

MAGAZINE 2016 SAF-HOLLAND

Moving ahead



PROFILE

6 Continents

9,000 Spare Parts and Service Stations

Our reliable network of roughly 9,000 spare parts and service stations ensures the rapid supply of spare parts to our end customers worldwide.

The merger of European-based SAF and North American-based Holland in 2006 created SAF-HOLLAND with operations spanning over six continents.

EUR 1,042.0 million

With sales of EUR 1,042.0 million in 2016, we are among the world's leading manufacturers of chassis-related modules and components for trailers, trucks, buses and recreational vehicles.

19 Production Locations

The majority of our production plants are traditionally located in North America and Europe.

3,259 Employees

Over 3,000 employees make SAF-HOLLAND one of the largest suppliers to the commercial vehicle industry today.

SAF-HOLLAND is the largest independent, listed supplier for commercial vehicles in Europe. We develop solutions for the global truck, trailer and bus industries. Our innovative components and systems are our contribution to our customers' global success. In the original equipment business, we supply the major truck, trailer and bus manufacturers. Our extensive, global spare parts and service network ensures customers receive their spare parts quickly. We are one of the few suppliers in our industry that has a broad international footprint in almost all markets worldwide.

“Whether through our organic growth with new products and services, the development of new locations in important future markets or targeted anti-cyclical acquisitions: 2016 was a year in which we laid the groundwork to set and achieve our ‘Strategy 2020’ growth targets. The new organization, aligned with our customers’ local needs, allows us to profit even more from the growing worldwide demand for transportation. Our aim is to keep moving forward in what we do best without losing our focus.”

Detlef Borghardt, Chief Executive Officer (CEO)



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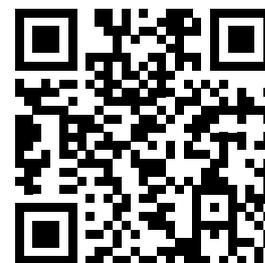
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GLOBALLY

30 Architects of the Future

SAF-HOLLAND employees are driving the trend in digitization forward.

Our annual report is now also available online at ar2016.corporate.safholland.com





Ready for Takeoff

Mr Borghardt, where are you off to now?

Right after our meeting, I will be flying to our branch office in Beijing. As you know, we intend to boost our growth, not only within, but also outside of our core markets of Europe and North America. As CEO, this means consistently being available locally to talk to our customers and business partners. Despite today's modern means of communication, face-to-face meetings are still the best.

Growth stands at the center of your "Strategy 2020." What progress did you make in 2016?

In 2016, we were able to maintain our level of sales amid a fairly difficult market environment. We were one of the few companies in our industry to achieve this. Even the North American market, which is a very important for us, declined by more than 30% for trucks and almost 10% for trailers. We were, however, able to largely compensate for this slump with the very favorable performance in Europe. The development in a number of significant markets such as Brazil, China and Russia was also very modest. Nevertheless, in 2016, we were still able to lay the groundwork for our "Strategy 2020" in some regions – which is an important step in seizing attractive opportunities and generating future growth.

What specifically was achieved in 2016?

This question can only be answered for each region individually, since our growth target is based on a regionally differentiated strategy. Let's start with Europe. Here we added capacity by building a new plant in Düzce, Turkey. Now, not only do we have some added flexibility to respond to order peaks in Europe, but we can now better serve emerging regional markets in Turkey, the Middle East and North Africa, where we have won some major customers. The effects of this will already become

Profitable growth with a focus on new regions – this is the most important goal of SAF-HOLLAND's "Strategy 2020". Before catching a flight at the Frankfurt Airport, CEO Detlef Borghardt explains where the Company stands in the implementation of its strategy and the steps to come.

evident in 2017 in the form of additional sales. The North American market, on the other hand, will remain challenging. We are responding to this by expanding our structural growth drivers to raise our value added per vehicle, or what we refer to as "content per vehicle."

What you mean by higher "content per vehicle"?

More and more we are delivering not only the axle but the complete overall system consisting mainly of axles, hubs and suspension system that include the brakes. Until now, most of our U.S. customers have been purchasing these components separately. However, with a system approach, customers reap significant benefits not only when it comes to assembly but also in terms of service. And, at the same time, we increase our value added per vehicle by up to 50 percent. The order from U.S. Xpress won in 2016 was a landmark order for the entire market. We will equip 1,800 trailers with an integrated axle and suspension system that includes our latest generation of disc brakes. The transition to this exceptionally high-performance brake technology is now also getting underway in the United States. In Europe today, already more than 80 percent of our axle systems are equipped with disc brakes.



“Now the regions have a voice, which means we can make better decisions when it comes to our strategy in the growth markets.”

Detlef Borghardt, Chief Executive Officer (CEO)

What would restrictions on free trade mean for SAF-HOLLAND’s success, particularly in the United States?

Restrictions in free trade would result in a drop in the share of sea transportation. If domestic production were then to rise, we would see an increase in demand for road transportation which would be positive for our business. In fact, SAF-HOLLAND itself wouldn’t feel much of an effect from trade restrictions because we have local production in our sales regions and purchase most of our key supply components in those same markets. In the United States, for example, SAF-HOLLAND is often perceived as a U.S. company. Essentially, I am not too concerned.

I understand, you can achieve quite a lot through organic growth in the core markets of Europe and the United States, but what about the rest of the world? Would acquisitions be necessary?

Well, first let’s agree that we have significantly expanded our product portfolio in several regions outside of our core markets and are now able to offer the right products in these markets. A prerequisite for doing this was to strengthen our local development teams. For example, we established our own test center in China. I am very confident that with this approach we will be able to achieve our organic growth target of EUR 1.25 billion in sales by the year 2020.

But let’s continue talking about acquisitions. SAF-HOLLAND had to accept defeat this past year with the Haldex offer.

Not at all. We prepared very well for a potential takeover and calculated precisely what we would pay for it. Our offer of 94.42 Swedish krona per Haldex share would have been a fair price. As a bidding war started to emerge, we knew right away that we were not going to join in and could better use our shareholders’ funds elsewhere and maintain financial discipline. We emerged from the situation with our heads held high. At the same time, we gained some valuable experience, polished our internal processes and now have something of a blueprint for future large M&A activities.

What is your M & A strategy?

We do not see M&A as a standalone strategy in itself. We have a strategy that can be accelerated through acquisitions when an opportunity presents itself. We use a matrix that defines the eight product lines and eight regions where we intend to actively grow. This results in a total of 64 areas. We also consider acquisitions in those areas where organic growth alone is not strong enough or fast enough for what we want to achieve. But we are not in a hurry. Acquisitions need to pay off.

Does this describe the motive behind the KLL acquisition in Brazil?

Precisely. We took an anticyclical approach when we did this acquisition. The suspension specialist KLL completes our portfolio in the South American market where the trailer business is in the process of transitioning from mechanical to air suspensions. KLL also enhances our product range in the truck and bus segments. KLL had the right products, but after years of market weakness in Brazil, it needed a strong partner. This is when we came into play and ultimately scored.

To facilitate this global expansion, the Company's organization changed in early 2016 from being organized by product area to being organized by region. Has this change been beneficial?

Overall I am very satisfied. Now the regions have a voice, which means we can make better decisions when it comes to our strategy in the growth markets. For example, I travel a lot in Asia but it still makes a difference whether you are coming from abroad or have years of local hands-on experience. Our new structure has made us significantly faster, and we have been able to increase the amount and intensity of our customer contacts. At the same time our business units have overcome their silo mentality and are profiting tremendously from common structures for purchasing and engineering.

What have you learned personally since becoming responsible for the Asia-Pacific region and, with that, the important Chinese market?

I have learned that, in China, in addition to the volume segment which primarily competes on price, there is a growing premium segment for vehicle manufacturers and truckload carriers alike. Their demands are similar to ours: procuring the lightest, safest and best system. Our product range should naturally mirror the segmentation of the market. And this is where we see our strengths.

How do you keep the Company together as a global unit when it has a regional structure?

As part of our regional organization, we have purposely globalized specific functions such as purchasing. This yields synergies, some of which can already be seen in our 2016 results. Other functions such as production and quality assurance are also now operating globally. Our customer base, however, consists of hundreds of companies, most of which are regionally active. Our strength is our diversity. In engineering, this means developing numerous customer-specific applications so that we are also able to meet very individual customer requests. In that sense, we will be expanding our modular system in the future even more.

At the IAA Commercial Vehicles fair, the theme of digitization was at the top of the agenda. Is this just temporary hype?

Certainly not. Digitization will progress rapidly in the transportation sector and reach a point where there is no turning back. What this implies for SAF-HOLLAND is first that we will need to equip all of our mechanical components with linked up sensors. One example is the fifth wheel assistant for the U.S. market, which gives the driver an optoelectronic signal when the trailer is improperly coupled. In the future, digitization will mean much more. For example, when we can predict in advance when components will wear out, we will be able to optimally manage our entire aftermarket network and offer valuable added benefits from our data. And we will make a key contribution to lowering the truckload carriers' total cost of ownership – which is really the ultimate success factor in the transportation industry.

Mr Borghardt, thank you for your time – and have a good flight!



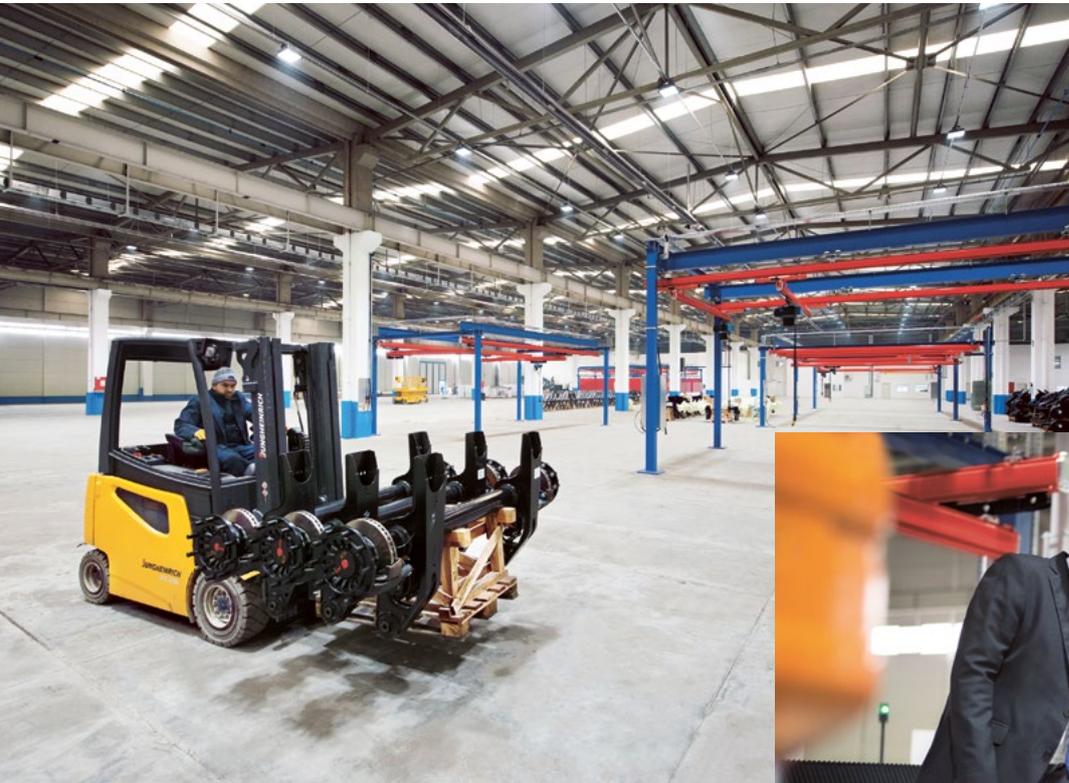
CEO Detlef Borghardt meeting customers:
Face-to-face meetings count

The Orient



The Turkish city of Düzce, between Ankara and Istanbul, is the location of SAF-HOLLAND's latest plant built in 2016. The construction of this plant represents another step on the way to achieving the "Strategy 2020" goal of taking advantage of the transportation sector's growth in emerging markets. Despite the currently challenging situation and more pronounced market fluctuations in some regional markets of the Middle East, there are some interesting opportunities waiting in this highly populated region that are worth preparing for.





Production to start at the new plant after just one year



Turkey's Managing Director Bilal Azizoglu
We don't have any problem finding qualified employees



DÜZCE-INSTANBUL
Turkey
Production location

Hazelnut plantations, as far as the eye can see. Three out of four of the world's hazelnuts are harvested in Turkey. Ten kilometers from the Black Sea, the region around the city of Düzce is one of the preferred areas for agriculture with its very hot summers and icy cold winters. Yet, it's not the climate that brought Bilal Azizoglu here but the strategic location halfway between Ankara and Istanbul. Under his direction, SAF-HOLLAND's first plant in Turkey, directly at the traffic artery, was established in 2016 and will start production in

the first quarter of 2017. A total of 35,000 axle systems are expected to leave this plant every year by 2018.

SAF-HOLLAND's investment in this new plant is also an investment in a growing market. Since the arrival of the new millennium, Turkey has become one of the most vital production centers for Europe's commercial vehicle industry. First came the bus and coach manufacturers, whose final assembly was very labor intensive due to the different configurations. In the meantime, a growing number of heavy-duty commercial vehicles and their trailers are being manufactured in Turkey. In 2015, which was a record year, a total of 275,000 commercial vehicles and roughly 25,000 trailers left production plants. "The Turkish government has invested massively in infrastructure in the past ten years," offered Azizoglu

“Turkey is Europe’s bridge to the Middle East.”

Bilal Azizoglu, Managing Director of SAF-HOLLAND in Turkey

explaining his customers’ investment decisions. “From communication networks to highways, the entire country went through a wave of modernization.” Still, the favorable conditions, which include the direct support of the ministry of economy, were just one aspect. “Turkey is Europe’s bridge to the Middle East,” says Azizoglu. This statement is especially true for vehicle original equipment manufacturers who deliver from Turkey to the Arab peninsula – a region that experienced a construction boom until 2015 that boosted the demand for commercial vehicles. The Iranian market may have a greater role to play in the future. “Of course growth in Iran also depends on future political developments,” says Azizoglu. “The potential for recovery in this country, with more than 75 million inhabitants, is enormous.” This outlook is also reflected in the World Bank’s forecast for economic growth in Iran of 4.6% in 2017. The Iranian government’s five-year plan even shows a targeted annual growth rate of 8%. Turkey is also an international hub for the transportation industry. “The food produced in Turkey, for example, is distributed throughout the entire region,” explained Azizoglu. “And, of course, it needs to be transported – preferably by land.” Currently, however, trade is suffering because the war in Syria is blocking one

of the most important routes. “It’s only a matter of time before this problem is solved,” says Azizoglu optimistically.

SAF-HOLLAND, on the other hand, wasted no time constructing its new plant, which only took about a year to complete. “We Turks are quick and pragmatic,” says Azizoglu, who himself was born in Schleswig-Holstein, Germany, and later studied in Ankara. It wasn’t only a question of mentality, but also the smooth cooperation between the headquarters in Bessenbach and the colleagues locally that made it possible to work quickly. “We were able to simply ‘copy and paste’ the whole production concept used in Bessenbach,” explained Arne Jörn, Chief Operating Officer responsible for SAF-HOLLAND’s global production system. The machines and equipment for Düzce were newly purchased and configured for production use in Germany. Experienced workers from Bessenbach, some who were even originally from Turkey, came to Düzce to help set up the new plant and training for the new staff. Some of this new staff will also spend time at the Spessart location. Jörn and Azizoglu shared the project management

Customer discussion

Turkey has grown into a center for the commercial vehicle industry

and every week discussed all of the pending issues in detail, for example, the renovation of the rented, three-year-old plant hall, which at one point had failed to meet all of SAF-HOLLAND's requirements. One of the biggest challenges was a process step integrated into the axle production process in Germany: the cathodic dip-paint coating, which is the basis for anti-corrosion protection. Because the necessary equipment ties up a relatively high amount of capital, it was not feasible to set up a duplicate process in Düzce. After conducting a search together, Jörn and Azizoglu finally found a suitable provider in the region.

Finding employees, on the other hand, was actually not that difficult. "In Turkey, the commercial vehicle industry is seen as a growing, future-oriented industry," explained Azizoglu. SAF-HOLLAND, as a multi-national company, is particularly attractive for workers." Just one week after publishing the first online job advertisements, there were already 150 applicants. Although not all were qualified, after

a strict interview process an initial team was quickly assembled. Experienced people from the automotive industry were hired for key positions in areas such as production and quality management.

Word had spread among the Turkish customer base that SAF-HOLLAND was now producing locally. "The initial reaction was 'When can you start delivering?'" described Azizoglu. Shorter transportation distances greatly increase delivery flexibility, which can be an important advantage, especially in the trailer business. Whereas, previously, two to three weeks would pass between the receipt of an order in Bessenbach and delivery in Turkey, now the time is projected to fall to just two to three days. "We also were able to increase our overall capacity for the European market and thereby reduce the delivery times to our European customers," added Jörn. The service business with Turkish customers is also benefiting from the new location, which has a developed area totaling roughly 1.3 hectares and has significantly more room than the previous location in Istanbul. The Aftermarket warehouse has already moved to the new location. "This is now another area where we

"We were able to simply 'copy and paste' the whole production concept used in Bessenbach."

Arne Jörn, Chief Operating Officer of SAF-HOLLAND





The new plant:

35,000 axles

per year is the future target for the plant in Düzce.

2-3 days

delivery times help increase the flexibility for our regional customers.



Faster delivery

Portions of the aftermarket business will also be located in Düzce

can respond more flexibly to our customer requests," promises Azizoglu.

Like the days of incredible treasures that made the Ottoman empire into a world trade center, this is how Turkey intends to be the bridge for the exchange of goods between Europe and the Middle East today. Be it gold, machine parts or simply hazelnuts. What these goods have in common is that they must be transported – on axles, of course. Good prerequisites for SAF-HOLLAND's new plant.

AN EXTRA BOOST SAF TRAK

Only

200kg

of added weight is contributed by the drive system. The weight of the axle drive is negligible because it is based on SAF-HOLLAND's existing suspension system technology.

Expanding market share in axle and suspension systems for trailers is a key component of "Strategy 2020". This is why SAF-HOLLAND is concentrating on growth through innovation and new solutions for special customer requirements in its core market of Europe. In 2016, the axle specialist developed its first hydraulically driven trailer axle. These axles help tippers, which often find themselves on rough terrain, gain significant traction, which can otherwise only be achieved with the help of tractors with more than one driven axle line.

A compact hydraulic motor in the inner wheel provides an extra boost – in this case for the rearmost trailer axle.



Energy from the tractor for the trailer

For added thrust, SAF TRAK uses the hydraulic power available, which is being held ready for use for the tipping cylinder.

Approx.

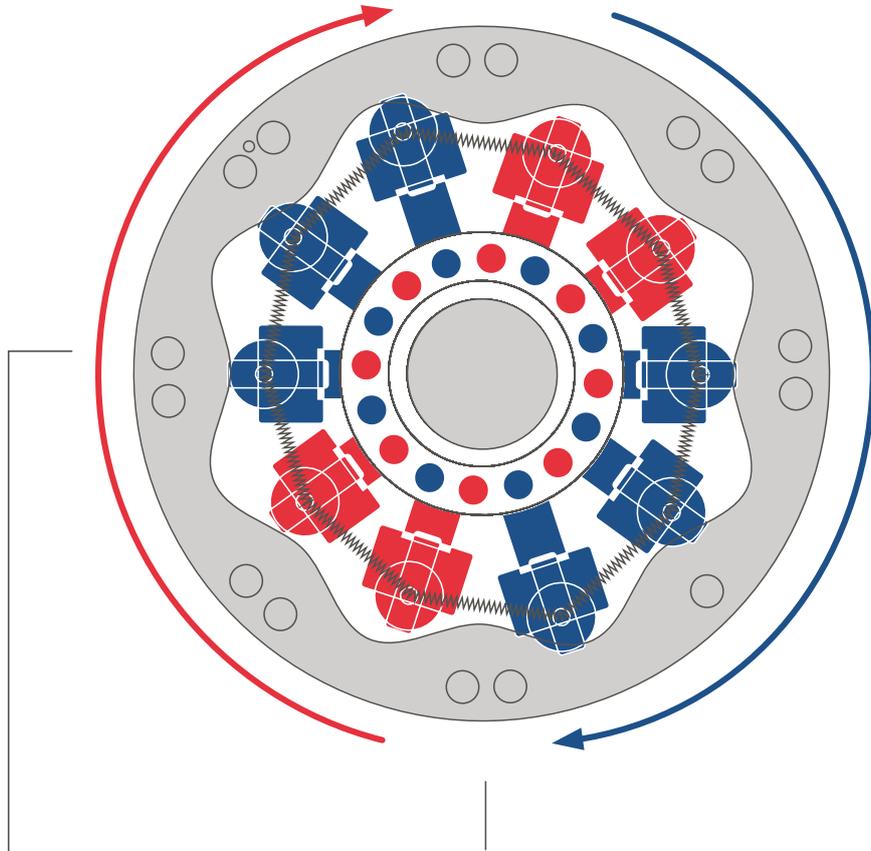
10 km/h

is the level currently set to trigger the pull-away assist function. The drive then switches off, and a freewheel function minimizes the drag losses of the hydraulic motors. SAF-HOLLAND's developers are currently working on optimizing the threshold speed which is also depending on the system components.



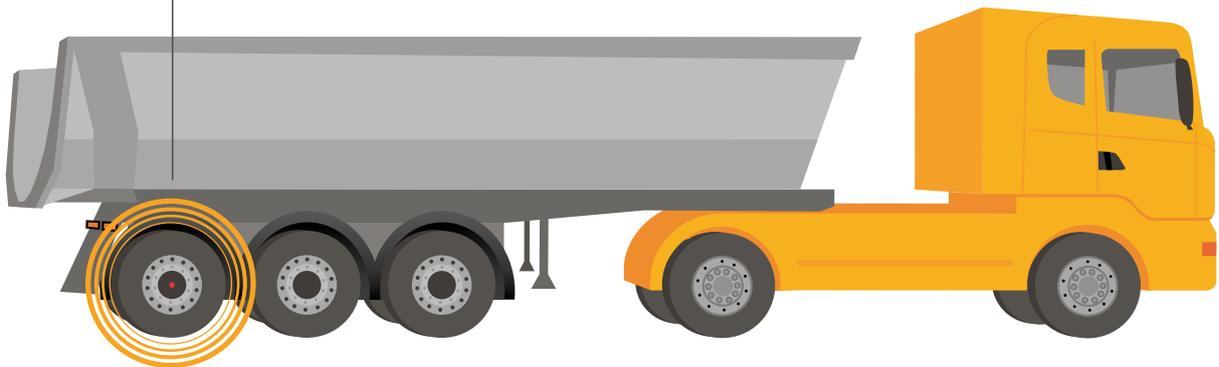
The driver can turn the pull-away assist on and off using a simple switch in the cab.





This is how a hydraulic motor works:

In a radial piston motor, the hydraulic pressure drives the pistons, which act outwardly on a specially curved track. This is how the pistons make the motor rotate.



The hydraulic motors are fitted on the inside of the wheels, usually on the rearmost axle of the trailer. If the tipper is fully loaded, then this axle must endure a particularly high amount of weight. This allows the trailer driver to push the entire vehicle in order to make it up a slope or to free the vehicle from muddy terrain.

“When developing the new trailer drive, our engineers were able to build on the experience already gained from hydraulically driven pendulum axles for vocational vehicles.”

Dr Stefan Wallmeier, Vice President Engineering at SAF-HOLLAND

A gravel pit in the Spessart hills. It's autumn. A drizzle falls over the countryside softening the soil. Several engineers watch a tipper drive slightly uphill. The drive axle of the tractor starts to slip. The vehicle slows down and eventually gets stuck. “Usually at this point, the driver would ask for help, possibly opting to be towed by a wheel loader,” said Dr Stefan Wallmeier, Vice President of Engineering at SAF-HOLLAND. But in this case, Dr Wallmeier and his team have equipped the tipper with the SAF TRAK. At the push of a button, the driver can activate the wheels rotating on the trailer's rear axle and boost the vehicle almost effortlessly out of the mud.

The crucial extra boost is ensured by two hydraulic radial piston motors located in the wheel hub of the powered trailer axle. The drive system uses the same hydraulic pressure already provided by the tractor to raise the cart body. A valve block disperses the hydraulic fluid as required either for tipping or powering.

If the driver chooses the trailer's drive, then hydraulic fluid is directed to a second valve block. This valve block synchronizes the direction of the axle drive with the tractor's engine control. It can also power the right or the left wheel of the trailer axle separately if required – known as the differential lock function. This function is important if one of the wheels is on a slippery terrain and not able to transmit torque.

Hydraulic motors are well-suited for providing a boost in difficult terrain because of their very high torque. SAF-HOLLAND's axle drive supplies up to 14,000 Newton meters of additional torque depending on the system pressure. If this force is no longer needed at a speed of roughly 10 km/h after the start-up, SAF TRAK will then proceed to activate a free-wheeling function in which a spring pulls the pistons back in the hydraulic motor to minimize drag losses.

“The core element of the hydraulic trailer drive is our proven INTRA CD suspension system equipped with disc brake technology,” explains Wallmeier. “The unit only needs to be extended at the ends of the axle by adding another stub axle, hub unit prepared to receive the motor, a sealing system and controls.” This is why the hydraulic drive, which won the “Trailer Innovation 2017” award at last year's IAA, can also be retrofitted onto existing trailers and combined with numerous tractors. Another plausible use for these drives, aside from their use in tippers, is their use in other vehicles that provide a high level of hydraulic power – for example, agricultural machinery, forestry vehicles and vehicles with moving floor.





XPRESS BRAKING

“More value added per vehicle” is one of the stated objectives of SAF-HOLLAND in order to increase organic sales as part of “Strategy 2020” – particularly when it comes to the North American trailer market. The beginning switch from drum to disc brake technology offers a substantial opportunity to increase the value added per vehicle. SAF-HOLLAND received its first major order in 2016: a total of 1,800 U.S. Xpress trailers were equipped with complete axle and suspension systems including disc brakes, representing a landmark order for the market.



CHATTANOOGA
Tennessee
U.S. Xpress headquarters

In Chattanooga, Tennessee, we meet with Gerry Mead, Senior Vice President of Maintenance at U.S. Xpress. He shares with us his views about innovation, specifically disc brake technology that has generated more and more interest in the North American trailer market. During our visit at U.S. Xpress headquarters, Mead is not going to miss the chance to personally showcase the new trailer equipped with SAF-HOLLAND's new P89 disc brakes. He has been in the business for over 27 years and oversees the fleet of logistics company U.S. Xpress in Chattanooga – a fleet consisting of over 15,000 trailers and almost 7,000 tractors on the move across North America. In March 2016, Mead was honored as Truck Fleet Innovator by the renowned magazine Heavy Duty Trucking. This award was for efficiency and the use of solar technology. Now Mead, together with SAF-HOLLAND, is onto the next innovation breakthrough: disc brakes for U.S. Xpress' fleet of trailers. Though air disc brakes are the standard in Europe, it's still not a large percentage of the market in the United States. Disc brake technology introduced to North America in the early 1970's, suffered from substandard materials and braking equipment

that was the wrong size. As a result, the industry stayed with drum brakes which, despite their moderate performance and difficult maintenance, has continued to be the predominant brake technology used in North America.

But not at U.S. Xpress: Mead has 1,800 trailers equipped with disc brakes and each and every brake came from SAF-HOLLAND. U.S. Xpress is now no longer ordering drum brakes for its trailers, and its entire fleet is expected to be converted within the next six years. That's good news in terms of traffic safety:



Established trust
Gerry Mead, U.S. Xpress (right) and Pat McNamara of SAF-HOLLAND in conversation



“At U.S. Xpress, we are proud of our willingness to try new things.”

Gerry Mead, Senior Vice President Maintenance, U.S. Xpress

The fleet

U.S. Xpress has over 15,000 trailers on the road



Gerry Mead
is certain that disc brakes are the right choice

Mike Colaccino
Senior National Account Manager
SAF-HOLLAND Inc.



Pat McNamara
Director National Accounts
SAF-HOLLAND Inc.

“The time has come, and we are well positioned to further the conversations with the key fleets in North America with regards to the P89 disc brake.”

Pat McNamara, Director National Accounts at SAF-HOLLAND Inc.

Working behind the scenes
Disc brakes provide more safety



“The braking distance with disc brakes is significantly shorter than with drum brakes, which is an invaluable advantage,” said Mead adding: “The advantages are there from day one, of which safety plays a key factor in choosing air disc brakes. The benefits of this technology need to be seen from a holistic perspective.”

The fact that the breakthrough for trailer disc brakes is now imminent can be traced to the long-term cost advantage for the fleet operators. The purchase price of disc brakes is higher than that of drum brakes. Yet, disc brakes feature a higher degree of efficiency and durability and require less time for maintenance – time that can be used with the vehicles to earn more money.

“Safety played a key factor in choosing air disc brakes.”

Gerry Mead, Senior Vice President Maintenance, U.S. Xpress

Still, it took a very North American approach to persuade Mead even though a European disc brake for trailer axles has been on the US market in a slightly modified form for a long time. The breakthrough at U.S. Xpress can be attributed to the entry cost of the P89 disc brake that is perfectly tailored to customers’ needs. The P89 is part of a complete single source axle and suspension system that SAF-HOLLAND offers and a key reason for Mead’s choice because it gives him a single point of contact and access to SAF-HOLLAND’s close-knit service network. “The right package for the new technology was simply not available until we sat down together in Nashville a year ago. We talked through the project and then sealed it with a handshake,” Mead remembers. SAF-HOLLAND Director of National Accounts, Pat McNamara expects that a number of fleet operators will follow the example of U.S. Xpress. “The time has come”, says McNamara adding, “We are well positioned and excited to further the conversations with the key fleets in North America with regards to the P89 disc brake.

The US market is different and, in many ways, harder – the romanticism of the trucker lifestyle still plays a larger role here than in many countries. When Mead and McNamara talk about future challenges it becomes obvious that the industry won’t run out of ideas. “Telematics solutions for trailers will be the next big trend,” says Mead. And he wants to be there to help shape it: “At U.S. Xpress, we are proud of our willingness to try new things.”

SAF’s P89 disc brake systems are on the rise

10 pounds

less weight per axle is possible with the special lightweight design.

30%

longer maintenance intervals due to optimized pads.

5-year

comprehensive warranty which puts the P89 at the forefront of the competition.



Revving up for Recovery

Through its “Strategy 2020”, SAF-HOLLAND is targeting a combination of organic and external growth. Joint ventures, cooperations and acquisitions will be some of the measures taken to boost growth in new regions and with new products. By acquiring KLL, SAF-HOLLAND took an anticyclical approach to its strategy in South America. Although this region, with more than 400 million inhabitants, is struggling with a crisis, it will still be one of the fastest-growing transportation markets for the next several years.



Rogério Ramos (left) and Juarez Keiserman
Working together on the integration



RIO GRANDE DO SUL
Brazil
KLL Equipamentos para
Transporte Ltda

Anyone flying into São Paulo can notice immediately that there is something amiss in Brazil's transportation sector: the parking lots of the airport-based freight forwarders are filled with trucks lined up closely together. On weekdays, these parking lots are usually empty because all of the vehicles are in use. Even people leaving São Paulo for the port city of Santos can see signs of crisis everywhere. Although São Paulo's Anchieta freeway runs through Brazil's highest industrialized region, many companies are closed with For Sale signs posted on their factory gates. Automakers such as Volkswagen and Mercedes have factory yards filled with unsold vehicles. Even traffic jams are rare. Brazil is in a severe economic crisis. The country's gross domestic product has declined by 7% since 2014. The transportation sector is also feeling the recession. While in 2011, a total of 207,400 trucks and buses were sold in Brazil, five years later the manufacturers association Anfavea estimates only 67,000 have been sold – a drop of 67%.



Air suspensions and axles
Complete systems now also supplied out of Brazil

Anticipating the upswing
Long-term demand is set to rise



“The market for air suspensions is still at a very early stage in Brazil, but the trend is irreversible.”

Juarez Keiserman, Managing Director of KLL

One might conclude that the land of the Amazon may have lost its lure for investors in the transportation sector. Not true in the case of SAF-HOLLAND who has acquired a 57.5% stake in the Brazilian company KLL Equipamentos para Transporte Ltda in 2016. The manufacturer of suspension systems for trucks, buses and trailers is based in Alvorada, Rio Grande do Sul – right next to the headquarters of Brazil’s large freight forwarders and several truck suppliers. Rogério Ramos, Managing Director of SAF-HOLLAND’s Brazilian subsidiary, believes this crisis offers a perfect opportunity to strengthen the Group’s market position in South America: “We are deliberately making an anti-cyclical investment in the largest transportation market in South America boasting more than 200 million inhabitants.”

By acquiring KLL, SAF-HOLLAND has gained much broader access to the Brazilian market than it could have achieved alone. “With KLL, we can enter into business with truck manufacturers directly,” explains Ramos. KLL’s long track record in the industry means it can deliver straight to leading bus and truck manufacturers. Both suppliers are planning a joint expansion, especially in the market for air suspension systems for trucks and buses. “The market for air suspensions in Brazil is still at a very early stage,” noted Juarez Keiserman, founder of KLL 28 years ago, and now a top executive of the combined entity of KLL and SAF-HOLLAND Group. Trucks with squeaky



A brand with tradition

KLL has been operating in Brazil for 28 years

Production in Alvorada
Capacity for future growth



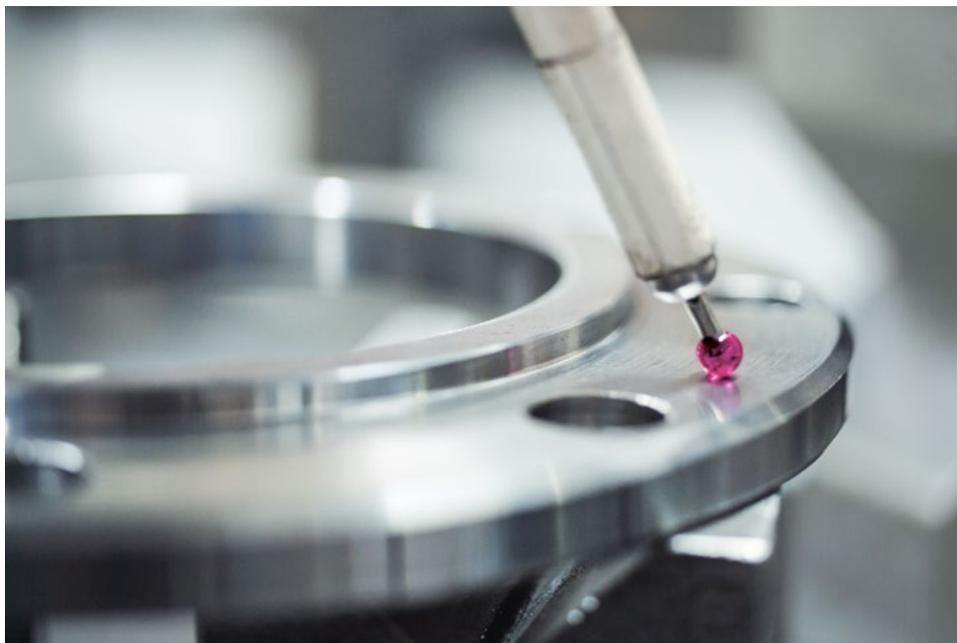
flat springs are still commonplace on Brazil's highways. Only around 16% of Brazil's trucks are currently equipped with air suspensions. In the European Union, this figure is 95%. Still, Keiserman is optimistic: "The trend is not reversible, even in Brazil."

Keiserman and Ramos are currently examining how SAF-HOLLAND and KLL in Brazil can integrate their production and raise efficiency. SAF-HOLLAND has had its own production plant in Brazil for the past ten years. At the location in Jaguariúna, 130 kilometers from São Paulo, the Group has mainly been producing axles. KLL is significantly larger: The production plant in Southern Brazil is located on a campus the size of seven soccer fields. The location had 340 employees until 2013. Now there are just 200. KLL has also been caught up in the crisis. The production of suspensions for trailer axles has dropped almost two-thirds. "At the same time, we even managed to increase our market share," says Keiserman.

Now, with the companies' combined product portfolio, Ramos hopes that market share will increase significantly faster with the next economic recovery. "We can offer our entire U.S. and European product range in Brazil", says Ramos. "We can now tailor our product range to meet the demands of the local market." Because the conditions in Brazil are different from those in Europe: The roads are far worse. Large parts of the Brazilian highway network consist of two-lane roads full of potholes. Many routes are on unpaved roads. Because of the country's size, quality service in repair shops is ensured only in coastal urban areas. "We have to 'tropicalize' the products

"Truck operators will start investing in their fleets again at the first hint of stabilization."

Rogério Ramos, Managing Director of SAF-HOLLAND do Brasil

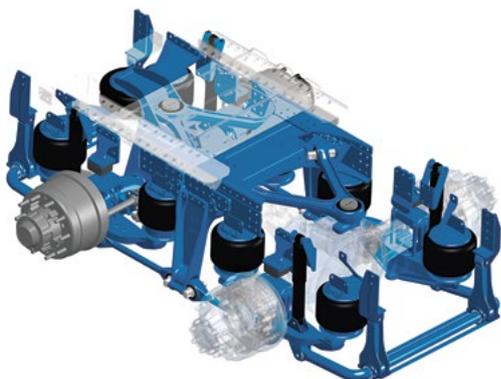


Precision counts

Automated measurement of component quality



A standard at KLL: robust air suspensions



- For heavy- and medium-duty vehicles
- Adaptable for 4x2, 6x4 and 6x2 drives

from Europe,” says Keiserman. This opens up additional market potential for SAF-HOLLAND in Brazil given the Group’s plans to develop products in Brazil, which could also be sold in other emerging markets with similar requirements and infrastructure.

After years of crisis, the Brazilian market may also see a recovery soon thanks to falling interest rates. In 2017, the economy is expected to grow again slightly. The crisis has led to a perceptible increase in the average age of the truck fleet. Ramos predicts: “Truck operators will start investing in their fleets again at the first hint of stabilization.” Experts from the Anfavea vehicle association expect growth in the commercial vehicle market to sharply outpace that of the economy as a whole. The industry is looking for 10% growth in the commercial vehicle market in 2017. “We are optimistic,” said one dealer from a large commercial vehicle brand. “For the first time in a long time, we are receiving customer inquiries.”

Architects of the Future

The digital networking of commercial vehicles and complete logistics chains has revolutionized the transportation industry. SAF-HOLLAND's ability to utilize this trend and achieve its growth targets as part of its "Strategy 2020" can be illustrated by three of the Company's current projects. Behind each project is a team of dedicated employees, who are already working on making future ideas a reality.



Alex Schöpf
 Team Leader Backoffice Sales
 Fleets DACH Region
 Bessenbach, Germany

The App Connection

In the eyes of Alex Schöpf, an app is never complete. With his specially designed 'SAF-HOLLAND Connect' app, he offers fleet operators, repair shops and spare parts dealers real added value. All of whom can use the app to register for repair workshops and spare parts sales training, retrieve spare parts catalogs and maintenance instructions, and receive the latest news feeds. His goal is to further minimize the downtime for trucks and trailers through digitization and faster processes. Since all service processes are linked together, Schöpf's app pays special attention to inter-linking the individual functions.

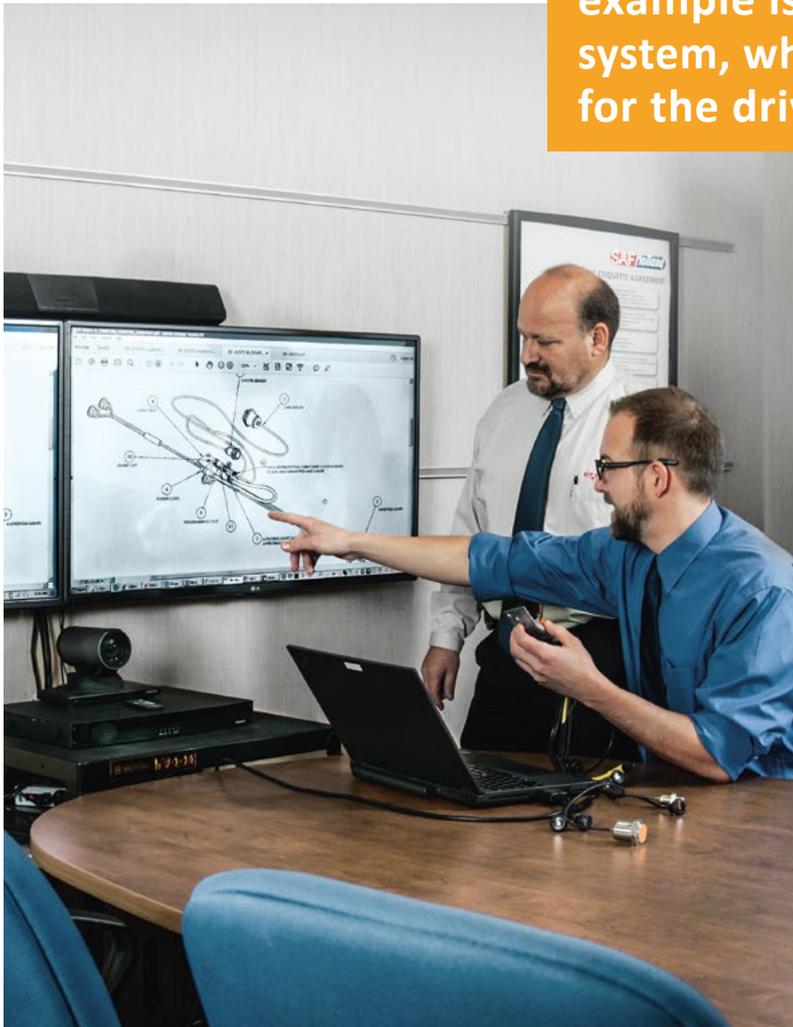
"I see *moving ahead* as designing the digitally networked future. The continued development of the 'SAF-HOLLAND Connect' app is an important element in making sure we profit from the changing world of digitization."

SERVICE

TECHNICAL INNOVATION

“We see *moving ahead* as driving forward tomorrow’s technologies. With new ideas and new digital approaches, we strive to exceed our customer expectations. One example is the Holland ELI-te™ system, which makes coupling safer for the driver.”

Andrew Wallner and Rich Sibley
Senior Project Engineer & Senior Project Manager
Holland (MI), USA



Mechanisms with sensors = Putting the driver in full control

If a trailer is not correctly coupled to a tractor, it greatly endangers the other drivers on the road. This is the reason drivers are required to check the fifth-wheel coupling to make sure the trailer is attached properly before driving off. Andrew Wallner and Rich Sibley intermeshed mechanical and opto-electronic sensors to an effective digital solution which now supports the driver with the new ELI-te™ (Electronic Lock Indicator technology enhanced). When the trailer is coupled safely, the sensor system gives a signal, and four white LED lamps light up, making it much easier to do a visual inspection; when not, red lights flash a warning. The two developers placed a high value on simple installation, which is why they deliberately avoided putting the display in the cab and opted instead to place it near the fifth-wheel coupling for an on-site check – a precaution that is already legally required in the United States.

Thomas Holy
Project Manager Operations/Industrial Engineering
Bessenbach, Germany



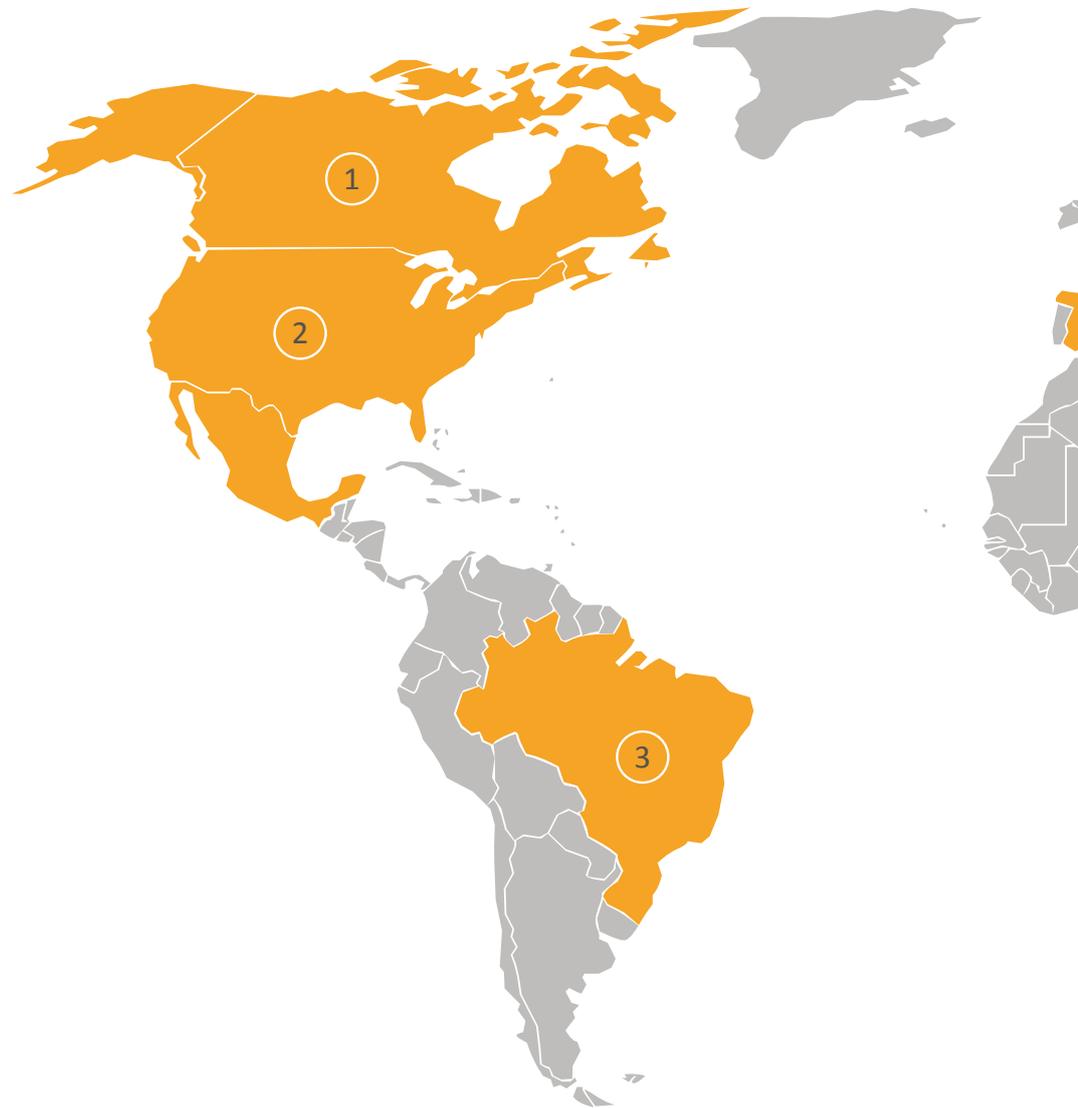
PRODUCTION

“To me, *moving ahead* means moving the Company forward competitively and thereby making a contribution to the future. To achieve this, we have optimized the availability of materials in the axle system assembly process, streamlined and digitized this process and in doing so we have noticeably raised the productivity.”

Equipped for the future: Heavy axles assembled easily

There were just ten days to completely dismantle the old assembly lines and set up an all new line based on “lean” principles. When looking back, this is what Thomas Holy believes was the biggest challenge in redesigning the axle system assembly line and the process optimization at Plant 03 in Bessenbach. For this foreman and quality specialist with a Six Sigma black belt, it was the structured preparation and intense team work that made the project a success. The result has been much more efficient processes and cost savings leading to a step up in the location’s competitiveness. Production data are now transmitted directly to Radio Frequency Identification (RFID) tags and attached to the axle digitally as it moves its way through assembly. There is a permanent exchange of data among the IT systems ensuring that all the important information is available at all times on the assembly line.

IMPRINT



PUBLISHED BY

SAF-HOLLAND S.A.
68–70 Boulevard de la Pétrusse
L–2320 Luxembourg
Luxembourg

EDITOR-IN-CHIEF

Stephan Haas, SAF-HOLLAND GmbH
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CONCEPT AND DESIGN

3st kommunikation GmbH

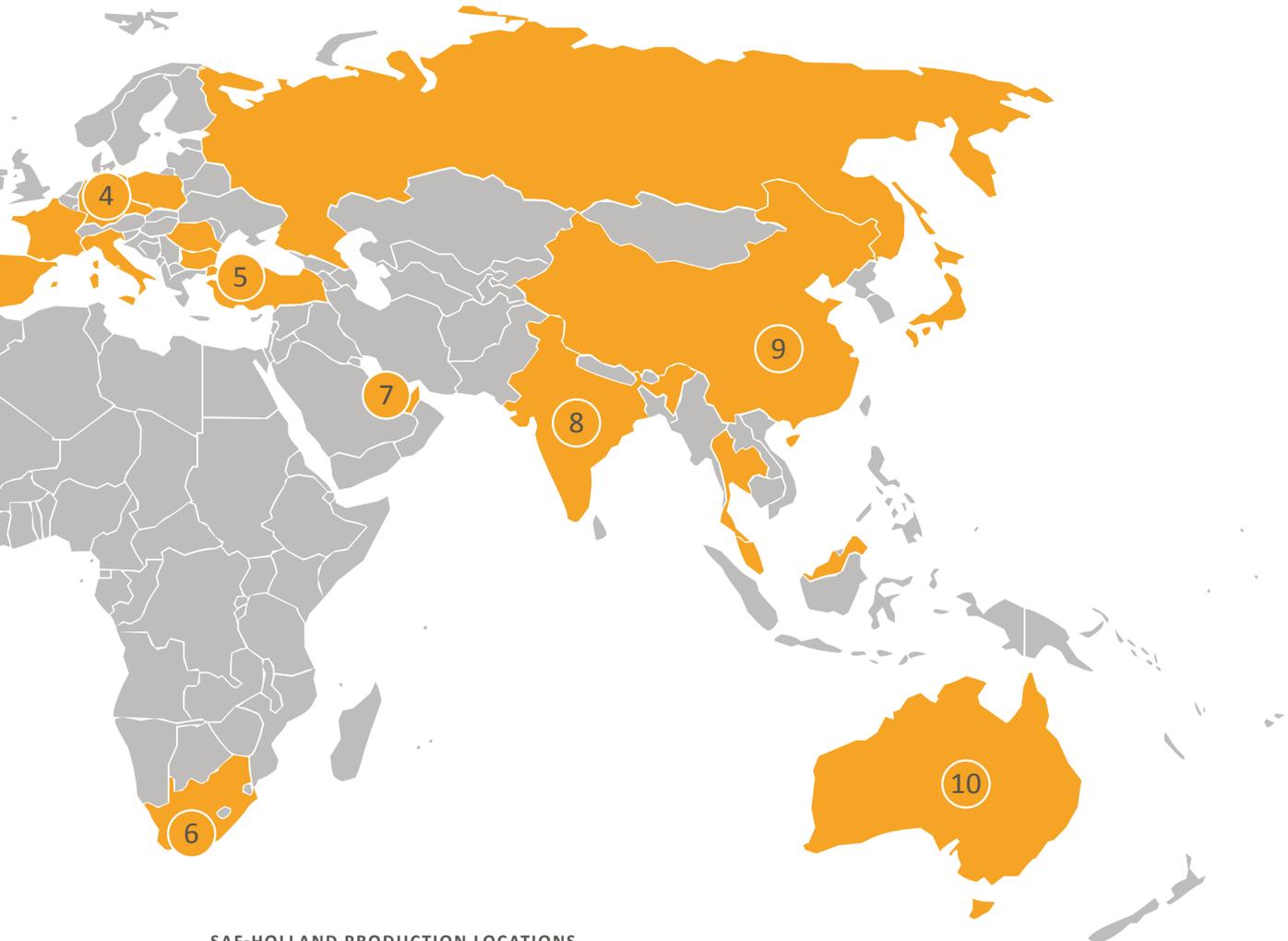
CONTENT AND EDITORIAL

Redaktionsbüro delta eta

IMAGES

Bernd Bodtländer Fotografie
Studio Dino Eisele

SAF-HOLLAND PRODUCTION LOCATIONS & SUBSIDIARIES



SAF-HOLLAND PRODUCTION LOCATIONS

- | | | | | |
|--|--|------------------------------------|-----------------------------|------------------------|
| 1 CANADA
Woodstock | 3 BRAZIL
Alvorada
Jaguariúna | 5 TURKEY
Düzce-Istanbul | 8 INDIA
Chennai | 10 AUSTRALIA
Melton |
| 2 USA
Dumas
Holland
Muskegon
Warrenton North
Warrenton South
Wylie | 4 GERMANY
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Singen | 6 SOUTH AFRICA
Johannesburg | 9 CHINA
Baotou
Xiamen | |
| | | 7 UNITED ARAB
EMIRATES
Dubai | | |

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