- We comply with laws and regulations
- We actively manage risks in accordance with sustainable development principles and act in favour of greater environmental responsibility by reducing the overall impact of the transport industry on the planet
- We respect personal commitments provided they do not involve the Group
- We do not tolerate corruption nor encourage illicit practices

RESPONSIBILITY TO OUR COMMERCIAL PARTNERS

- We are representatives of the commitment and values of the Group
- We believe in free competition and respect our competitors
- We do not accept gifts and advantages that would create a situation of obligation
- We act properly and in an appropriate manner with our customers providing quality, fairness and confidentiality where appropriate
- We confer importance to our partners sharing our ethical principles

RESPONSIBILITY TOWARDS OUR GROUP AND OUR SHAREHOLDERS

- We contribute to the enhancement of the Group's image by sharing the same environmental, social and governance values
- We develop our business activities responsibly and we stand by our commitments
- We communicate reliable, complete and appropriate information on our business activity and results
- We protect confidential documents and data
- We respect and protect property made available to us
- We avoid conflicts of interest or situations that may be perceived as such
- We fulfil our employment contracts conscientiously

RESPONSIBILITY TOWARDS OUR STAFF

- We respect obligations arising from the law, statutes and contracts
- We respect diversity and condemn all discrimination
- We promote mutual respect and do not tolerate harassment
- We encourage our staff to consider the environmental consequences of their actions and seek to minimize the impact where it is reasonably practicable
- We maintain a healthy, secure and harmonious working environment
- We respect the individual and his/her private life
- We are committed to resources and competencies development and improvement policy
- We value expertise and support and encourage entrepreneurial spirit

PART II SAFETY



Safety is the core of our internal communication at every layer of the Group organization.

2.1 SAFETY MANAGEMENT SYSTEM

Ermewa has implemented a Group Safety Management System, created a Group Security Management Committee, and adopted a common event management method to provide optimized feedback. The SMS Steering Committee comprises the CEO, Safety Manager, and coordinators from the three Business Units (Railcars, Containers and Workshops) and Corporate Functions (Technical Management, Finance, Legal, and IT).

A concrete application of the implementation of risk analysis in the railcars BU:

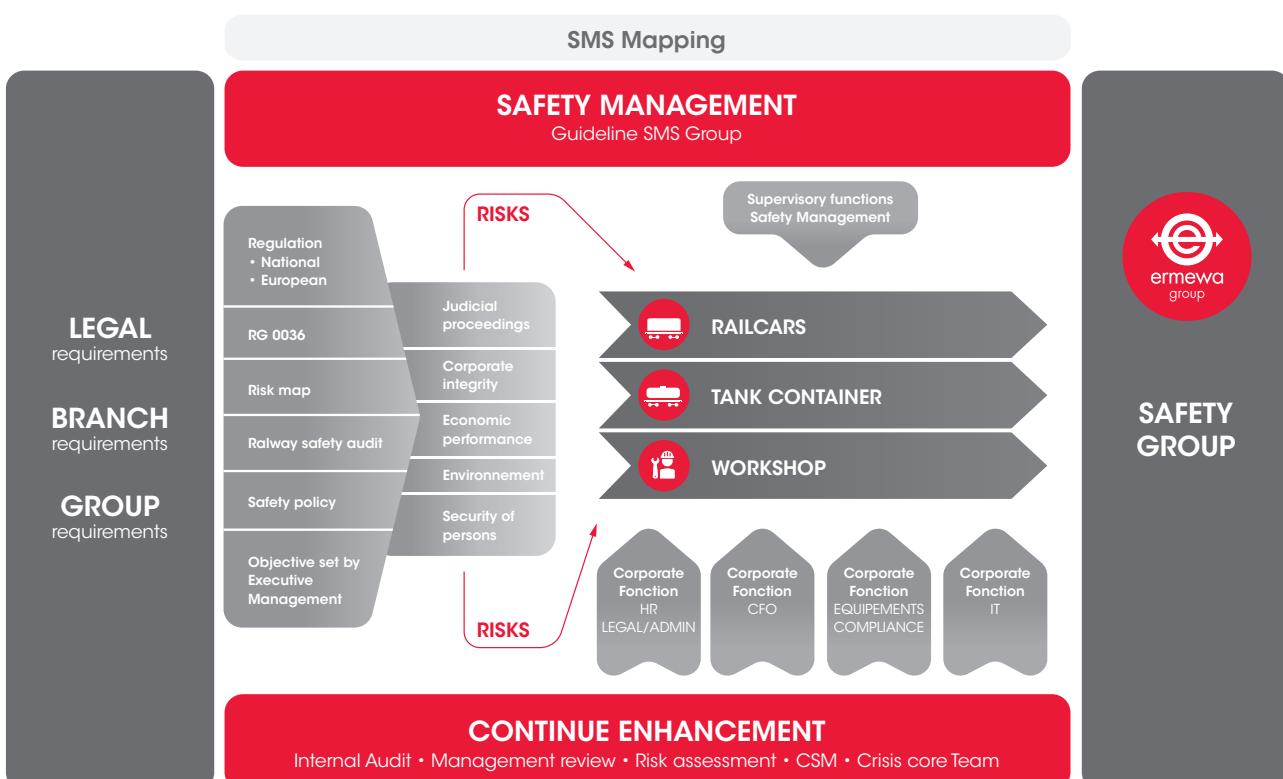
The ERP was upgraded to systematize the production of a risk analysis in case of a vehicle modification. Internal training sessions were held in order to achieve this target. This example shows the maturity of our SMS and its deployment through all the company level.

The SMS guarantees the control of all the risks created by each Group activity and organizes the supervision and control of the risks in order to:

- Anticipate risks and safety (risks assessment)
- Gather and classify events in relation with safety (traceability)

2.2 RISK ASSESSMENT AND TRACEABILITY

One of the goals is to assess the risks of all our operations summarized in the mapping below.



The adoption of a common culture and the application of harmonized rules are the keys of the SMS functioning in order to achieve the safety performance goals.

Safety cannot bear improvisation and each evolution and/or change must be designed to ensure risk control. In that way, the Group has adopted common rules in terms of safety.

RAILCARS

As a specific part of railway safety, the execution of the Common Safety Method is demanded by the Commission Implementing Regulation 402/2013/EU. In compliance with this regulation, the reform of the Ermewa maintenance manual (EMM) has been assessed according to that regulation and certified by an accredited assessment body.

In 2019, a training session was provided to all the employees on safety management and monitoring within Ermewa, with a focus on:

- ECM role and duties;
- What is an SMS and everyone's role within the organization to assess the risk;
- Crisis management procedure.

Ermewa's ERP has also evolved to have better management of the vehicle configuration: a risk assessment is now mandatory in order to perform any kind of modification on a railcar. This risk assessment has to be validated by the ECM Department.

A harmonized process has been implemented within the SMS so that all entities can use a common safety method. The risk management tool deployed assesses the systematic risk from an event which could be impacted by a change.

2.3 PERFORMANCE / ACCIDENTS

Quantitative and qualitative reports, based on the category of incidents that have occurred, are prepared and enable regular improvement of our working procedures.

The Technical Management Group monitors the incidents' follow-up and action plans if required.

Each Business Unit (Railcar, Containers and Workshop) manages its own incidents.

For the Railcar and Container BUs, incidents are first material, with a potential external impact on people and/or the environment.

Frequency and severity rates for 2019 vs 2018 are as follows:

	2019	2018
Ermewa Group Headcount	750	689
Number of days off following Work Accidents	616	557
Severity Rate	0.46	0.45
Frequency Rate	39.27	35.81

RAILCARS

All the railcars incidents are registered and centralized through a single tool in the ERP. Incidents are classified in 4 levels:

- 1 Minor:** Slight injury, or minor damages to one or more wagons, total costs less than 30,000 Euros, or minor impact on the environment (smells)
- 2 Medium:** At least one minor injuries, or important damages to one or several wagons, costs at least 30,000 Euros in total, or impact on the environment (leak)
- 3 High:** At least one serious injury, or minor injuries to five or more persons, or significant damage to multiple wagons, the infrastructure, or the environment, costs at least 150,000 Euros in total, or significant impact on the environment (leaks of toxic gas, loss of product according to RID §1.8.5.3)
- 4 Major:** According to Safety directive 2016-798:
At least one fatality, or serious injuries to 5 or more persons, or extensive damage to multiple wagons, the infrastructure or the environment, costs at least 2 million Euros in total, or massive impact on the environment (fire, population evacuation)

PART II SAFETY

In 2019, there were 437 incidents in which Ermewa was mentioned at least once.

Level 1	355
Level 2	61
Level 3	17
Level 4	4

4 major incidents occurred in 2019, among those incidents, Ermewa's wagons were directly involved in 3 of them but Ermewa has never been considered as responsible.

January 2019

Description :

Major incident in Denmark on a bridge between passenger train and freight wagon semi-trailers loaded on pocket cars (beer transport); 8 fatalities and injuries. The semi-trailer spilled on the track and hit the passenger train. The Danish NSA triggered a European Safety Alert. The kingpins were not correctly locked in the stool/saddle.

Action Plan :

Ermewa checked if the pocket wagons involved in the incident were part of the fleet and that was not the case. The Danish NSA decided as a first step, to ban the transport of pocket cars until further investigations and required railways to undertake risk assessments.

July and October 2019

Description :

A young man died after climbing on an Ermewa wagon parked in the Richwiller shunting yard (Haut-Rhin - France). One young man died after climbing on an Ermewa wagon in Rommerskirchen (Germany).

In both cases, regulatory stickers informing the risk of electrocution by climbing on the wagon were visible. Ermewa was not held liable.

Action Plan :

Since 2018, Ermewa has launched an action plan to remove ladders on existing wagons. All our new wagons are delivered without ladders.

July 2019

Description :

Derailment of eight Shimms wagons in Kumanovo - North Macedonia. Extensive damages to infrastructure and material, only one wagon can be repaired.

Action Plan :

Investigations carried out by a court-appointed expert are ongoing in order to determine the responsibilities; so far Ermewa has not been involved in the investigations.

March 2019

Description :

The Italian National Safety Authority (ANSF) issued a safety alert about the deformation of connecting elements between tank and chassis on 40 RID Zaes tank wagons transporting Chloroform, heavy oil, and slurry.

Action Plan :

Ermewa decided to check all the wagons involved. The wagons inspected with deformation were either sent in workshop for repair, or recycling. The remaining fleet will be inspected on a regular basis. ANSF is kept informed of the controls.

May 2019

Description :

Wagon (H96 type) stopped due to a crack on the chassis. 76 wagons potentially involved. The design of the wagon seems to be the cause (welding issue).

Action Plan :

The whole fleet was inspected; the wagons found with cracks were sent to workshops to be repaired and to modify the support bracket position of the brake lines. Wagons were hired off at the end of the year.

July 2019

Description :

Tightness fault on the tarpaulin cable clamps on 5 RILS wagons R31. Consequence: No electrical continuity.

Action Plan :

The type of wagons potentially involved were identified: Shimm(n)s and Ril(n)s type. An instructional leaflet was provided: the operation consists in replacing the rollers made of synthetic material with steel rollers; replacement will be made at the first favorable occasion.

September 2019

Description :

Fatigue crack on bogie type BA572 WU 80 around pivot found on 2 wagons.

Action Plan :

Ermewa identified 30 wagons involved and inspected them. Fatigue cracks were detected on 7 wagons which were stopped and will be recycled. The other wagons were released into service until Q1 2020 and will be replaced by new wagons.

Main incidents still under investigation

2016 – Incident in Hitrino, one tank wagon whose Keeper and ECM were Ermewa (level 4)

Description :

On December 10, 2016, a train with 22 railcars transporting HazMat derailed in Hitrino station, Bulgaria. An Ermewa railcar (number 10 in the consist) was hit by a nearby object during the derailment, which caused the tank to be punctured. This puncture produces a gas leak, which caused an explosion shortly after the derailment. The human toll was heavy, with 7 casualties.

Action Plan :

In accordance with our SMS procedure, Ermewa triggered the Crisis Core Team on 10 December 2016, managed by the CEO and assisted by the Group Safety Manager.

Ermewa's experts went to Hitrino the day after the accident, to gather all the data relevant for the enquiry. As ECM and keeper, Ermewa produced all the maintenance documentation required.

Ermewa also made a FEM (Finite Element Modelling) study of the dynamic impact that caused the tank puncture.

This study showed that the involved wagon, built in 1971, has mechanical characteristics at least as high-performance as a modern railcar.

The enquiry by the Bulgarian authorities concluded that the main cause of the accident was the high speed. The Ermewa railcar was left free from any responsibility.

As a result of the investigation carried out by the Bulgarian authorities, criminal proceedings were instituted against the two engine drivers by the Shumen Regional Court. The two drivers were found guilty by the court of first instance and have received long prison sentences.

An appeal has been filed and accepted by the Court.

PART II SAFETY

2017 - Cracks on BA004/ZDB29 wheelset

In November 2019, the JNS (Joint Network Secretariat) Task Force formed by EUAR issued a final report with long-term mitigation measures to implement. Ermewa already applies stricter guidelines and is thus fully compliant with those recommendations.

Cracks on AFR22 bogies

Description :

On November 10, 2017, the French NSA, Etablissement Public de Sécurité Ferroviaire (EPSF) published a safety alert about crack damage that could affect AFR22 bogies. Ermewa's fleet has potentially railcars 1,221 affected by this alert.

Action Plan :

The Crisis Core Team was triggered immediately. Thanks to the involvement of the whole Ermewa team in Europe, 100% of the bogies were controlled before the end of 2017.

During the control, cracks were detected and confirmed.

Ermewa prepared an action plan and presented it to the French NSA. EPSF validated the action plan from which Ermewa made a finite element fatigue analysis which confirmed the anticipated damage risk to this bogie. Based on these conclusions and in order to determine the cause of this damage, Ermewa implemented a repair and modification methodology certified by a notified body and validated by the French NSA at the end of 2019.

Exceptional measures were deployed by Ermewa's Technical Department to monitor the behavior of the risk area as long as the wagons have not been repaired.

2018 – Derailment of a railcar, transport of chloroform in Italy

October 2018

Description :

Derailment took place in the center of Rapallo. There was no human or environmental damage, only material damage. A legal investigation against the owner (Ermewa Ferroviaire), the railway undertaking (Captrain IT) and the infrastructure manager (RFI) is opened.

Action Plan :

Crisis management triggered, Ermewa made the decision to check all the wagons with same year and manufacturing characteristics. As of 2019, investigations are still ongoing through a lawsuit in Italy. The root cause and responsibilities have still not been determined.

CONTAINERS

Two incidents can be reported:

September 2019

Loss of a tank container loaded with product (Forane) in Mexico.

Description :

The driver was being forced to pull over by men in armed trucks. He made a move to try to avoid them but flipped the truck. The driver got injured (stitches to his ear and some scrapes and bruises). Eurotainer was not held responsible.

October 2019

Loss of a tank container loaded with product (Sodium cyanide) near Sao Paulo Brazil.

Description :

The driver lost control of the truck, hitting the guard-rail in the opposite lane and tipping over. No leakage but the driver was seriously injured. Eurotainer was not held responsible.

WORKSHOPS

One main human incident can be reported:

June 2019

Description :

Despite being equipped with acid suit, an operator had contact with nitric acid on his wrist while stripping a wagon by spraying. Consequence: he was seriously injured and went to hospital.

Action Plan :

A cause tree was performed, and the following measures were put into place:

Chemical risk awareness training for all staff. Change of PPE (purchase of reusable anti-acid suits + gloves + integrated boots). Creation of a good dressing practice upon receipt of new equipment. Purchase of diphtherine in addition to the existing stock of treatment products.

2.4 ACTIONS TO IMPROVE SAFETY

Safety is Ermewa's absolute priority. Safety is neither an abstract concept nor an accumulation of sometimes abstruse statistics and indicators. It is a simple and concrete promise: to guarantee total safety to our employees in their work and to our customers in the use of our resources and services. It is a serious collective responsibility, which must be top-of-mind in all our decisions and actions.

RAILCARS

Safety is a core value at Ermewa, we all strive to ensure safety for our railcars, staff and customers. Whatever our position in the company, we must relentlessly ensure data integrity, which is key to the reliability and performance of our business, and continuously focus on assuring the safety of all the wagons we lease and maintain.

Audit on all railcars transporting Hazardous Materials

Ermewa had to handle high or major level events that occurred in the last three years on HazMat wagons. As ECM and keeper, Ermewa is responsible to lease safe wagons which comply with the rules in force.

To reinforce this commitment, Ermewa's management has decided to implement a full assessment of the risks to which Ermewa is exposed in the context of the operation of its fleet of wagons transporting hazardous materials. The initial results demonstrate that directions for improvement should be specified in the document management process. A similar initiative will be implemented for containers transporting hazardous materials in a few months' time.

Ermewa single maintenance guideline

As ECM and as part of the maintenance development function (Regulation EU445/2011 repealed effective starting June 16, 2020, replaced by Regulation EU2019/779), Ermewa is responsible for the management of the maintenance documentation, including the configuration management, based on design and operational data as well as on performance and return on experience.

In 2018, Ermewa made the decision to merge the existing maintenance reference systems (Ermewa, SNCF, VPI) through a single maintenance guideline: Ermewa Maintenance Manual (EMM) in order to simplify its management and reduce the risk of errors.

In 2019, as part of the Common Safety Method regulation (EU402/2013), a risk assessment of the EMM was performed and validated by an accredited assessment body.

The implementation is scheduled in 2020.

In addition to this evolving approach in the maintenance organization, a first E-learning session was deployed to train all employees on this new maintenance guideline, which is a significant change in the railcars BU organization.

In 2019, Ermewa also launched a new maintenance workshop assessment process with the goal of having a single procedure throughout Europe as will be the case with the EMM.

PART II SAFETY

CONTAINERS

Several training sessions took place either with customers or suppliers with one main target: improving safety.

Training session was held for a customer: Dow Chemical China in Shanghai.

Issues related to seals or operations of ISO tank containers, the regulatory aspects or Eurotainer's equipment were discussed in detail by our teams.



Eurotainer also provided a training session with a customer in Mexico leasing Cryogenic vessels. Partnering with three service providers, Eurotainer provided a three-day class to more than 50 people on the safe operation, maintenance, handling, and transportation of T75 Cryogenic equipment.

Eurotainer also worked, with a gasket provider for high end equipment, to organize several training events at both manufacturing facilities for tank containers and at depots with regards to proper torque techniques and bolted joint assembly in general.

WORKSHOPS

Ensuring the safety of staff and equipment is a priority of Inveho's workshops.

In 2019, 3-day events on safety were organized within the Inveho's workshops with the intervention of David Dalmasso. In particular, he made employees aware of the importance of wearing PPE. In 2000, David Dalmasso lost his left leg following a terrible accident at work. Fourteen years later, he became world champion in wheelchair tennis. He came to raise awareness among the teams through his own story.

Investments were made in 2019 at the Inveho UAB site (North of France) in particular (30% increase in the covered surface area of the workshop thanks to a 1,250m² addition) in order to enable employees to work in better conditions.

Ermewa outsources function D "Maintenance delivery function" of ECM regulation (445/2011) to the workshops which deliver the required technical maintenance of a freight wagon or parts of it, including the release to service documentation.

As part of this function, training sessions are regularly conducted in the workshops when the maintenance reference system evolves. That will be the case in 2020 with the implementation of the EMM.

In order to make wagon lifting operations as safe as possible, particularly in the context of the development of Mobile Maintenance, Inveho has recently acquired multiple sets of latest-generation automated hydraulic lifting columns.

A total of 18 sets of 4 columns are distributed over all the division's sites. The mobile column cranes offer real ease of use.

They can be moved as required to any location in the workshop or site.

Installed in a few minutes, they take up very little space and it is possible to connect up to 32 fully synchronized columns simultaneously. Each column is equipped with a multi-functional control panel.



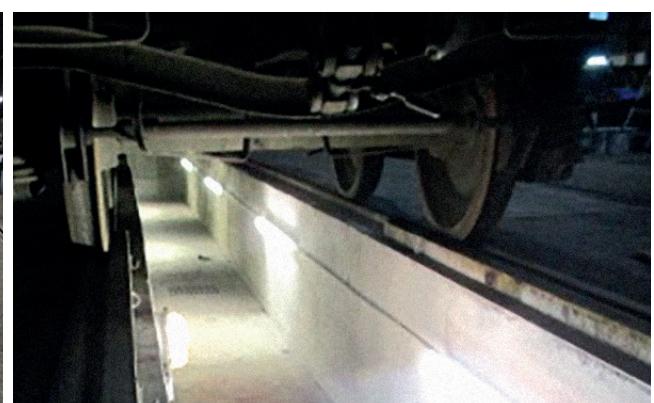
Safety improvement within the workshops

Upgrading of the workshop tracks

Following numerous risky situations and via feedback (risk of derailment when shunting in and out of the wagon, difficulty in positioning the lifting columns and risks of falls that could affect the state of the ground), Inveho IDF (Île-de-France) has decided to refurbish the concrete slabs of the four tracks in the workshop.

Enlargement or covering of pits

A pit has been extended at the Inveho IDF workshop in order to comply with the recommendations of the VPI maintenance guideline, which recommends a pit that is long enough to handle one wagon; this work optimizes ergonomics and work at the station.



Covering the pits helps to secure the area by preventing falls into the pits when they are not in use



PART II SAFETY

Clear identification of ATEX areas



The employer must identify areas of the workplace where explosive atmospheres may form.

This zoning makes it possible to ensure that all equipment, electrical and non-electrical, is suitable for the type of area so that it does not constitute the potential source of ignition. The marking is clearly visible to protect the employees.

Dismantling area for asbestos parts

In order to treat wagons with suspected asbestos parts (slide bearings, pivot liners), Inveho UFO has equipped itself with a specific decontamination airlock which ensures safety for the operators.



2.5 SKILL, TRAINING AND KNOW-HOW

Due to its business, Ermewa operates in a systemic environment and a high level of expertise is required. In order to meet this expectation, Ermewa decided to work on creating a dedicated training system. A training structure project will be initiated in 2020 and will provide all employees with the training they need but also develop learning and mentoring. In order to carry out this project, Ermewa aims for a partnership with a recognized and competent training body.

Internally, an E-Learning tool has been developed in order to offer an accessible learning tool to everyone. The first E-learning training was dedicated to the implementation of the Ermewa Maintenance Manual.

PARTNERSHIP WITH SCHOOLS

Mitigating the risk of loss of skills is a key goal for our activity.



- In September, Ermewa and GATX signed a cooperation agreement with École Centrale de Lyon and Technische Universität Berlin on the future of Rail Freight on the basis of an in-depth analysis of the levers implemented within the aerospace industry over the last 20 years and on lessons that can be learnt from them and that could be transposed to railway activities : the "Aero-Ferro Benchmark" project. Their research will focus on important areas such as:
 - Safety: how do industry players implement and develop a sustainable safety culture?
 - Maintenance: how do the two modes of transport organize their maintenance procedures?
 - Business models: how do the two industries structure their business models for the rental market.
- Ermewa also continues to work closely with ESTACA (Ecole Supérieure des Techniques Aéronautiques et de Construction Automobile/Aeronautic, Aerospace, Automotive and Railway Engineering School) or Club of Trainees and International Volunteers in Business (Club des Alternants & VIE).
- In 2018, Ermewa launched a project with schools to support engineering studies and promote railway sector to students aged 14-15. As we received very positive feedback from the students and the school principal, we decided to continue these activities. Therefore in 2019, Ermewa supported a grammar school in Czech Republic through a financial donation to purchase new equipment for the physics laboratory.

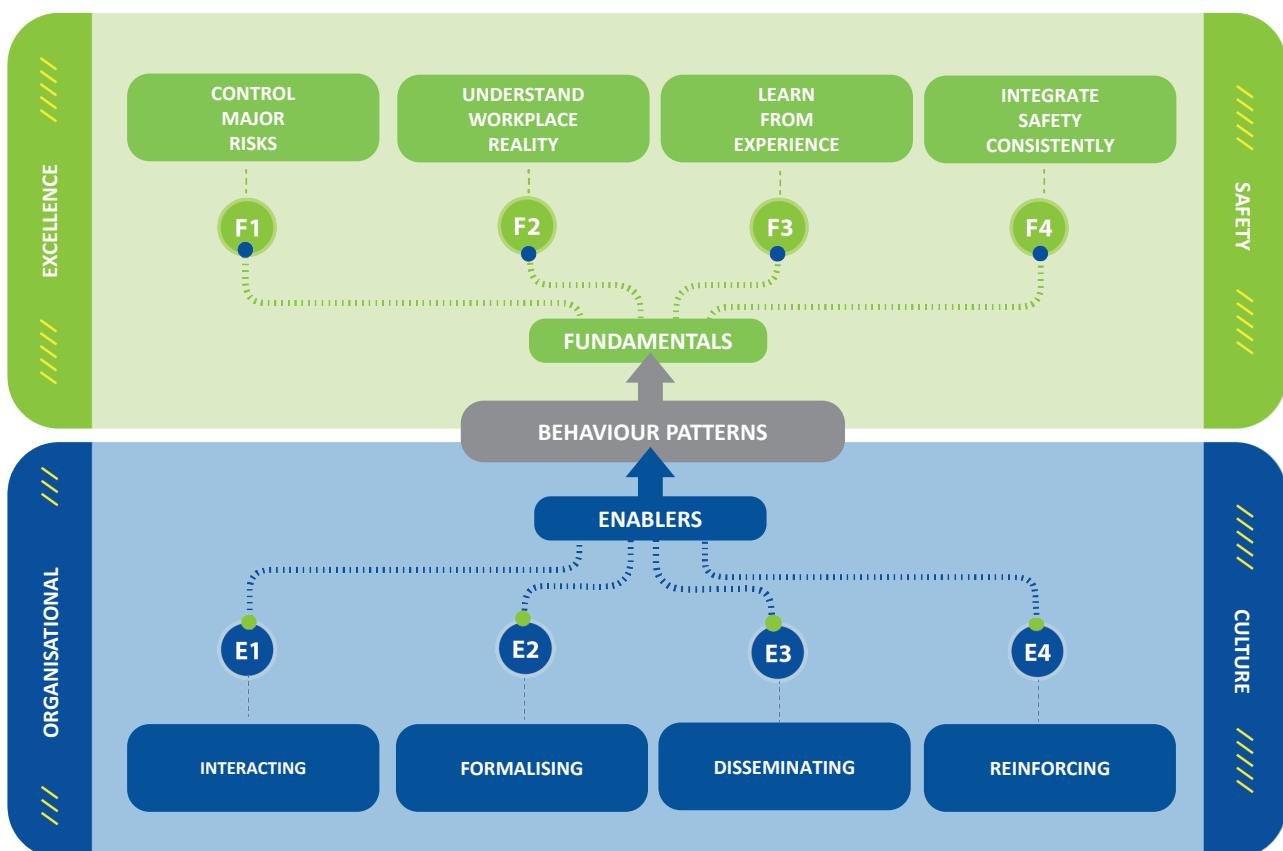
PART II SAFETY

2.6 SAFETY CULTURE

Safety culture refers to the interaction between the requirements of the Safety Management System (SMS), how people make sense of them, based on their attitudes, values and beliefs, and what they actually do, as seen in decisions and behaviors. A positive safety culture reinforces the effects of a Safety Management System, improving the capability and efficiency of safety management. As a European railway leader, Ermewa wants to make its commitments to promote safety more visible.

Following the initiative of the European Railway Agency, Ermewa has signed the "European Railway Safety Culture Declaration". Through this declaration, Ermewa is committed to raising awareness and promoting a positive safety culture throughout the rail industry.

The European railway safety culture model developed by the European Railway Agency is a conceptual and evaluation framework, which allows the user to assess safety culture and identify areas for improvement. Ermewa fully supports this initiative and considers it another form of commitment to promoting the safety culture.



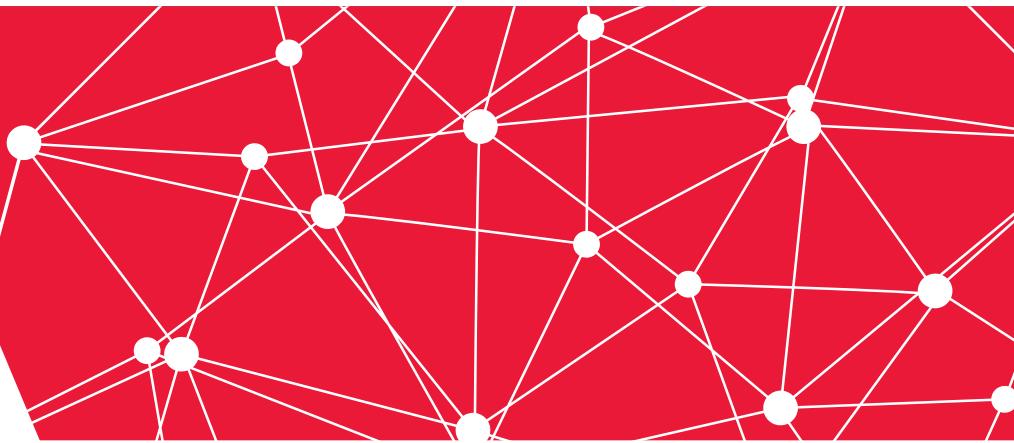
* The European railway safety culture model has been developed with the support of an ad-hoc task force created under the aegis of the Agency's Human and Organizational Factors Network. It has also benefited from the expertise of the Institute for an industrial safety culture. Graphic design: Baptiste Prat.

SEMINARS, FAIRS

To promote a safety culture within the Railcar BU, Ermewa organized seminars in 2019:

- Transport Logistic in June: during the fair held in Munich, Ermewa had a corner dedicated to safety and daily conference about: human factor in safety.
- Technical meeting in October: this internal meeting was an opportunity to launch our "Ermewa Workshop Alliance" project. We also presented our ambition in term of safety, role in rail transport development, and about supply chain maintenance and how to improve its performance.

PART III INNOVATION AND DIGITALIZATION



RAILCARS Chlorine railcars

At the Transport Logistic fair in Munich, Ermewa exhibited its new chlorine wagon in partnership with a railcar manufacturer. This tank railcar has a passive safety level higher than the one required by national, European or international regulations. Active safety will also be part of this railcar thanks to digitalization.



PART III INNOVATION AND DIGITALIZATION



DIGITALIZATION

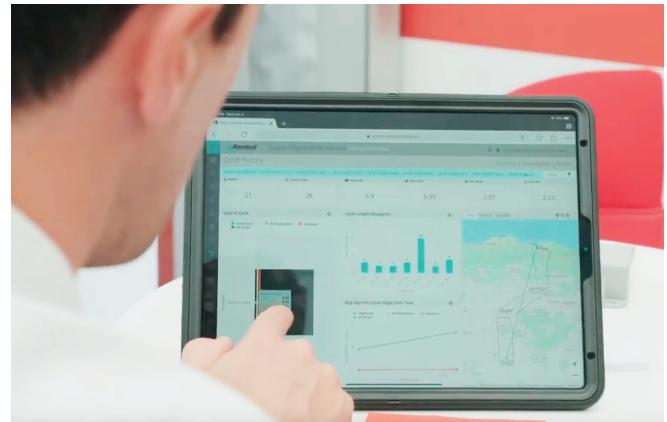
One of the key advances in the digital transformation of freight railcars is the creation of a virtuous transport system for a sustainable safety culture.

The idea is to migrate from the corrective and preventive maintenance process used for decades on railcars to predictive maintenance adapted to each railcar depending on how it is used. This approach will help optimize maintenance operations which will then be applied to meet the specific requirements of each unit and piece of equipment.

Ermewa's target is to have 20,000 "smart wagons" equipped with telematics device in 2022. By the end of 2019, 6,300 railcars were equipped, with many customers tracking and tracing their fleet on the Amsted Digital Solution (ADS) platform.

New sensors have been tested and are now available: the loading/empty, temperature and open/close sensors developed by ADS. New projects are on-going with Knorr Bremse, SKF and CIMES.

- At the Transport Logistic fair in Munich, our partners Amsted Digital Solutions, Knorr-Bremse, and Cimes had a dedicated space at our booth as co-exhibitors to present and explain their solutions. Amsted Digital provides end-to-end, integrated telematics solutions, a seamless end-to-end platform that helps us improve transport flows, reduce management costs and optimize fleet maintenance.



Knorr-Bremse, the world's leading manufacturer of braking systems, is currently focusing on the digitalization of rail freight transportation products and applications. The services provided by Knorr-Bremse's digital solutions focus on safety, transparency, process optimization and cost reduction to the benefit of rail transportation sectors.

Cimes is an engineering and consultancy firm specialized in numerical simulation, engineering tests and software developments. Cimes is currently developing with Ermewa "digital twin" technology associated with the monitoring of wireless stress sensors, to enable optimizing maintenance operations.

- As part of the Connecting Europe Facility 2014-2020 "Transport calls", Ermewa and Knorr Bremse obtained a grant to improve telematics solutions for safety and maintenance in digital railfreight transport.

Global objectives are to:

- Monitor the real condition of brake components in operation
- Improve railway safety by anticipating the brake damages

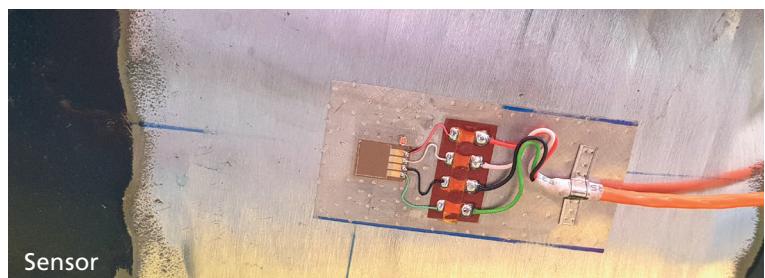


PART III INNOVATION AND DIGITALIZATION

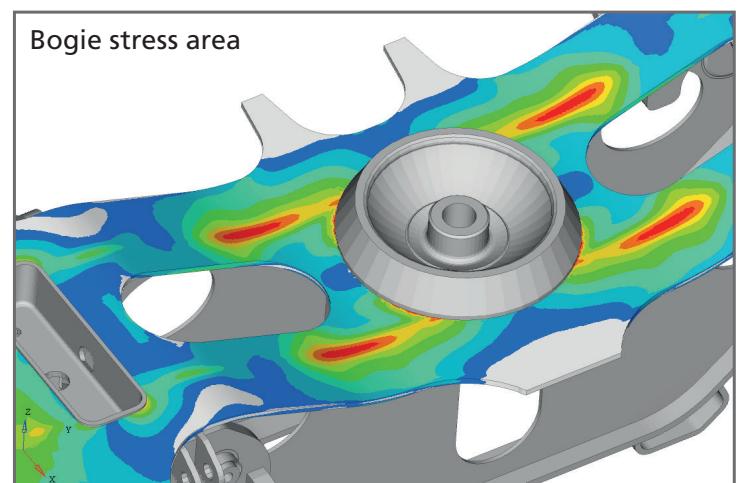
- As part of our R&D, an experimental railcar was commissioned in mid-August for a period of several months.



This vehicle is fitted with many sensors provided by Cimes, the purpose of which is to optimize bogie maintenance in particular. They communicate with an onboard AI system that measures, records and transmits all the information gathered which is then analyzed by our technical R&D teams.



The energy required to operate the onboard systems is provided by solar panels on the railcar's body.



Specific digital simulation algorithms and software have been developed to help understand wear phenomena and support data processing, thus helping to continuously improve the predictive maintenance system through the EMM.

- VPI has renewed the working group on Digitalization (VPI08), leading to new momentum on digitalization between ECM and workshop
- 2019 has been a key year to put in place the fundamentals for Ermewa and railway freight for the coming years and to draw what Railway 4.0 is going to look like:
 - Supply Chain Visibility and Optimization
 - Condition-based Maintenance
 - Digital interfaces between railway stakeholders

PART III INNOVATION AND DIGITALIZATION

PERFORMANCE AND SAFETY IN A GLOBAL RAILWAY SUPPLY CHAIN



Technischer
Innovationskreis
Schienengüterverkehr

Ermewa is also member of TIS (Technical Innovation Circle for Rail Freight Transportation). The goal is to draw up viable proposals for how rail freight railcars can be further developed (innovative bogies, brake systems, wheelsets) and new technologies (telematics, automated operations such as brake test) introduced on a step-by-step basis between now and 2030.

The work on Digital Automatic Coupling has led to the definition of technical specifications for validation tests of the solution that will become the European standard.

Compact brake study



Ermewa has also launched a study to analyze the impact of the introduction of the bogie-integrated brake system to replace conventional braking on our new wagon investments, including:

- Estimation of variances on maintenance costs
- Variances on investment costs
- LCC (Life Cycle Cost) for a life of 32 years

A few thousand of Ermewa's railcars are already equipped with compact brakes. The objective is to assess the relevance of a massive development from 2020 on all Ermewa's investments.

PART III INNOVATION AND DIGITALIZATION



CONTAINERS

- Eurotainer ordered the first so called "Square tanks", which optimize volumes in a standard ISO-frame. Capacity increased from 26,000 L to 29,000 L.
- Eurotainer is the first company to provide tanks for the bulk movement of a certain Organic Peroxide under US Special Permit. One of the tanks now in service had its first successful roadside inspection conducted by USDOT with in-transit product in 2019. With additional tanks being delivered in 2020 and future orders for additional tanks expected soon, this is anticipated to be a growing business.
- The first units of a large batch of 60 MEGC assets (Multiple-Element Gas Container) for the company came on lease and operational for moving toxic gases from India to the USA. In accomplishing this task, the units had to have US Special Permits and special authorization from the Indian authority. Working together with the manufacturer and the customer, this was accomplished in an extremely short amount of time considering the bureaucracies involved.



WORKSHOPS

Diversification of wagon maintenance activity

The Inveho division buys between 500 and 650 air reservoirs per year (80% for new construction and 20% for maintenance). The main current suppliers are Le Réservoir (Montluçon - France), BWB (Burgau - Germany) and Invekta (Litomyšl - Czech Republic). The lead times for the supply of these reservoirs have a strong impact on the availability of wagons, particularly in the context of unscheduled maintenance. The costs charged by these suppliers are high and do not really allow for economies of scale even with large quantities.

It was therefore decided to manufacture these tanks in-house at the Inveho UAB site using a robotic welding installation.



PART IV ENVIRONMENT AND CSR



Whistleblowing guide

Ermewa established a "Whistleblowing guide", an incentive but non-mandatory system enabling any staff member (or a casual worker or external collaborator) to report and disclose facts or behaviors related to a crime, a misdemeanor, or any gross and evident violation of the laws, or international commitment (especially but not limited to - psychological or sexual harassment, discrimination, corruption).

RAILCARS

Corporate Social Responsibility

Corporate social responsibility (CSR) is a self-regulating business model that helps a company be socially accountable to itself, its stakeholders, and the public. In 2018, to meet our customer's expectations, Ermewa opened an access via the Ecovadis platform. In 2019, the score of our evaluation is **58/100**, as a confirmed level (Silver) and in real progress compared with 2018. Average score of all the companies assessed by Ecovadis is 43/100. Following topics are covered:

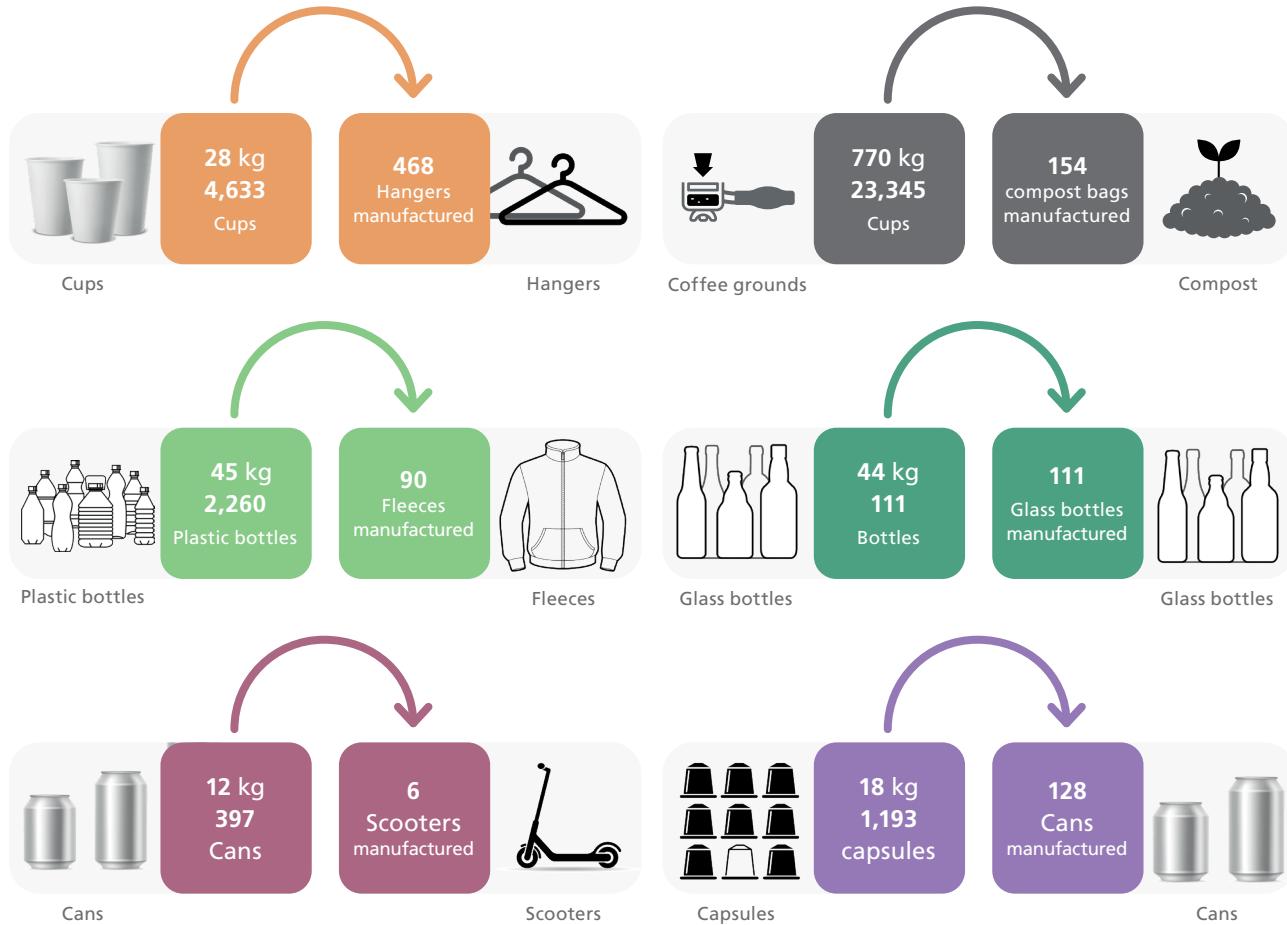
- Environment
- Social
- Business Ethics
- Sustainable purchase



PART IV ENVIRONMENT AND CSR

Recycling

917 kg of waste were recycled in 2019 (plastic cups, plastic and glass bottles, cans and caps) from the Levallois Office (against 886 kg in 2018). Here are the results of the waste-to-energy-conversion:

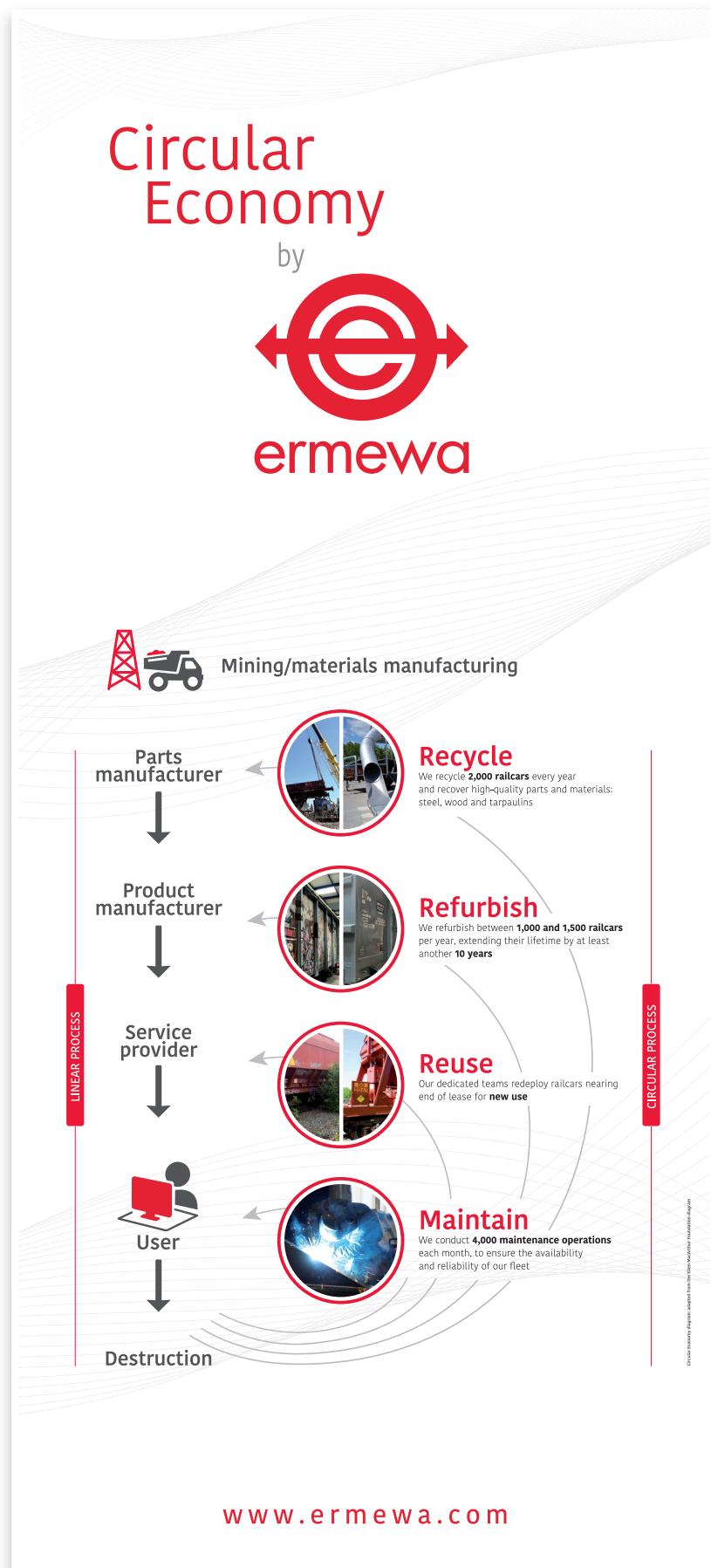


Circular Economy

Circular economy is a major economic and environmental opportunity for the coming years, it proposes rethinking our methods of production and consumption to optimize the use of natural resources and thus limit the waste generated.

Ermewa is challenged to foster its circular economy strategy in order to optimize its resources.

Every year, Ermewa recycles 2,000 wagons to collect different kinds of material and then transforms them into unique items. Reusing its railcars and giving them a second purpose is mandatory for Ermewa and its stakeholders to meet our economic, environmental and social goals.



PART IV ENVIRONMENT AND CSR

Creative recycling projects

In line with its Circular Economy strategy, Ermewa recovers high quality parts and materials from its railcars such as steel, wood and tarpaulins.

Therefore, Ermewa created a set of unique decorative items made of recycled wood floor to give them a second life. Carefully selected artisans worked to refurbish this wood into industrial decorative items such as tables, pencil cases, phone holders, trivets, etc.



Ermewa has worked with a designer to create furniture for its offices in Rotterdam and Levallois-Perret. These unique tables are fully made of recycled wood floor and steel from Ermewa's railcars.



PART IV ENVIRONMENT AND CSR

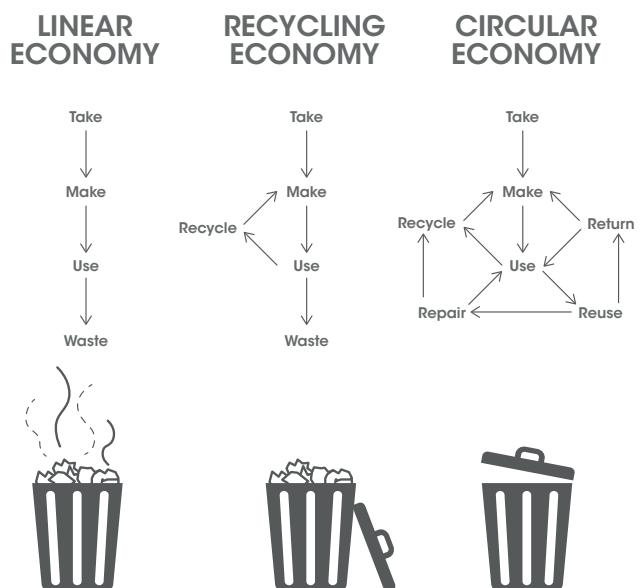


- On July, Ermewa also participated in "The Blue Connection | Circular Strategy Game" organized during the international supply chain congress of FAPICS (French Association of Supply Chain Management). We joined the 1st session of this circular strategy game which explores the opportunities that arise when going from linear to circular.

Through the "Blue Connection game", Ermewa designed and implemented a circular strategy, based on the choice of suppliers, quality and recyclability of materials to buy but also on costs. All processes are connected on the aim of reusing, recycling, refurbishing and repairing".

At the Transport Logistic fair in Munich, a corner and a conference were dedicated to circular economy as well as a video explaining what circular economy is in Ermewa's activity, especially the recycling of the tarpaulin to make bags.

In partnership with a French company specialized in recycling, exclusive bags and accessories in recycled railcars tarpaulins were created. These original pieces have been particularly appreciated by our customers.



- To go further and improve the efficiency of Circular Economy, digitalization will equip our entire fleet. With analysis of data from on-board sensors, Ermewa will be able to preserve the durability of every railcar and guarantee its performance based on its individual condition.



In December, The European Commission published a communication about the **European Green Deal**.

The European Green Deal is a new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases, by 2050.

The European Commission wishes to boost multimodal transport so as to increase the efficiency of the transport system. As a matter of priority, a substantial part of the 75% of inland freight carried today by road should shift onto rail and inland waterways, which is a great opportunity for freight.

A new circular economy action plan will help modernize the EU's economy and draw benefit from the opportunities of the circular economy domestically and globally.

For Ermewa and its stakeholders, Circular Economy is a triple win with economic, environmental and social benefits.

CONTAINERS

- Eurotainer and Raffles Lease have a continuous program of scrapping of tank containers so that 40% of the stainless steel recycled can be used to produce other products and achieve our investment program. Tank containers have a lower carbon footprint than other transport modes.
- Eurotainer has leased cryogenic tank containers for the transport and storage of liquid oxygen to a company specializing in small satellite launch services. The satellites are utilized by private companies and NASA for a variety of tasks including Earth observation, telecommunications, IOT/M2M systems, climate monitoring and asset tracking. Oxygen is used as an accelerant in the rocket firing process. This activity adds value to the virtuous approach to preserving the planet.



PART IV ENVIRONMENT AND CSR



- When in early 2018, a winter storm destroyed the rail line providing a community in Canada with heating fuel, Eurotainer teams mobilized to pull together and refurbish more than 150 LPG tanks to enable Superior Gas to provide emergency supply by road to Churchill community. This exceptional operation was finally completed when the railway line was returned to service at the end of 2019. Tank refurbishment and supply chain re-establishment took place in less than three months, and the entire support activity, including Transport Canada authorizations, lasted approximately two years. The last tanks were returned as the railway was repaired in late summer 2019.

WORKSHOPS

Inveho is supporting an environmental initiative through the Reforest'Action program. To offset the significant use of wood in its activities, particularly when replacing Ermewa railcar flooring; in 2019 Inveho decided to plant 2,000 trees as part of the reforestation project in the Meuse, near Verdun (northeastern France).

This initiative generated numerous benefits:

- 1,158,000 km by car compensated
- 6,000 animal shelters created
- 8,000 months of oxygen generated
- 2,000 working hours created



Stopping industrial discharges into the natural environment.



Inveho UFO uses a large quantity of water for its painting and pickling processes. These activities are highly regulated and monitored by environmental authorities.

The company has set up a system of extracting water from the river and treating it to return it to the river after purification.

For this purpose, a 60 m³ tank to store one week's treated water was installed at the rear of the treatment plant, for pumping and delivery to the treatment channels.

The treatment principle is as follows: filter gardens were created to handle the depollution for a well-characterized pollution load. The garden is dimensioned and the plants are chosen according to the nature and the volumes to be treated.

PART IV ENVIRONMENT AND CSR

As part of the Ermewa group's CSR policy and Inveho's environmental policy, Inveho UFO is piloting a project to install a photovoltaic power plant.

The photovoltaic project is divided into 3 parts:

- Renovation and equipping existing roofs with photovoltaic panels
- The construction of 2 photovoltaic shades (one for the employees' cars, the other for the storage of the railcars).
- The construction of 2 photovoltaic roofs on existing building

The key figures of the project

Technical data:

- Installed capacity: 6.7 MWp
- Photovoltaic surface area: 33,545 m².
- Electricity production: 7.9 GWh/year



Ecological data:

- Equivalent consumption: 2,662 households
- CO2 savings: 543 tons/year
- Energy payback time of the installation: 2 years

Subject to obtaining all necessary permits and authorizations, the implementation is expected to take place in 2022.



The workshops proceeded for the replacement of plastic containers by the installation of a metal drum press whose main environmental objectives are to:

- Limit plastic waste
- Reduce transport by optimizing the filling of the barrel bins
- Limit waste treatment costs

PART IV ENVIRONMENT AND CSR

Health and Wellness

Convinced of our Group's strength thanks to its diversity, equality and more generally its openness, the Group gave its employees the opportunity to get involved in and support causes like mental disability through the organization of or participation in sports events with the association Special Olympics France.

On February, employees from the Ermewa Group took part in a friendly Kin-ball tournament: warm-ups, exercises and fast-paced matches took place celebrating solidarity and fun.



On June, some took part in the charity race organized at La Défense (Paris)



Action for Necker Children's Hospital (Hôpital Necker-Enfants malades) in Paris: Employees of Ermewa Group headquarters in Levallois-Perret participated in the toy collection organized to benefit the children at Necker's children Hospital, a specialist pediatric unit and reference center for rare conditions and serious and complex diseases. Ermewa Group also donated €1,000 to this establishment.



Ermewa has entrusted the preparation of Christmas chocolates in sachets and the delivery of meal trays for its Levallois site to ESATs (Etablissement et Service d'Aide par le Travail – Centers providing care through employment) whose vocation is to support the disabled person, promote their autonomy, their social and professional integration through work, education and training.

Action for Samoa

Samoa is a country of some 200,000 people in the Pacific. In 2019, an outbreak of measles throughout the country led to sixty-three deaths of young children. Eurotainer made a donation to the Village Community Service Trust of Samoa to help with the immunization effort.



RAILCARS

Implementation of 4th Railway Package (RP)

- The 4th Railway Package is a set of legislative texts designed to complete the single market for rail services (Single European Railway Area).
- The ‘technical pillar’, which was adopted by the European Parliament and the Council in April 2016, enhances the role of the Agency by introducing new tasks to ensure a uniform implementation of the EU framework. It includes:
 - Regulation (EU) 2016/796 on the European Union Agency for Railways (“ERA”)
 - Directive (EU) 2016/797 on the interoperability of the rail system within the European Union
 - Directive (EU) 2016/798 on railway safety

Effective date: June 16, 2019.

9 Member States (including France, Italy, the Netherlands) transposed those legislative texts with in particular the provisions of the Interoperability Directive (EU) 2016/797, introducing the new European vehicle authorization (VA) procedure (Regulation EU/2018/545).

For the remaining 17 Member States, the effective date will take place on June 16, 2020.

From June 2019, ERA issues vehicle authorizations (previously, vehicle authorizations were issued by National Safety Authorities e.g., EPSF in France, Ilent in the Netherlands) called APOM (Authorization for Placing on the Market).

ERA is now responsible for managing the ‘one-stop shop’ IT tool through which all application files for vehicle authorizations (Regulation EU/2018/545 from April 4, 2018) shall be submitted.

For the Member States which did not transpose the directives, the National Safety Authorities (e.g., EBA for Germany) keeps issuing vehicle authorizations.

Ermewa decided to comply with the new regulations; since June 16, 2019, all the newly built railcars have been authorized by ERA and can thus be operated throughout the EU area of use. Furthermore, to avoid any legal difficulties when registering new-built railcars, they are registered in Member States that have already transposed the directives.

This 4th Railway Package has a huge impact for the sector; the manufacturers did not anticipate enough the consequences of the new European vehicle authorization procedure and it caused many delays in the delivery of the railcars.

The entry into force of these directives also has a huge impact in case of a change to a vehicle.

If an already authorized vehicle type and/or vehicle is changed, the extent of the changes must be analyzed and a new authorization shall be required if:

- Parameters (or Basic Design Characteristics) affecting technical compatibility between the vehicle and the area of use have been changed;
- Overall safety level may be adversely affected by the change, or the relevant TSI requires it.

PART V REGULATION

Furthermore, a new authorization shall also be required if:

- There is a change to the area of use of the vehicle
- If the entity (e.g., keeper) is not the holder of the vehicle type authorization, which very often is the case, it shall notify the changes to the authorizing entity (ERA) which can lead to a new authorization according to regulation (EU) 2018/545 of 4 April 2018 establishing practical arrangements for the railway vehicle authorization and railway vehicle type authorization
- An IT tool was supposed to be created to manage modification files, but in 2019 ERA was unable to process change demands.

This topic is a real issue that will have to be clarified in 2020.

Revision of Technical Specification for Interoperability (TSI NOI and WAG)

The Regulation (EU) 2019/774 amending Regulation (EU) No 1304/2014 as regards application of the technical specification for interoperability relating to the subsystem 'rolling stock — noise' to the existing freight wagons entered into force on 16th May 2019 (NOI TSI).

Existing wagons not compliant with TSI WAG and NOI TSI will have to be fitted with quieter brake blocks (composite K or LL) or brake discs for the service brake function from 8 December 2024 if they are operated on the quieter route.

A "quieter route" means a part of the railway infrastructure with a minimum length of 20 km on which the average number of daily operated freight trains during the night-time is higher than 12.

In 2019, as part of the CEF Transport call for proposals, Ermewa obtained another subsidy from the European Union to mitigate the retrofit costs; railcars fitted with cast iron brake blocks are retrofitted by LL composite brake blocks.

At the end of 2019, Ermewa retrofitted over 10,000 railcars.

Those changes have a major impact on our business activity and it is important for us to anticipate the change and implement measures early enough to secure the existing business but also to develop it.

CONTAINERS

- On March, Eurotainer attended a training session in Beijing for the publication and promotion of JT/T 617 2018 "Regulation concerning road transportation of dangerous goods" which came into force from December 1, 2018. The competent authority of JT/T 617 is the Ministry of Transport of the People's Republic of China (MOT), and MOT assigned China Classification Society (CCS) to organize training for introducing background and detailed requirements of JT/T 617.
- Eurotainer received the first orders for tanks related to the updated regulations (UN-IMDG 39-18 for which compliance was optional from 1 January 2019 and mandatory from January 1, 2020) for the transportation of self-polymerizing substances. The new regulations have set requirements for temperature controls of such products and are a direct response to the fire on board the MSC Flaminia in 2012 that killed three crew members and caused the crew to abandon ship in the Atlantic Ocean. The product is DVB (Divinylbenzene). The new equipment specification includes refrigeration systems to prevent such reactions in the future, in compliance with the new regulations for this type of product. Tanks are expected to be delivered to the customer in first quarter 2020.
- Each year, the US Office sends a member to the US Dangerous Goods Advisory Council annual meeting where different safety and regulatory compliance professionals gather to work with regulators to discuss current regulations, current events that affect transportation of dangerous goods, and to discuss how the future can be improved. The 2019 meeting revealed the expected timeline for the UN Model Regulations to include new chapters with regards to FRP (Composite) tanks to be the 22nd revision of the regulation to be released in January 2021, entering into force in January 2023 (Presently at revision 21). This information was presented by the USDOT head of the FRP tank working group at the UNECE Committee.

WORKSHOPS

Regulatory monitoring

The workshops BU took out a subscription to the "Vigiliste" tool in order to have all the required standards available (ISO, EN, NF, DIN, BSI...) but also to be alerted in case of updates, cancellations or new standards.

PART VI INVESTMENTS AND ACQUISITIONS



External growth is a goal for Ermewa Group and 2019 was a successful year.

RAILCARS

Investments

Safety is our priority and is first and foremost the responsibility of one and all. The investments made are aimed at fulfilling our commitments in terms of 'Safety++'. Ermewa actively participates in reducing and preventing the risks of accidents, in close partnership with our customers and partners. The renewal of our fleet of chlorine wagons, based on our feedback (to avoid risk of tank perforation, risk of derailment and improve the durability and resistance of the tank) and innovative telematics solutions, is a perfect example of this.

Ermewa has also invested heavily in renewing its fleet of gas wagons to comply with the requirements of the RID Regulation. Our R&D department has worked in order to offer our customers a wagon with a length and tare weight optimized for better performance and a design that is fully compliant with our highest safety requirements.

Acquisitions

Growing intermodal fleet: We follow our strategy to reinforce our presence in the intermodal business and illustrate our willingness to strengthen our position in this growing segment. In addition to the acquisition of existing fleets of more than 750 railcars in 2018-2019 (60, 80 and 90ft containers railcars), we will invest additionally in more than 200 brand-new 80ft container railcars in 2020.

Balancing our portfolio: the purchase of 120+ existing railcars for the transport of coils in Eastern Europe supported our strategy and helped us to consolidate our position as leader in the steel industry in Europe.

CONTAINERS

Investments

The first units of a large batch of 60 MEGC (Multiple-Element Gas Container) assets came on lease and operational for moving toxic gases from India to the USA. In accomplishing this task, the units had to have US Special Permits and special authorization from the Indian authority.

Acquisitions

The Group consolidated its tank containers leasing position in acquiring Raffles Lease and its 14,000+ tank containers. With this transaction, Ermewa Group confirmed its ambition to grow in this segment and to remain a major effective player in tank container leasing.

Already present on this market through its very active subsidiary, Eurotainer, Ermewa Group had also completed the purchase in 2018 of Taylor Minster Leasing (TML), a specialized tank container leasing company. With this new acquisition, Ermewa Group is now at the forefront of a worldwide fleet of more than 60,000 tank containers.

WORKSHOPS

Investments

In 2019 Inveho UAB (North of France) increased by 30% the covered surface area of the workshop thanks to a 1,250m² addition in order to enable employees to work in better conditions

Inveho has also recently acquired multiple sets of latest-generation automated hydraulic lifting columns in the context of the development of Mobile Maintenance. A total of 18 sets of 4 columns are distributed over all the division's sites. They can be moved as required to any location in the workshop or site.

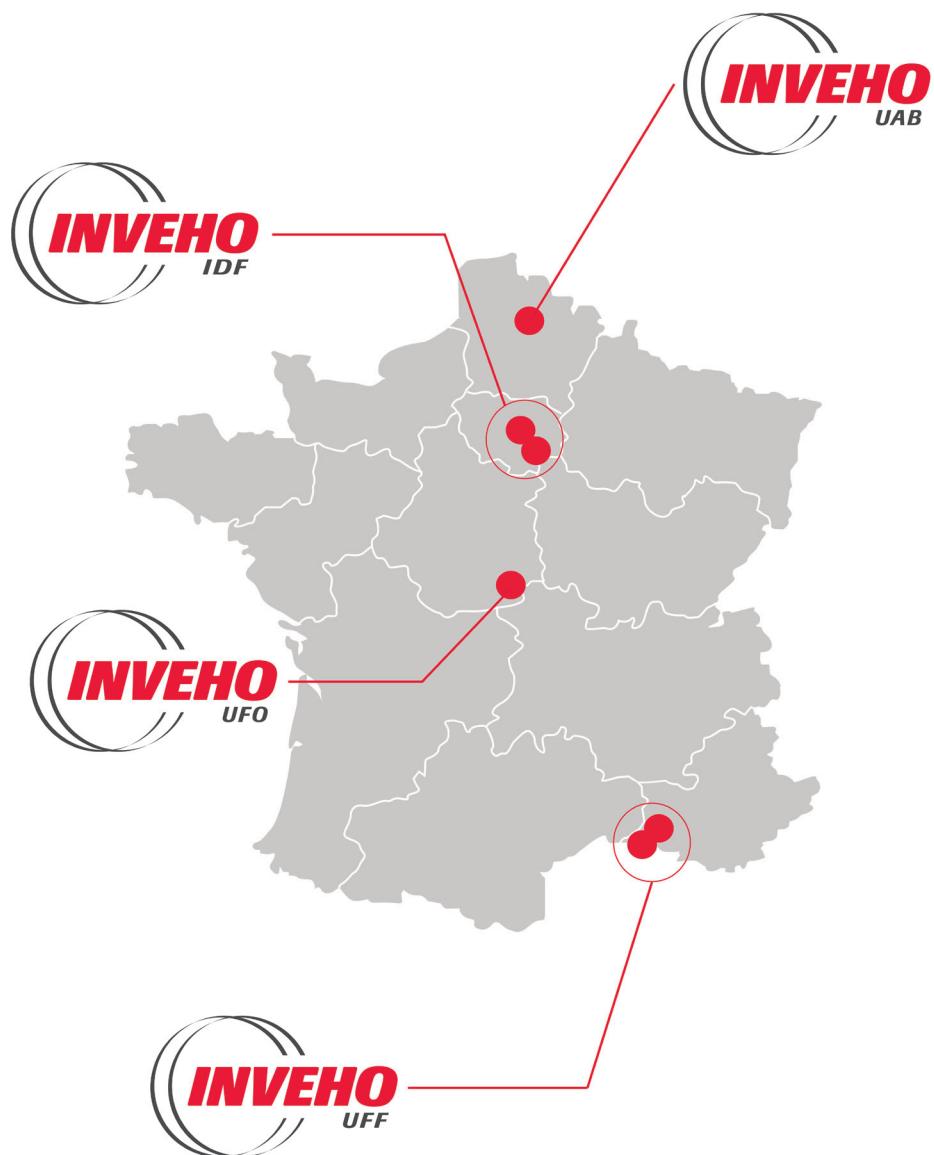
Inveho buys between 500 and 650 air reservoirs per year (80% for new construction and 20% for maintenance). The lead times for the supply of these reservoirs have a heavy impact on the availability of wagons; it was therefore decided to manufacture these tanks in-house at the Inveho UAB site using a robotic welding installation.

Acquisitions

In order to make the workshop activity more efficient, while maintaining and developing the capacity to intervene in mobile, preventive and curative maintenance, it was decided to reposition the USV teams to the Inveho UIP site in Créteil, and to rename the workshop Inveho IDF.

PART VI INVESTMENTS AND ACQUISITIONS

Thus, the transfer of the USV team to the Créteil site was initiated at the end of 2019, and a new organization of the Créteil workshop has therefore been implemented in order to better meet customer expectations. Logistics operations are maintained in Villeneuve-le-Roi with a dedicated team.





PART VII CERTIFICATIONS

RAILCARS

No new certification occurred in 2019.

Monitoring of ISO 9001:2015 and ECM.

Renewal of the MASE (Manuel d'Amélioration Sécurité des Entreprises) certification for SGW.



CONTAINERS

Eurotainer Dusseldorf and Rotterdam office ISO 9001:2015 certification renewed in mid-2019

WORKSHOPS

Workshops were renewed for the following certifications:

- ISO 9001:2015
 - VPI (maintenance standard)
 - ECM (maintenance delivery function)
 - EN15085 (Welding of railway vehicles and components)

PART VIII LOOKING FORWARD



Our mission is to keep placing safety and sustainable growth at the core of our business.

Ermewa Group will keep on pooling resources and technologies, and investing for its customers to protect their interests, and ensuring them optimal performance and safety.

The E-learning training was successfully deployed in 2019 and will be developed and supported to strengthen our know-how and skills for the benefit of our business and our operational activities.

R&D investments will grow and will be part of the fleet renewal strategy for future years.

Special thanks to the Safety Management System Members, Quality Manager Europe (Railcars) and Marketing Department for their contribution.

APPENDIX ACRONYMS

CEO:	Chief Executive Officer
SQE:	Safety Quality Environment
EPSF:	Etablissement Public de Sécurité Ferroviaire
NSA:	National Safety Authority
EMM:	Ermewa Maintenance Manual
ERP:	Enterprise Resource Planning
BU:	Business Unit
RID:	Regulations concerning the International Carriage of Dangerous Goods by Rail
SMS:	Safety Management System
ECM:	Entity in Charge of Maintenance
JNS:	Joint Network Secretariat
EUAR:	European Union Agency for Railways
LPG:	Liquid Petroleum Gas
ESTACA:	Ecole Supérieure des Techniques Aéronautiques et de Construction Automobile
REX:	Return on operated Experience
ADS:	Amsted Digital Solutions
SCV:	Supply Chain Visibility
CSR:	Corporate Social Responsibility
EBA:	Eisenbahn Bundesamt
APOM:	Authorization for Placing on the Market
NOI TSI:	Noise Technical Specification Interoperability
WAG TSI:	Wagon Technical Specification Interoperability
ISO:	International Organization for Standardization
EN:	European Standards / NF: French Standards
DIN:	German Standards / BSL: British Standards
TML:	Taylor Minster Leasing
RID:	Regulation concerning the international carriage of dangerous goods by Rail

