Globe

THE GLOBAL MAGAZINE
FOR GF EMPLOYEES

ISSUE 3·2017

The fly fisher

Tim Savarese, GF Piping Systems
in Easton, USA

Our goals: A cultural change for increased safety
Our abilities: COOL-FIT 2.0 for Cambridge University
Our markets: Solutions for the aerospace industry

+GF+

HELLO!

Carlos Infante
Apodaca, Mexico, June 9, 2017, 9:00 PM CET

Today we have been celebrating the birthday of our colleague Diego Alfaro (center). As you can see, we decorated his workplace for him, as it is a tradition in our office.

Carlos Infante is Inside Sales Manager at GF Piping Systems in Apodaca, Mexico.

Carmine Bencivenga
Feuerthalen, Switzerland, June 9, 2017, 9:00 PM CET

At this time I was watching a soccer World Cup qualifying match with my children Marica and Lorenzo: Faroe Islands against Switzerland. Hopp Schwiiz!

Carmine Bencivenga is Product Manager Utility at GF Piping Systems in Schaffhausen, Switzerland.

JOIN IN AND WIN!

What are you doing **on September 27, 2017 at 1:15 PM CET?**
Send your snapshot with "Hello!" as subject heading and a short description to: **globe@georgfischer.com**
All entries will be included in our competition on page 40.

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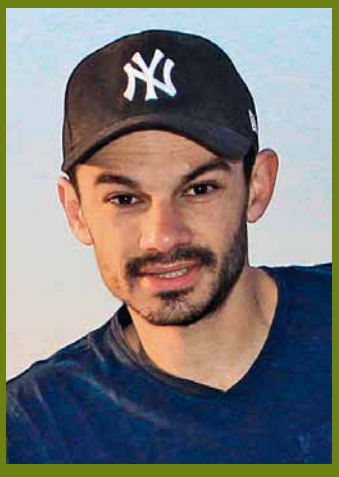

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Sections

EDITORIAL

Precision and creativity – by no means an unequal pair

Beat Römer
Head of Corporate Communications

Dear colleagues,

Precision, punctuality – there are several clichés concerning Switzerland. Even though most clichés are really just prejudices, they always contain a grain of truth, too. One thing is certain: when it comes to precision, Switzerland – where the heart of GF lies – is difficult to rival.

We export this spirit in our precisely manufactured, high-quality products, too. And our cover story demonstrates how this spirit is embraced by our employees. Tim Savarese from GF Piping Systems in Easton, USA, ensures smooth, precisely functioning processes in his work at the production. But Tim also has another quality that is equally as characteristic of the GF spirit: he is creative. A passionate angler, he ties elaborate fly fishing bait in his free time and attracts a large fan community on social media.

Our colleagues at GF Piping Systems in the UK also demonstrated enormous creativity. Even though COOL-FIT 2.0 had not yet been officially launched, they were able to secure the contract to fit The Triangle, a new building of the renowned University of Cambridge. This innovative piping system is the very latest GF success story – manufactured with precision and marketed with creativity.

I hope you have an informative and entertaining read.
Do you have any feedback? We look forward to receiving your input at **globe@georgfischer.com**

IN BRIEF

Happy birthday, Chinaust!

The Chinaust Group is celebrating its 30th anniversary this year. What started in July 1987 as a modest joint venture between the Chinese Lingyun Group and an Australian company grew into an impressive corporation counting 24 entities. Since the full stake of the Australian partner was transferred to GF in 2000, the 50/50 joint venture has enjoyed continuous growth. Today, Chinaust is one of the most successful companies within the Swiss industrial corporation. The range of products is broad, comprising plastic parts for the automotive industry as well as piping systems for water and gas distribution. ■

On a plant tour in Kunshan selected customers gained insights into the expertise of GF Automotive.

Successful customer day in China

The GF Automotive sites in Suzhou and Kunshan opened their gates to selected customers from May 17 to 19, 2017. Over 140 guests, mostly representatives from the global automotive business and leading OEMs, followed the invitation to gain insights into the expertise of the division. In addition to several lectures from lightweight construction experts, plant tours through both production facilities were on the agenda. A varied side program ensured a great atmosphere. All in all, the "GF Customer Open Day 2017" was a tremendous success. ■

Who has the fastest pod?

GF Automotive is supporting the Swissloop team of ETH Zurich in building a transport capsule for the Hyperloop concept developed by Tesla founder Elon Musk. The aim is to create a new high-speed transportation system capable of carrying people and goods in capsules at speeds of up to 1 200 km/h through a vacuum tube. GF Automotive is the main sponsor of the Swissloop team in the global university competition, also providing support by developing and manufacturing a lightweight aluminum component for the chassis of the transport capsule. Which pod comes out on top will be revealed in California, USA, at the end of August 2017. More information on the outcome of the Hyperloop Competition II is available at: **www.facebook.com/georgfischercorporation** ■

The topic of safety interpreted in a special way: GF employees presenting a theater play for their colleagues.

Safe and healthy

Occupational safety took center stage at Georg Fischer Hakan Plastik in Turkey in May 2017. During the "Health and Security Week" all employees of the production sites in Çerkezköy and Şanlıurfa participated in intensive workshops on health, safety and environmental matters. A special highlight was an entertaining and informative theater play which illustrated how important occupational safety is in everyday work. Around 730 employees work at Georg Fischer Hakan Plastik in Turkey, of which 80 percent are in production. ■

Presentation of first Design Thinking projects

The divisions presented first Design Thinking projects to the Executive Committee at Klostergut Paradies, the training center of GF in Schaffhausen.

Design Thinking, the corporate-wide initiative to drive innovation excellence, is entering its next stage: On June 28, 2017 the Design Thinking teams of the divisions presented the current status and first prototypes of selected projects. In addition, the division heads explained which role Design Thinking plays for Strategy 2020, and Yves Serra gave an outlook on the further implementation of the approach at GF. ■

For more pictures and videos on the news in brief, see: **globe.georgfischer.com**

PRODUCT
IN FIGURES

18

meters. This is the measuring signal range of GF Piping Systems' 2290 radar level transmitter. The compact device can measure the fill level of a tank that is approximately as high as a six-floor residential building. This is possible thanks to the use of contactless radar technology. The device produces billions of microwave impulses per second which are reflected by the process medium inside the tank, for example water or a chemical. Measuring the distance allows the tank's fill level to be determined precisely – unaffected by disruptive factors such as vapors, gases, foam or temperature fluctuations.

Measuring principle: **non-contact radar technology**
Area of application: **chemical process industry, water purification**
Measuring range in tank/container: **0.2 m – 18 m**
Degree of accuracy: **+/– 3 mm**
Medium temperature: **–30°C to +100°C**

IN BRIEF

At the opening ceremony of the new Education Center, Carlos Vasto, General Manager at GF Linamar LLC, cut the ribbon.

GF Linamar supports college

On 24 May 2017, the Blue Ridge Community College in North Carolina, USA, celebrated the opening of its new Southeastern Advanced Molding Technology Education Center (SAMTEC). GF Linamar, whose plant is currently being built near the college, donated most of the facilities or provided them at a low price. In addition, two instructors of the new center received training on equipment set-up, maintenance, and operation at GF sites in Austria and Switzerland. In the future, SAMTEC will provide training to GF Linamar employees as well as molding and die cast training for companies locally and across the nation. The new GF Linamar high-pressure die casting plant will produce lightweight components for the American automotive market as of fall 2017. ■

For more pictures and videos on the news in brief, see:
globe.georgfischer.com

Seewis on the run

18 runners from GF Piping Systems in Seewis, Switzerland, took part in the B2Run company run in June 2017. The six-kilometer route took participants through the town of St. Gallen in eastern Switzerland. The fastest GF runner was Martin Caluori with a time of 24:56 minutes. In the overall ranking, this put him in 47th place out of 3 141 runners in total. After the B2Run was first held in 2015, thousands of sports enthusiasts today battle it out in eight different towns and cities all over Switzerland. ■

18 GF employees lined up for the start at the company run in eastern Switzerland – the fastest of them was Martin Caluori.

HOW DID IT GO?
13 YEARS AT GF

Xie Hongquan
Structure Parts Manager
at GF Automotive
in Suzhou, China

13 years ago … Xie Hongquan joined the Technical Service department at GF Automotive in Suzhou, China. At first he was responsible for tooling equipment and maintenance in the foundry and even helped to set up a new production line. He still remembers how impressed he was with the technologies and processes around lightweight production. “It was a learning experience from day one,” Xie Hongquan comments. Today he is a Structure Parts Manager in the foundry that was added to the Suzhou site in 2015. Currently he is working together with customers and the Austrian site in Altenmarkt so that the new production lines for structure parts can start operation on time.

And in the upcoming years? The GF Automotive light metal casting plant in Suzhou is well prepared to continue its growth trend in line with the expanding Chinese automobile market. “It’s great to know that I can contribute to this development with our innovative lightweight components,” says Xie Hongquan. But life isn’t only about work. As a member of the site’s basketball team, he likes to get to know his colleagues better on the court. In particular, he always looks forward to matches against the GF Automotive colleagues from nearby Kunshan.

PROJECT
TRAINEE COMPANY

The Managing Director: Leonora Kastrati is a trainee business assistant in her third year and took over the top management position; she was also in charge of finance, controlling and logistics.

The creative minds: The two designers Tim Adam (left, 2nd training year) and Tobias Vogt (4th training year) were responsible for research and development as well as for product design.

The sales consultants: Sales and marketing were the responsibilities of Aberna Sivanantham (left, 1st training year) and Salome Speck (2nd training year), who are both trainees business assistant.

The manufacturers: Manufacturing and assembling the products was the job of production mechanic Neuran Kulenthiran (left, 3rd training year) along with polymechanics Nico Salini (back, 2nd training year) and Martin Stankovic (3rd training year).

The controller: As production coordinator, Vincent Nguyen (right), a polymechanic in his 4th training year, was also responsible for quality assurance.

The young entrepreneurs

At GF Machining Solutions in Luterbach, Switzerland, young talents get a special opportunity to learn how things work in the business world: with their own company and their own products.

With only 20 years of age, Leonora Kastrati is already Managing Director. For about a year now she has been running a company called Young Design Production. "It's an enormous challenge for me," says Kastrati – after all, she is actually just finishing her training as a business assistant with Step-Tec AG in Luterbach, Switzerland. The subsidiary of GF Machining Solutions specializes in the production of engine spindles for milling machines.

Leonora Kastrati works at Young Design Production along with eight other trainees, all of whom are part of a special Step-Tec training project. The aim is for the youngsters to establish their own fictitious company in which they develop, manufacture and market a product within one year. In this way they will learn about the complex processes in a company.

First steps

The original idea came from Step-Tec Managing Director Fabrice Monti di Sopra: "I wanted to encourage trainees to develop an entrepreneurial mindset." He provided them with a budget of CHF 5 000 for the project. It started in August 2016. Every Tuesday morning the team met for an hour to work on the project and take their first steps together in the business world – assigning responsibilities, assembling teams and making one particularly crucial decision: what are we going to produce?

Several sessions later the young entrepreneurs opted for two products: a flashlight and a pen holder. From then on, everything moved very quickly. An initial design was drawn up and materials were purchased, then prototype construction started in March 2017. The results are impressive: a lightweight LED flashlight made of anodized aluminum featuring an innovative rotary switch, and a pen holder with a strikingly unique design. As it is based on the spindles produced by Step-Tec there is a direct link to the company.

At first, employees at the Luterbach site were invited to give feedback on the products. Their advice was fed directly into the revision process and the trainees were able to start production at the end of May 2017. At the same time, marketing and sales operations started and a sales market was quickly identified: "The two products go very well with our company and they make great promotional gifts for our customers," explains Fabrice Monti di Sopra. Specially designed flyers advertise the products outside the company. These are on display at local schools and companies. The products can also be ordered directly via e-mail to **YDP@georgfischer.com**.

Two-fold benefit

It is not yet known whether Leonora Kastrati and her colleagues have managed to generate a profit from their starting budget of CHF 5 000. But the trainees certainly benefited enormously from the project. "It's made our training at Step-Tec even more hands-on – and we learned a lot," says Leonora Kastrati. Not least because the project has given them insights into other departments, above and beyond the specialist areas in which they are training. The company has benefited, too. "This kind of project makes us more attractive to young talents – after all, we're competing for them with a lot of other companies," says Fabrice Monti di Sopra. As far as he is concerned, the trainee company will be an integral part of the Step-Tec training program in the future: "We definitely want to continue with this project next year, though with new ideas and products, of course." ■

THE TASK

Set up a company within a period of one year. Develop, produce and market a product.

THE AIM

Gain business experience by getting involved in a hands-on project.

THE TEAM

Nine trainees at GF Machining Solutions in Luterbach, Switzerland.

THE RESOURCES

CHF 5 000 of seed capital was available to the young entrepreneurs.

THE RESULT

Spindle-shaped pen holder and innovative flashlight.

For video and more pictures, see:
globe.georgfischer.com

COVER
FLY FISHER
TIM SAVARESE

Name: **Tim Savarese**
Position: **Tooling Technician**
Company: **GF Harvel (GF Piping Systems)**
Site: **Easton, USA**
At GF since: **2007**
Remarkable: **Over 12 000 Instagram followers**

The art of fly fishing

When he was 17, Tim Savarese started teaching himself fly fishing. Some years later, he discovered his passion for fly tying, too. Today the Tooling Technician attracts a strong fan base with his tiny art pieces.

FRESHWATER FISHING – FLY OR SPIN?

Freshwater anglers can generally be divided into two categories: fly fishermen and spin fishermen. With fly fishing the goal is to fool a fish relying on imitation, not scent. Fly fishing is commonly done on moving water, although many also try their luck on still water, such as lakes and ponds. Spin fishing is done in both still bodies of water and moving water. Here, bait and lures are attached to the line and casted into the water using the weight of the lure to create distance. Fly fishers, on the other hand, use the weight of the line itself to create distance, not the fly. How to decide which style to chose? It's all personal preference. Those near a lake and looking to catch a lot of fish are generally better served with spin fishing. If you're near a stream or river, fly fishing is the better bet.

Dusk and dawn, when fish are on the lookout for their dinner, is the best time for fly fishing. Tim Savarese is one of the lone people standing in one of the many rivers and streams that crisscross his native Pennsylvania, trying his luck. A light breeze on his face, the long rays of the setting sun bounce off the water. He casts the line, the fly whizzes by his head and dances over the water. The repetitive movements and the fresh air put him into a sort of trance, a time to shed the stress of the day and to simply be.

The Tooling Technician started fly fishing 12 years ago, at the age of 17. "It was the end of high school and I thought it might be a cool thing to try out," he recalls. Previously he had fished in nearby lakes and streams with his father, using bait and lures and dropping the line in the water – spin fishing, as it is called. But Tim Savarese decided it was time to move to the king's discipline of fishing: fly fishing.

His relationship with GF started around the same time, initially as a part-time employee with Harvel Plastics Inc. while he was working on a degree in education. In 2011, GF Piping Systems acquired Harvel, which today goes under the name of GF Harvel. The company provides the North American market with industrial piping systems for the water treatment and chemical processing industries.

Upon graduation, though, prospects for teachers were rather poor. Luckily, a full-time position had become available in the shipping department at GF Harvel – and Tim Savarese was hired. He knew from his experience that the atmosphere was good at GF Piping Systems.

Practice makes perfect

Becoming the adept fly fisher he is today took a lot of work with hours and hours of practice. He had to learn how to grip the pole, keep his balance while standing in moving water, and master a smooth cast. And most importantly, he had to learn how to set the hook just right when a trout bites. "It has a lot to do with deception. It's about mimicking the moment when a fly delicately lands on the water's surface," explains Tim Savarese. Fly fishing, he says, is a very organic and natural way to fish, and it also gives the trout a fair chance. "It's better for the environment, because no bait with artificial ingredients is being introduced to the waterways."

When that long-awaited moment comes when a fish bites and Tim Savarese reels it in, he whips out his phone, takes a quick picture, and then sets the fish back into the water. "I catch and release – I don't eat the trout and I prefer a hook without barbs to leave the fish as undamaged as possible," he says. "It's my way of enjoying nature and protecting the fish I interact with." Around five years into fly fishing, another important aspect of the sport turned into a passion: fly tying. A fly is a lure and hook in one that is made to catch the fish's attention and incite it to bite. "At first I was financially motivated, as flies can be quite expensive," says Tim Savarese. "But as I gained more and more experience, it turned into a passion. For me, fly tying is an art." As with fly fishing, he also is a self-taught fly tier. Trial and error are his teachers.

«It's about mimicking the moment when a fly delicately lands on the water's surface.»

New challenge

Continuous learning and perfection are also important to Tim Savarese at work – most recently in his position as a Tooling Technician, a position that was created in 2015. When he saw the job advertisement, he decided to apply: "Admittedly, I basically had no experience in tooling, but I convinced my bosses that I was able to learn concepts quickly and independently, as I have done with fly fishing and fly tying," he says. He got the job.

The area in the production hall that he is in charge of, and which he built up from scratch, is like a large cage. This is where equipment for manufacturing plastic pipes is stored, such as mandrels and cutting tools. The main driver behind creating a dedicated tooling area was to accelerate processes, prevent downtime and thereby save money. In the past, tools had to be sought out by those in production who needed them. Tim Savarese now takes care of this task ›

Five years after taking up fly fishing, Tim Savarese discovered a passion for making fly fishing bait. These elaborate items combine both bait and hook.

Tim Savarese takes between 30 seconds and 45 minutes to bind a fly, depending on the model. The stone fly (right) is his personal signature piece – and is also popular on social media, where the Tooling Technician has numerous followers.

✚ See how Tim Savarese binds flies at: **globe.georgfischer.com**

Master of tools: Tim Savarese has established the tooling area in Easton so that his colleagues don't have to waste time looking. He was inspired by airport signage systems.

For more pictures, see:
globe.georgfischer.com

› for his colleagues, getting everything ready for three shifts per day. In this respect, he serves as a link between the office areas where planning is done, and managers and employees on the shop floor.

In setting up the tooling area, he wanted to make it as easy as possible for everyone involved in the production process to find their way around. The signage in airports served as inspiration. "With good signage, you can always find the way to wherever you need to go," he explains. To constantly improve the tooling area, Tim Savarese follows the 5S principles, the workplace organization method created in Japan, as well as 4DX.

Persistence brings recognition

The persistence he has applied in improving his department is something he is familiar with from fly fishing. He began to tie stoneflies – and practiced every day for about a year and a half. "I think I became sort of obsessed," he admits. He tried different materials, and with each iteration he added new details and his own unique touches. The stonefly has become his signature piece. Normally the stoneflies are intended to look as close as possible to the real creature. But Tim Savarese also ties flies which do not resemble anything found in nature. Some of them also come with bright colors that fish are attracted to.

Tim Savarese started posting photos of his small artworks in social media and has attracted a huge fan base of fly tying enthusiasts on social media channels. He also began attending fly tying shows, and since last year has put his work on display at exhibitions such as the International Fly Tying Symposium. In addition, he has lead classes at his local Trout Unlimited group, an organization dedicated to preserving fisheries in the United States. "I like the chance to talk to people and motivate them to grow and try something new," he says.

Tim Savarese also shares his passion for fly tying in another way: by giving flies away to fellow fishers. "I have trouble putting a price tag on a fly. Depending on the complexity, it can take anywhere between 30 seconds and 45 minutes to tie one. Also, how do you put a price tag on something you love doing? For me, inspiring other people with something I've created is sufficient reward," he says.

For all the efforts Tim Savarese makes to ensure that the tooling area is as tidy and self-explanatory as possible, chaos is more the norm in the room where he ties flies at home. "I need a creative mess to make flies," he assures. In that respect, he is a true artist. ■

3x3

Wenqiang Heng
Equipment Maintenance,
GF Automotive,
Suzhou, China

Desiree Pfitzenmaier
Trainee,
GF Piping Systems,
Albershausen, Germany

Nick Peters
R&D Engineer,
GF Piping Systems,
Little Rock, USA

The hero/heroine of my childhood was …

… kung fu star Jet Li, a representative of Chinese kung fu.
Wenqiang Heng

… MY GRANDFATHER.
Desiree Pfitzenmaier

… Gene Kranz, the NASA Flight Director who saved the crew of Apollo 13.
Nick Peters

Letter or e-mail?

I prefer to communicate with WeChat, but at work I use e-mails.
Wenqiang Heng

I LIKE TO RECEIVE POSTCARDS BEST OF ALL – BUT IN EVERYDAY LIFE E-MAIL IS MORE PRACTICAL!
Desiree Pfitzenmaier

For business purpose e-mails, for friends the letter.
Nick Peters

I've worked at GF for:

THREE YEARS AND TWO MONTHS.
Wenqiang Heng

Since September 2016 as a trainee in wholesale and foreign trade.
Desiree Pfitzenmaier

One year and one month as an R&D Engineer.
Nick Peters

JOIN IN AND WIN!

And here are the new questions:
1. My favorite book right now:
2. Newspaper or online magazine?
3. My typical work clothing is …

Take part and send your answers along with a portrait photo with "3x3" in the subject line to: **globe@georgfischer.com**
All entries will be included in our competition on page 40.

Name: **Julia Willauer**
Position: **Management Assistant**
Division: **GF Automotive**
Site: **Singen, Germany**
At GF since: **2014**
Remarkable: **100 goals in the 2016/2017 season**

PORTRAIT
JULIA WILLAUER

Right on target

Julia Willauer, Management Assistant at GF Automotive in Singen, Germany, has been a keen handball player since she was six years old. She gives everything she's got to help her team to win and now plays in Germany's third national league.

Her blue and yellow shirt soaked with sweat, Julia Willauer heads for the opponents' goal amid noisy cheers from the stand. It's the last home game of the 2016/2017 season, so she is determined to put on a great performance for the fans. After a brief nod from Julia to her team mate on the inside right, the latter passes the ball high above the opposing defense. Julia jumps up, catches the ball – and lands it right in the back of the net before her feet have touched the ground again. The hall goes wild. "My first Kempa trick," says the 24-year-old, clearly proud to have managed this technically demanding move on her first attempt.

Charged up

It's moments like this that make her pursuit of the sport worthwhile – tough though it is. "Pushing myself to my own limits for the team – that's what I need," says the SV Allensbach player. A petite young woman who spends her day as a Management Assistant involved with organizational tasks, she loves outwitting opponents on the break with high-speed counterattacks. She deliberately seeks out direct duels, too – even though things can potentially get rough. Handball is very physical when it comes to fighting for the ball and scoring, so shoves and injuries are inevitable. Goals are virtually scored by the minute, and games can quickly turn around. "You're totally charged up and you fight up to the very last second," she says.

Her passion for handball is in her genes: both her parents played and she loved to watch games from the stands as a child. It was when she saw fans cheering on their teams that she made her decision: one day it was going to be her down there on the court. "It's a really incredible feeling," she says. She has played for the first team of SV Allensbach for five years now – the top women's handball club in the region. In 2012 she signed her first two-year contract – and the team went up to the second league.

Trusting your own strength

Getting there was a difficult process, however. With her talent and discipline, she quickly became one of the top players on the youth team, but at the age of 13 and 16 she twice tore a cruciate ligament when she turned her knee to quickly change the direction of play. "I had to start from scratch and learn to walk again," Julia Willauer remembers. She was desperate and even considered giving up. But she gritted her teeth: "You have to deal with injuries psychologically, too. It's not just about getting fit again: you have to trust in your own capabilities. You have to be prepared to put yourself through hard times – it requires an enormous will to endure."

Julia Willauer joined GF Automotive in Singen three years ago as a business administration student. As a Management Assistant she organizes trips and appointments, prepares presentations and analyzes and is responsible for the local employee magazine "Globe Plus". Her boss is accommodating because he knows how important her training times are to her, and she is grateful for this. She trains four evenings on weekdays, and then there's a league game at the weekend during the season. "I like my lifestyle, even though it might seem strenuous to other people," she says.

Such is her passion for handball that she even trains a youth team once a week with her cousin. Originally she just wanted to stand in as a replacement trainer but she grew so fond of the boys that she carried on. And very successfully, too: she is already considering going into training youngsters after her active days are over. "A life without handball is simply not something I can imagine," says Julia Willauer with a laugh. ■

ORIGINALLY FOR GIRLS ONLY

Berlin sports director Max Heiser would be astonished: he invented handball as a sport for girls exactly 100 years ago – as a non-contact sport. But his colleagues from the area of track and field quickly turned handball into a very physical, competitive team game, making it more attractive to men in particular. Matches were originally played on a field in the open air, before indoor handball became established in the 1970s under the influence of the Scandinavian countries. The smaller court also made the game a lot quicker and more athletic. Crowd figures from the open-air period have never been equaled, however: stadium games previously attracted as many as 100 000 spectators.

See Julia Willauer in action! Video and more pictures at **globe.georgfischer.com**

WHO INVENTED IT?
BIONIC WHEEL HUB

Bionic diet

Nature offers an abundance of light yet stable structures, serving bionics as a role model for state-of-the-art technology. Based on this principle, GF Automotive has developed a new type of truck wheel hub that combines lightness and stability.

In spite of its extremely heavy, expansive branches, a tree is able to withstand the most severe storms and bear the weight of large amounts of snow. This is of course due to its organically grown structures, which ensure that loads are distributed equally. Wherever a load weighs more heavily, additional reinforcements grow. Bionics is the name of the principle by which engineers attempt to apply this type of natural structure to modern technology.

As a bionics specialist, GF Automotive regularly seeks inspiration in nature itself. The innovative bionic wheel hub for commercial vehicles is a good example. This component connects the rim of the wheel to the vehicle axle and is subject to extreme vertical and lateral forces during driving, as well as brake forces. Consequently, it is normally produced as a solid cast iron piece. Normally. But what if a lighter structure could guarantee the same stability?

If this were possible, it would give the commercial vehicle industry and its customers an enormous advantage: the lighter the truck, the greater the potential load capacity and the lower the fuel consumption. Every kilo slimmed off overall vehicle weight saves the shipping company hard cash.

Weight-saving software

In view of this scenario, GF Automotive has developed the new truck wheel hub in spheroidal graphite iron GJS 600 as a design study. Its special gaps and outer transverse ribs make it substantially lighter. "Compared to the predecessor hub we've managed to reduce the weight by 4.8 kilograms to 33.3 kilograms. That is a saving of about 13 percent," says Dominik Mahnig, Head of Product Management & Development Chassis at GF Automotive in Schaffhausen, Switzerland.

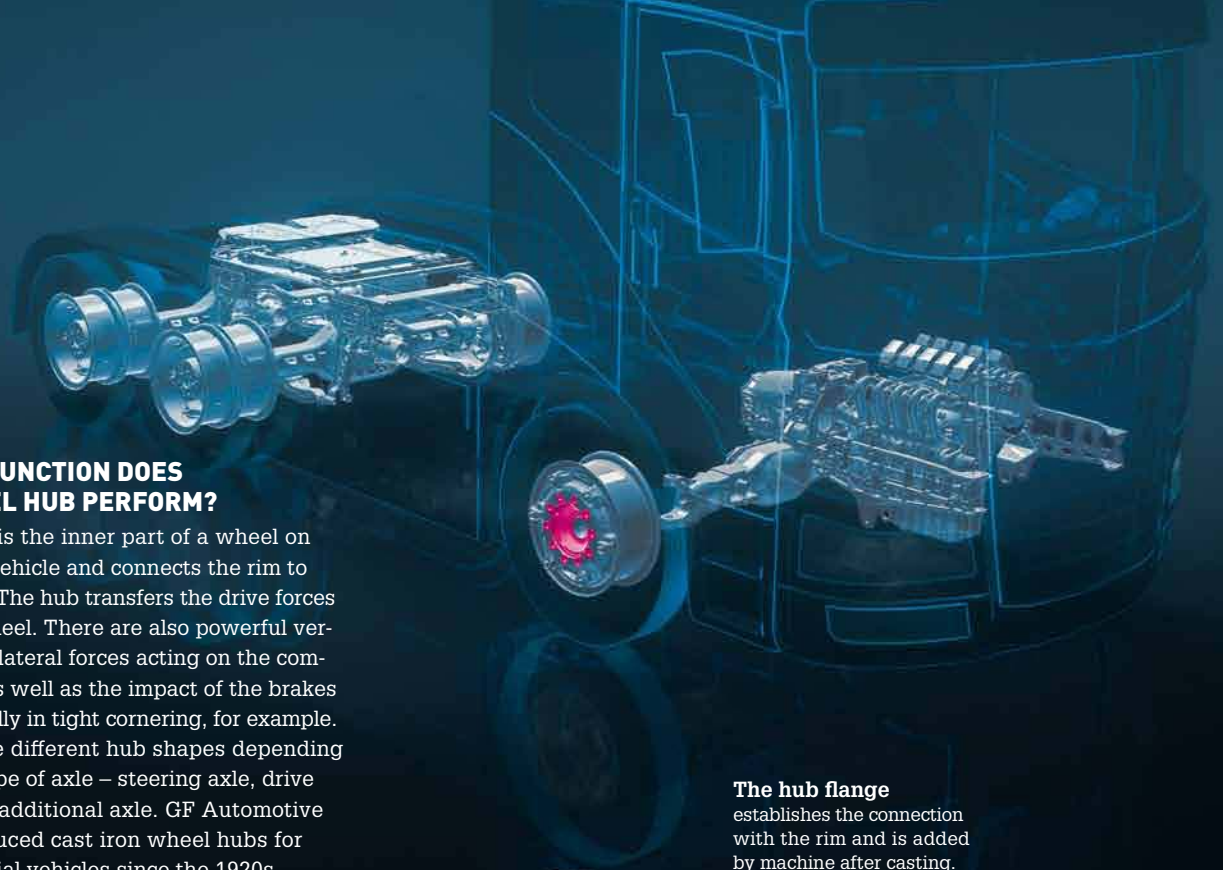
The challenge was to preserve the high stability of the hub using less material – while keeping costs as low as possible. Thus Dominik Mahnig's team deployed computer programs to optimize the shape of the casting component based on bionic criteria. This enabled fast calculation of where less material could be used without impacting on stability. Several iterative processes were applied to arrive at a shape with organic-style holes, gaps and ribs. "Nature takes hundreds of years to optimize its shapes. The computer enables us to accomplish this in the shortest period of time," explains the Head of Product Management and Development.

State-of-the-art technology

In addition to weight reduction – amounting to as much as 50 kilograms per truck – the bionic wheel hub offers another advantage. "The gaps and channels improve air circulation, which supports brake cooling," says Mahnig.

Currently the innovation only exists as a prototype that GF Automotive is presenting at exhibitions and trade shows. "This new product is a real eye-catcher – and it demonstrates that GF Automotive is capable of defining state-of-the-art technology," says Dominik Mahnig proudly. One customer has already shown interest and is currently considering using the hub. If this customer opts for the high-tech component it will be adapted to the commercial vehicle in question on the computer. "The shapes and gaps may then look quite different," adds Mahnig. But whatever happens, it will be modeled on nature. ■

Dominik Mahnig
joined GF Automotive in 1995 having just graduated from university and has since worked in various areas of product development. He is fascinated by the bionic structures nature creates and their use as a role model for cutting-edge technology.



WHAT FUNCTION DOES A WHEEL HUB PERFORM?

The hub is the inner part of a wheel on a motor vehicle and connects the rim to the axle. The hub transfers the drive forces to the wheel. There are also powerful vertical and lateral forces acting on the component as well as the impact of the brakes – especially in tight cornering, for example. There are different hub shapes depending on the type of axle – steering axle, drive axle and additional axle. GF Automotive has produced cast iron wheel hubs for commercial vehicles since the 1920s.

The hub flange
establishes the connection with the rim and is added by machine after casting.

High-strength cast iron
with GJS 600 spheroidal graphite is the perfect material for a truck wheel hub. It is very stable, even at high temperatures, and easy to cast by way of the sand casting method.

Channels
in the normally solid hub save weight. The computer calculates where material can be removed from the component.

Outer cross-ribs
are arranged so as to substantially increase the lateral stiffness of the hub.

Video at:
globe.georgfischer.com

CUSTOMER PORTRAIT
CAMBRIDGE ASSESSMENT

An innovative solution for a prestigious project

Cambridge Assessment, a department of the renowned University of Cambridge, UK, is about to open the doors of its new headquarter building called The Triangle. The requirements of the future-oriented building were high – especially with regard to innovation and sustainability. This was why GF Piping Systems' latest innovation COOL-FIT 2.0 was the perfect choice.

25 YEARS
is the service life of COOL-FIT 2.0 – considerably longer than that of conventional solutions made of metal.

GBP 800 000
is the project volume for GF Piping Systems.

«We offered the right solution at the right time.»

James Chandler
Project Manager, GF Piping Systems,
Coventry, UK

The Triangle will be Cambridge Assessment's new home when it opens at the beginning of 2018. For the construction of its new cutting-edge building, the department of the University of Cambridge demanded an innovative and sustainable approach. And that, of course, extends to the piping system, which had to be energy efficient and easy to handle on site. The construction company Bouygues therefore opted for COOL-FIT 2.0, the pre-insulated, corrosion-free and lightweight solution from GF Piping Systems.

High performance and versatility

Bouygues was attracted to the performance benefits as well as the versatility of COOL-FIT 2.0. The company was looking for an innovative and economic solution for distributing chilled and hot water (37° Celsius) in the office spaces as well as in ancillary buildings. Because of the insulating qualities of COOL-FIT 2.0, the minimal temperature gain for chilled water and loss for warm water adds up to remarkable savings. For the cooling function alone, the savings are up to 30 percent per year compared to an insulated steel piping system.

Moreover, COOL-FIT 2.0 offers outstanding durability. More and more metal solutions are being substituted with plastic as building owners seek to avoid rusty, corroding pipes that result in leaks and maintenance issues. A stipulation from Bouygues was that the pipework in The Triangle should have a life cycle of 25 years. COOL-FIT 2.0 meets this requirement and in fact significantly exceeds the durability of conventional solutions made of metal.

For The Triangle, the installation team wanted to create modules to expedite on-site work. The team of GF Piping Systems in Coventry, UK, provided support by cutting the ›

"A benchmark for new buildings"

Brian Brewis is Senior Building Services Manager at Bouygues and is responsible for The Triangle. He speaks about the special requirements of the project and why COOL-FIT 2.0 was chosen for piping.

Mr. Brewis, what is Bouygues' role in the project?
The architects have come up with a design to make people feel good at work. As an engineering and construction company, it's our task to make all systems work.

What were your considerations with regard to the pipework?
Our specifications were originally for a traditional piping and insulated system. But because it is extremely heavy and difficult to work with, we knew we had to come up with something completely different. We needed a manufacturer to help us.

Is that where GF Piping Systems comes in?
Yes. When we were introduced to COOL-FIT 2.0, we knew it was the right solution. One of the biggest advantages is the fast installation. But before we could change the specifications, we had to get approval from Cambridge Assessment. You have to keep in mind that we were introducing a product that is completely new to the market. We got approval right away. The good reputation of GF Piping Systems played a big role in that.

What has been your experience with COOL-FIT 2.0 so far?
It's amazing how easily the installers have been able to lift the piping, even sections that are up to six meters long. Without COOL-FIT 2.0, the project could have been even more challenging. We see this as a benchmark for new buildings. Where previously copper or steel were used, I believe we'll be seeing many more buildings moving to COOL-FIT 2.0. In the next five years, plastic piping will be at the forefront of specifications. ■

COOL-FIT 2.0 – the pre-insulated, corrosion-free and lightweight solution from GF Piping Systems. Installers can easily lift the piping, even sections measuring several meters long.

33 445 m²
is the area of the building, which is due to be completed at the beginning of 2018 and is one of the biggest building projects in Cambridge. The triangular development consists of five-story office blocks as well as a 39-meter-high tower.

THE TRIANGLE

is the new headquarter building of Cambridge Assessment, a department of the renowned University that provides language exams to over eight million learners in more than 170 countries. Many students of English are familiar with the organization through its globally recognized languages tests. The Triangle will house over 2 000 employees, rising to around 3 000 by 2025.

› piping to predetermined lengths and creating custom bends for unique angles in the building. "This way, completed modules could easily be installed and connected with electrofusion jointing technology on site," explains James Chandler, Project Manager at GF Piping Systems, who has been part of the project team for The Triangle from the beginning. Thanks to its lightweight and pre-insulation properties, COOL-FIT 2.0 was especially conducive to the installers' strategy: the time needed to set up the system is up to 50 percent lower in comparison to conventional solutions.

Future-oriented decision

The decision to equip The Triangle with COOL-FIT 2.0 was taken with the future in mind, yet it happened somewhat by chance. When GF Piping Systems and installation company Allied Mechanical Services first approached Bouygues to bid on a piping system, they presented a different solution. After the official part of the meeting was over, the GF colleagues spoke about what was on the horizon, and the conversation turned to COOL-FIT 2.0. "That's the solution we want," the Bouygues representatives exclaimed.

That was in February 2016, and the product launch was still some time off. So the GF Piping Systems colleagues had to check whether it was even possible for The Triangle to be "cool-fitted." "As it turned out, we offered the right solution at the right time," says James Chandler with legitimate pride: the project volume for GF Piping Systems amounts to GBP 800 000 (CHF 998 000).

Rapidly growing customer base

COOL-FIT 2.0 has only been on the market for about a year, yet the list of projects is already quite impressive and includes prestigious buildings such as the London South Bank University, the Eden Project in Cornwall or the Left Bank Residential Tower in Birmingham. And that's just in the UK. The global market potential for COOL-FIT 2.0 is even more promising. After all, GF Piping Systems' latest innovation is not only perfectly suited for maintaining temperatures in larger buildings such as shopping malls, hospitals, hotel and office complexes, but also for cooling large data centers where special requirements apply in terms of safety and efficiency.

James Chandler and his colleagues are excited about the next development in the COOL-FIT portfolio: COOL-FIT 4.0, with thicker insulation for use in extreme temperatures. The market launch is scheduled for the end of 2017. "Interest is mounting," reports Chandler. Who knows – perhaps the UK team will win a contract before the official launch of this product, too. ■

✚ For a video and more pictures, see:
globe.georgfischer.com

SITE PORTRAIT
SÃO PAULO, BRAZIL

Navigating rough waters

The current economic situation in Brazil is difficult at best. So understandably, a great deal of attention at GF Machining Solutions in São Paulo is on keeping the business afloat. At the same time, though, the focus is also on making the business stronger.

Edson Romão is Managing Director of the site. He first joined GF Machining Solutions in 2001, returning as Managing Director in 2015 after a period of absence. GF Machining Solutions has been established in Brazil since 1997.

Brazil is currently in the woes of one of the country's worst ever recessions. But analysts are starting to detect light at the end of the tunnel: The International Monetary Fund predicts gross domestic product (GDP) growth of 0.2 percent in 2017 and more stability in 2018 with GDP growth of 1.7 percent. Until then, it's all hands on deck at GF Machining Solutions in São Paulo.

Leading the efforts is Edson Romão. He originally joined GF Machining Solutions in 2001, left in 2008 for a six-year hiatus with a competitor, and returned in 2015 as the Managing Director. GF Machining Solutions in Brazil has its origins in 1997, when GF acquired a distributer in São Paulo. One of the first things Edson Romão did in his new position was look for a more reasonably priced office space – with the challenging economic situation, one of the biggest priorities was to save money. He was successful in more ways than one. "Not only is the new office less expensive, we are also now all on the same floor. In the past we were spread out on three floors, which made communication more difficult. Plus, our direct neighbor is GF Piping Systems," he happily reports.

Additional savings have also come from renting warehouse space together with GF Piping Systems and outsourcing logistics to an external provider. "These changes, plus more rigorous financial controlling, helped us come out even last year," he says. An impressive performance in an economy that shrunk by 3.6 percent in 2016.

Sound investments

The main focus of GF Machining Solutions in Brazil is the domestic market, even though colleagues in São Paulo also serve customers in the rest of South ›

Renato Rodriguez – the hoopster

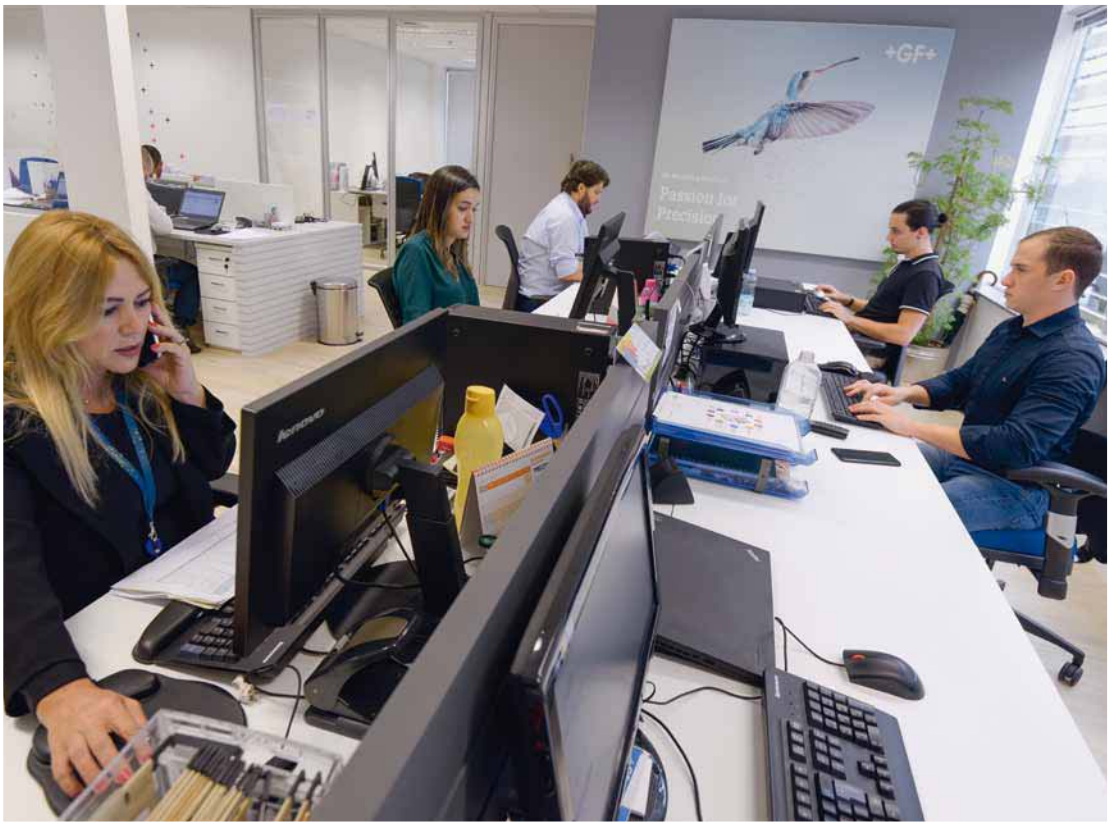
As Sales Director for South America, it is important to Renato Rodriguez to gain customers' trust. His recipe for success is simple: be respectful, polite, self-motivated, proactive and creative. He also makes an effort to understand more about his customers' cultures, especially when working outside Brazil. Relaxation for him means basketball: "I started when I was six. Even today when I play, I always remember the great times I had as a kid," he says.

Thaís Caminotto – the cook

Keeping costs at a low level: that is Thaís Caminotto's most challenging task as Financial Controller at GF Machining Solutions in Brazil – and quite necessary, considering the economic situation. She also helps maintain compliance with local laws and regulations. "It's not easy, as some laws change quite often here in Brazil," Thaís Caminotto comments. On the weekends, she gets creative in the kitchen by trying out new recipes. "It's not a success every time, but that doesn't matter as long as it gives me a chance to try something new," she says.

Gislaine Asseituno – the dancer
Thirty-two years ago, Gislaine Asseituno joined a predecessor of today's GF Machining Solutions in Brazil. Over the years, she has seen a number of machine generations – a detail that helps her carry out her job as a Coordinator in the Technical Assistance department. Customers know that Gislaine Asseituno is not afraid to tackle any problem and is ready to listen to their concerns. To wind down, she hits the dance floor: "Dancing Zumba is good for my mind and my body," Gislaine Asseituno says.

Lucas Borges – the student
Training has figured prominently for Lucas Borges, who joined GF Machining Solutions in Brazil five years ago. "In fact, I spent my first year at the company in an internship," he recalls. As a Sales Assistant in the Customer Services department he has attended courses on 4DX and 7 Habits. The latter has even helped him in his mechanical engineering studies, which he will complete this year. To work off stress from his work and university, Lucas Borges heads to the gym.



The team in São Paulo successfully adapted to the difficult economic situation in the country. One measure was to relocate to less expensive office premises, which GF Machining Solutions shares with GF Piping Systems.

› America – foremost Argentina. Around two-thirds of machine sales are for EDM machines and the remaining third for milling machines. Customers are primarily makers of molds and dies for the automotive industry. Consumables make up a small part of the business. Twenty-seven people work at the office in São Paulo. Six others ensure close customer relations at field offices in the states of Santa Catarina and Rio Grande del Sul.

Even though Edson Romão had to focus on cutting costs, he always invested in his employees – especially in training for technicians. His reasoning: "Our technicians have direct contact with our customers. Through the training, we help them become familiar with our entire portfolio. That way, they can not only talk about their area of expertise with customers, but also about the other machines and solutions we offer." As such, the technicians are in a position to make suggestions on how customers can improve their processes. What is more, this means they can act as their sales colleagues' eyes and ears, informing them if they see potential for additional machines, consumable materials or services.

Edson Romão and his team are also working on recovering a market, namely vocational schools. "If we can get our machines in colleges, the students will experience first-hand what they are capable of. When the students graduate and one day are in a position to select machines for their employers, we will be one of the first companies they turn to," he says. Up to now, GF Machining Solutions has sold 41 machines to the 28 vocational schools belonging to SENAI (the Brazilian National Service of Industrial Training), the last one back in 2014. "There are many vocational schools in Brazil. This is why we want to build upon our success from the past and recover this market," says Edson Romão.

Organization is key

Admittedly, navigating the business in a challenging environment is hard work. But what makes his job easier, Edson Romão says, are the guidelines for corporate governance from headquarters. They set down a clear framework for the highest standards for ethical conduct and integrity. He also places great emphasis on good organization. "That's key when you have to be more stringent with financial controlling, for example, and select new areas for investment," he comments.

With the power and élan with which Edson Romão and the entire GF Machining Solutions team are approaching their tasks, success is sure to follow when the storm settles in Brazil. ■

A total of 33 employees work at GF Machining Solutions in Brazil – 27 at the office in São Paulo and six more at field offices in the states of Santa Catarina and Rio Grande del Sul.

The team's main focus is on the Brazilian market. Some colleagues also provide support for customers in other parts of South America – especially Argentina.

GOOD NEIGHBORHOOD

Since November 2015, GF Machining Solutions and GF Piping Systems in Brazil have been neighbors. Previously, the divisions were at different, separate sites. Today they jointly rent an entire floor in the River Park building in São Paulo's Brooklin Novo neighborhood, where they share a reception area and conference rooms. In addition, the two divisions also rent warehouse space together. The GF siblings are in the best of company: As one of São Paulo's most important financial centers, Brooklin Novo is where many multinational companies have their headquarters.

SITE
São Paulo, Brazil

DIVISION
GF Machining Solutions

1997
Year of foundation

33
Employees

COMPETENCES
Sales and technical support

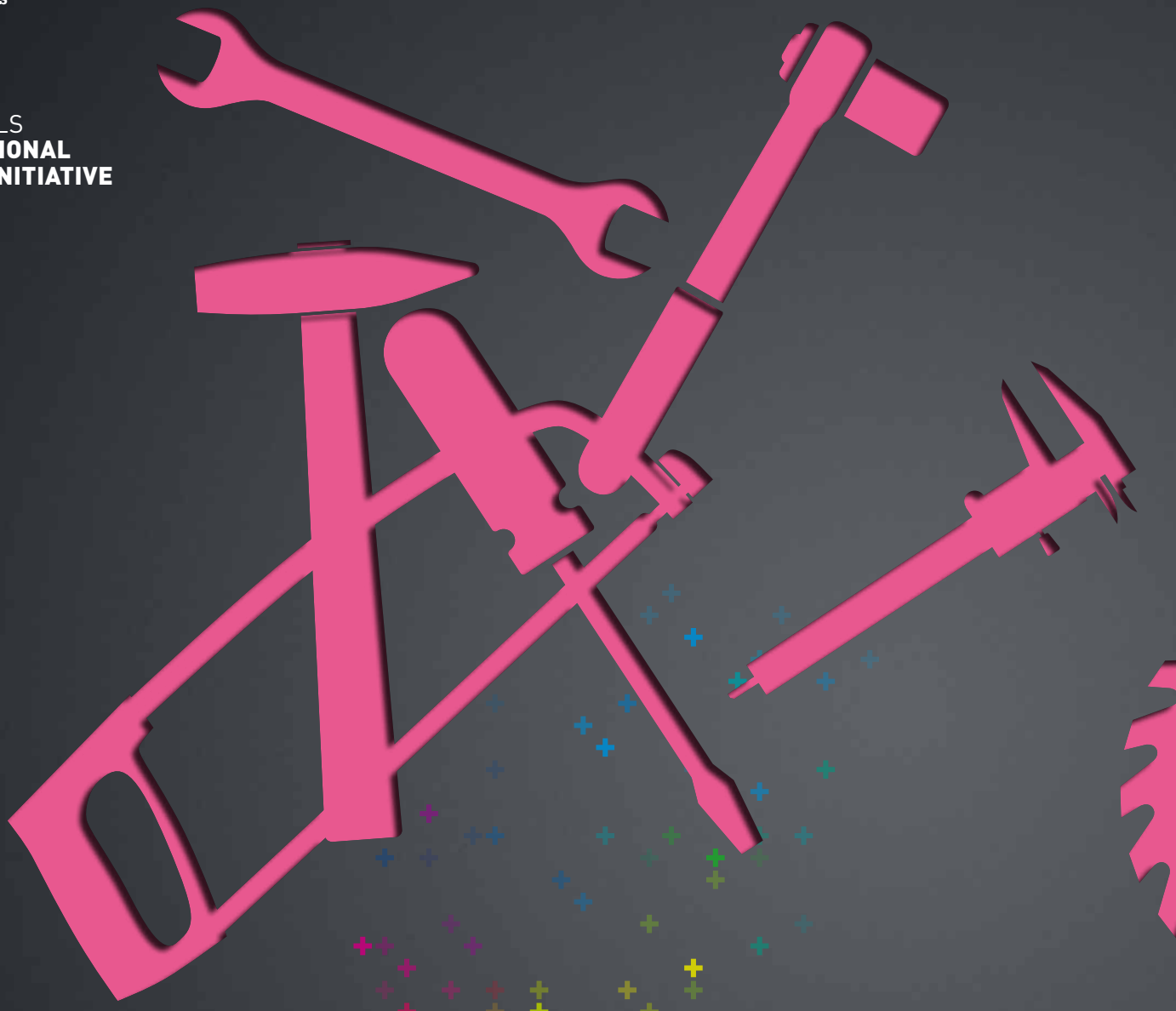
3
Languages spoken at the site: Portuguese, English and Spanish

19.2°C
Average temperature

TYPICAL LUNCH
Rice and beans with salad and meat/barbecue

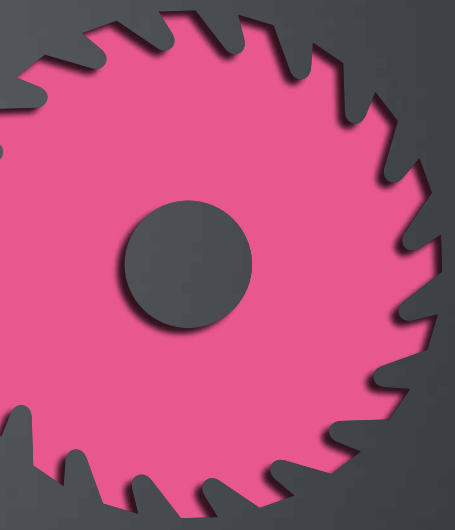
+ For more pictures, see: **globe.georgfischer.com**

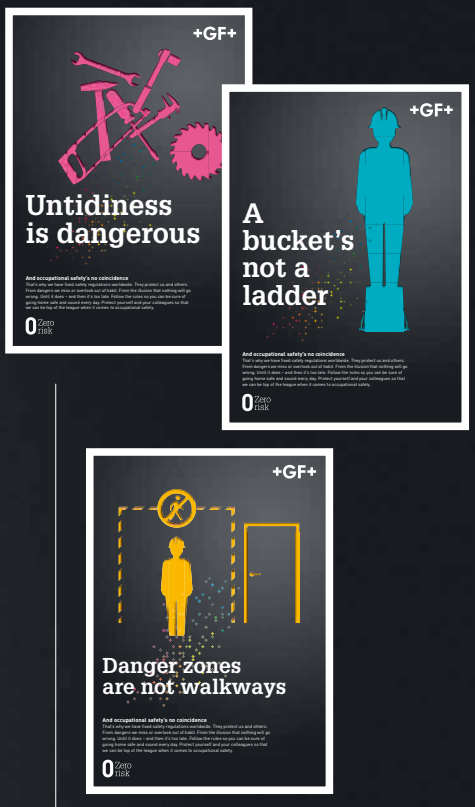
OUR GOALS
OCCUPATIONAL SAFETY INITIATIVE



A cultural change for increased safety

There have been fewer work-related accidents at GF in recent years. A major factor here is GF Automotive's "Zero risk" occupational safety initiative. This multi-stage program is currently in its second phase and aims to impact positively on the safety culture in other divisions, too.





Phase 2 of 'Zero risk' has been up and running since February with the aim of changing the safety culture at GF Automotive. As in the first phase, striking posters appeal directly to employees in production.

Zero risk equals fewer accidents. This formula may sound simple in theory, but it is surprising how difficult it is to implement on a day-to-day basis. This is particularly true in industrial manufacturing companies such as GF Automotive, where there is hot metal flowing in the foundries and employees have to operate machines weighing many tons. This is why the very highest safety standards apply. But in order to prevent everyday accidents, more is required than modern technology and clear rules: heightened awareness of the risks at the workplace is needed. This has been precisely the focus of the "Zero risk" initiative since the end of 2015 – featuring videos, posters and activity days planned individually for each site. Employees in Singen, Germany, saw how eye injuries can affect their vision by trying on special glasses, for example. The success rate of the initiative has been impressive: In the first phase of the multi-stage program in 2016, GF Automotive was able to reduce accident figures by 20 percent.

"A bucket's not a ladder"

Phase 2 has been up and running since February 2017 and aims to build on the success achieved to date. Striking posters appeal directly to employees in production, showing tools lying around, for example, or a man balancing on a bucket. The messages they convey are unambiguous: "Untidiness is dangerous" and "A bucket's not a ladder." The initiative is based on a long-term plan. While Phase 1 was mainly about organizing action days on site to raise awareness of various hazards, Phase 2 aims to bring about a lasting change in behavior: "The idea behind 'Zero risk' is not short-term ideas but to establish a whole new way of thinking. We want to change the culture of safety at GF Automotive on a long-term basis," explains Tina Köhler, Head of Marketing & Communication. She is developing the initiative continuously in collaboration with safety experts at the sites and BU heads.

Taking on responsibility

In order to change attitudes, as many employees as possible have to feel responsible for safety. For this reason, the GF Automotive "Zero risk" team trains special facilitators at the sites who themselves provide training sessions on the topic for other teams. Employees' improvement suggestions are posted for all to see and superiors regularly review implementation. The aim is to firmly establish a safety mindset in day-to-day working life. "We have to shake off the illusion that accidents only happen to other people. Routine is a crucial ›

«The ‹Zero risk› campaign introduces the issue of occupational safety at every level. Employees are now quicker to approach us with concrete questions. This allows us to discuss potential improvements more specifically with management. I can definitely see that people are now starting to look out for others more – rather than focusing solely on themselves.»

Michael-Karl Spannbauer
Deputy Works Council Chairman,
GF Automotive, Singen, Germany

› factor here – it's so important, but it can pose a hazard, too. And we have to learn to accept rules that can be rather strenuous," explains Tina Köhler. The aim is for all employees in production to have undergone training by the end of 2017.

A look at various sites indicates just how effectively the campaign can contribute to a new awareness of safety at GF: in Suzhou, China, for example, the absolute number of accidents dropped by 56 percent to just four in 2016. In Germany there was a decrease in the number of accidents per million working hours at the sites in Mettmann and Leipzig, for example: they recorded 55 percent fewer accidents from the end of 2016 until the end of the first quarter of 2017.

Safety is part of the Corporate strategy

The "Zero risk" vision and the appeal not to take any risks at work are in line with the Corporation's 2020 sustainability targets. The goal by the end of 2020 is to reduce the number of serious accidents at the workplace to zero and cut the accident rate by at least 20 percent in every division. One important milestone along the way to achieving this aim was the certification of all production sites according to the OHSAS 18001 occupational health and safety management system two years ago. Newly founded or acquired subsidiaries have to be certified within a maximum of three years.

All divisions have adopted measures to reduce accident figures in recent years: in 2012 there were 50 accidents per 1 000 employees throughout the Corporation as a whole, while by 2016 the figure had dropped to 32. Minus new acquisitions the figure actually dropped to 28 accidents. Another positive statistic is that the number of accident-related absence days has reached a low level of just 7 600. The aim is to decrease these figures even further – not least by means of the "Zero risk" program.

Other divisions are following suit

The campaign has reached more than 5 000 GF Automotive employees in China, Germany and Austria to date. They have already achieved the Corporation target of a 20 percent reduction in accidents. The two other divisions are now following suit so as to ensure the initiative is equally successful throughout the entire Corporation. GF Machining Solutions started the "Zero risk" initiative in August and GF Piping Systems is currently planning its implementation, too. As such, the whole of GF is now well on the way to a universal "Zero risk" culture. ■

«The initiative has raised safety awareness among all employees. This is important to somebody like me who is in charge of the shift. We have to go on raising awareness in this way. In this regard, Phase 2 of the initiative has been a great help since May.»

Peter Hollaus
Deputy Shift Manager Core Production, GF Automotive, Herzogenburg, Austria

«We implemented the ‹Zero risk› initiative at the beginning of 2016 and the accident rate dropped by 56 percent compared to 2015. In Phase 2 we're now providing training courses in order to enhance everyone's sense of responsibility. Then we'll be able to realize the vision of zero accidents.»

Wenbing Dai
Chief Engineer, GF Automotive, Suzhou, China

+ More pictures at **globe.georgfischer.com**

THE SUCCESS OF "ZERO RISK"

Accident rates at many sites of GF Automotive have been improving ever since "Zero risk" started in October 2015. As such, the campaign has contributed substantially to achieving the 2020 sustainability targets.

100%

of GF Automotive employees are to have undergone training on occupational safety by the end of 2017.

56%

fewer accidents at the Suzhou site in 2016 compared to 2015.

20%

fewer accidents at GF Automotive in 2016 compared to 2015.

A hand in the wrong place.

5000

employees have been reached by "Zero risk" to date.

20%

or greater reduction in the accident rate of every division by 2020.

Provoking without shocking: This warning poster from Phase 1 relates to eye injuries.

Skipping a step: In Phase 1 of the campaign special activities were organized at the sites to draw attention to tripping hazards.

55%

fewer accidents at the Leipzig and Mettmann sites in the first quarter of 2017.

OUR MARKETS
AEROSPACE

Open skies ahead

More and more planes are taking off every day – in fact, air traffic is expected to double in the next 15 years. GF Machining Solutions is set to be part of this growth by offering a portfolio tailored to the aerospace sector's needs.

Air traffic is expected to double in the next 15 years. Business magazine Forbes has identified a number of issues fueling the trend, such as low air fares and a growing middle class in emerging countries. In fact, China will overtake the United States as the world's largest aviation market in around 2024.

In its market analysis, Boeing estimates that 39 620 new planes will be needed by 2035 at a value of USD 5.9 trillion. Competitor Airbus has arrived at similar figures. And a new company from China – Comac – is trying to get a piece of the pie. Naturally, the suppliers of precision parts built into aircraft are also set to profit. This is where GF Machining Solutions enters the picture.

"A whole range of suppliers in the aviation industry rely on our machines," explains Antoine Marty, Aerospace Segment Manager at GF Machining Solutions in Geneva, Switzerland. First in line among these customers are engine manufacturers who produce components like blisks and blades for jet engines. Second are producers of equipment systems, such as flight controls, braking systems and hydraulics systems. Third are manufacturers of aerostructures, which include parts of the fuselage, wings and tail.

Poised for more

At the moment, the high-margin aerospace segment at GF Machining Solutions makes up less than 10 percent of total business volume. "Within Strategy 2020, our goal is to expand to 20 percent," reveals Antoine Marty.

Antoine Marty, Aerospace Segment Manager at GF Machining Solutions in Geneva, Switzerland.

Growing the aerospace business is not only a challenge, but a huge opportunity: "On the one hand, the process to sell a machine is rather complex with aerospace customers. On the other hand, they typically need extensive consulting, responsive support and constant maintenance services," says comments Marty. For that reason, GF Machining Solutions has created a special team to address the industry's specific needs (see text box on p.36). Geographically, the focus is on North America, China, France, Germany, Italy and the United Kingdom. Efforts are also being made to gain a stronger foothold in Japan and Singapore.

A solid portfolio

GF Machining Solutions has offered wire-cut EDM machines, five-axis milling machines and automation solutions for the aerospace industry for a long time now. Along with design, the standard solution typically includes programming and tooling as well as related training, support and service. Sometimes, customers have to achieve an especially high performance for maximum productivity. Here, GF Machining Solutions delivers dedicated solutions engineered to the application's specific needs.

Designed for a specific application, dedicated solutions aim to increase profitability and decrease cost per part. An example is the CUT 200 Dedicated, a high-performance wire-cut EDM machine based on the AgieCharmilles CUT 200. In trials, this machine showed the potential to slash costs by 40 percent compared to standard broaching machines. "By further developing standard machines based on proven technology, time to market can be accelerated and overall development costs reduced," states Antoine Marty.

To strengthen its position, GF Machining Solutions acquired Liechti Engineering in 2014. An important reason for the merger was that Liechti is a leader in the area of five-axis milling machines for the production of turbine blades and blisks for aircraft engines, as well as for gas turbines used in power generation. Today the GF airfoil products – the Liechti g-Mill and Turbomill – provide the highest productivity on the market.

As a provider of standard and individually tailored solutions and being the only manufacturer of EDM, milling and laser products from a single source, GF Machining Solutions is among the top ten aerospace suppliers in the world. With this successful approach, it seems the sky's the only limit for the GF Machining Solutions aerospace segment. ■

AIRCRAFT COMPONENTS MANUFACTURED WITH SOLUTIONS PROVIDED BY GF MACHINING SOLUTIONS:

The compressor blade
is a rotating component which compresses the incoming airflow in order to increase engine efficiency.

A blisk (blade integrated disk)
consists of a disk and several blades. It compresses incoming air.

The diffusor
decreases airflow and increases air pressure before the air enters the combustion chamber.

The turbine disk
is a rotary part which supports the compressor blade.

The turbine guide blade
is a stator part, i.e. a fixed component. It directs the combustion air flow onto the compressor blade.

The compressor blade
absorbs the energy of the turbine and converts it into rotary movement.

"We deliver solutions"

Vincent Mohni is the Managing Director of the Liechti Technical Unit within GF Machining Solutions. He knows what counts in the aerospace business and what customers are looking for.

GF Machining Solutions acquired Liechti Engineering in 2014. As with any merger, each party brings something special to the table. What was Liechti's contribution?
Liechti goes back to 1865, and for the last three decades we have specialized in single- and multi-spindle milling machines for high-speed airfoil machining. We have always followed a project-based approach. That means customers come to us with a drawing and we determine the best way to manufacture the desired component. We deliver solutions, not machines.

And what was the main contribution of GF Machining Solutions in your eyes?
Before the merger, Liechti's footprint was limited – after all, we only have 120 employees. Now that we are a part of GF Machining Solutions, our products can be distributed and supported through GF Machining Solutions' well-established worldwide sales network. That's particularly important when it comes to service.

Let's talk about your customers. Who are they?
As of today about 80 percent of our sales are to companies along the entire aero-engine supply chain, such as General Electric and Pratt & Whitney. The remaining 20 percent is to companies in the power generation sector, with customers like Siemens. But whether blades and blisks are used in jet engines or in gas or steam turbines, the manufacturing processes are very much the same.

What do your customers expect?
The value of the manufactured components is very high, so understandably our customers want a solution they can rely on 100 percent. Also, safety is extremely important, so reliability and reproducibility are a must. Furthermore, our customers have high expectations when it comes to service and expect immediate support if problems occur. Otherwise, they risk expensive downtimes. ■

PREMIUM-LEVEL SUPPORT FOR AEROSPACE AND ENERGY CUSTOMERS

Thanks to the recently launched Turbine Group, key turbine manufacturers have access to all technologies and services offered by GF Machining Solutions. If a customer, for example, asks for a milling solution for a jet turbine part but the manufacturing cannot be done with milling alone, GF Machining Solutions comes up with a solution that combines different technologies, such as milling technology from Liechti and EDM technology from AgieCharmilles. Another benefit of the Turbine Group is continuous and worldwide support over the entire machining lifecycle. As a result, customers can increase their profitability by more than 30 percent.

For more pictures, see:
globe.georgfischer.com

JOIN IN
AND
WIN!

Do you participate in social projects or do you know of a colleague who is helping others? We look forward to your story:
globe@georgfischer.com
All submissions take part in our competition on page 40.

In the 4L Trophy rally, 3 000 participants drove from Biarritz to Marrakech in teams of two.

HEART AND SOUL
EMMANUEL MATEOS

A rally for education

The 4L Trophy, a rally organized to help children in Morocco, was first held in 1997. Over the years it has attained cult status, particularly among students in France such as Emmanuel Mateos. In box-shaped Renault 4 models (4L), teams of two drive from Biarritz to Marrakech, transporting school materials and sports equipment for the children of Morocco's desert communities. A requirement for participation is enrollment in a university – and a sense of adventure, as part of the route across the desert is navigated with a compass. Emmanuel Mateos – part-time Marketing Project Manager at GF Machining Solutions in Geneva, Switzerland – embarked on the ten-day adventure in February 2017. His teammate already had the requisite Renault 4. "After I saw the photos, I knew I wanted to experience this before I graduated," comments Mateos.

Emmanuel Mateos was able to win over his employer as sponsor. "I put together a presentation, hoping that GF Machining Solutions would bear at least part of the costs," he recalls. The Central Marketing Team soon realized that they wanted to sponsor Emmanuel Mateos and his teammate completely. Alongside providing the school supplies and sports equipment, for example, the division also covered costs for preparing the car, for spare parts as well as for the crossing over to Morocco.

In addition to transporting school materials, the 3 000 participants of the 4L Trophy also collected enough money to build five schools in Morocco. ■

Emmanuel Mateos has been working as a part-time Marketing Project Manager at GF Machining Solutions in Geneva for about a year. He is also currently working on a master's degree in marketing at IAE Université Savoie Mont Blanc in Annecy, France.

For video and more pictures, see:
globe.georgfischer.com

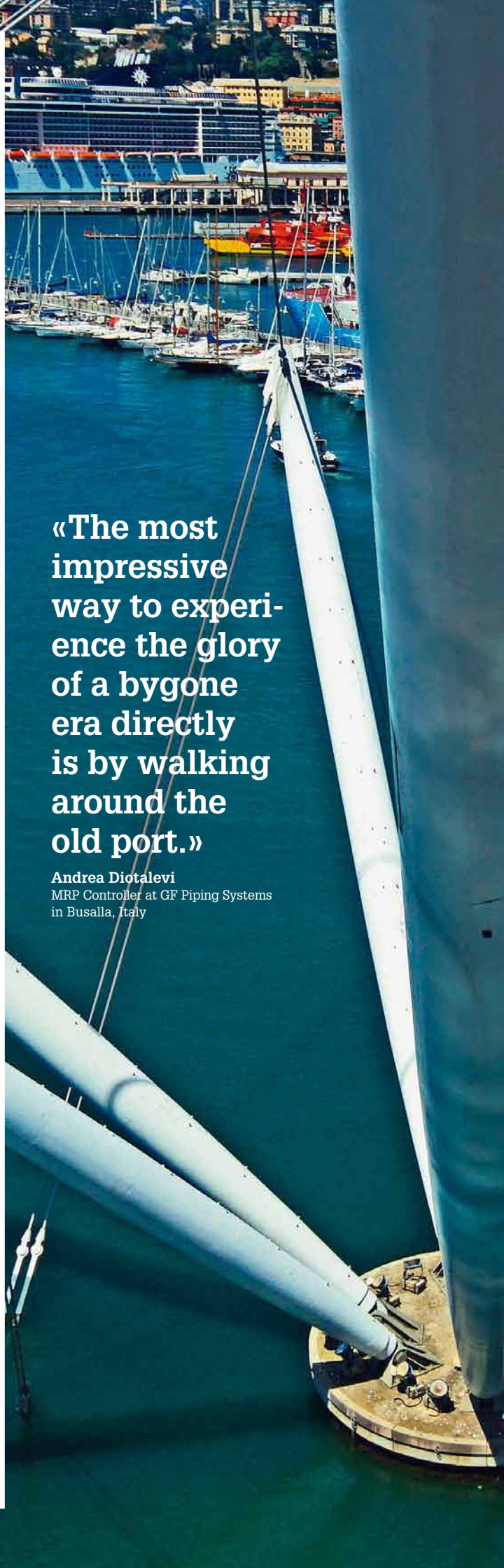
MY HOME
GENOA, ITALY

Italy is well-known as one of the most attractive countries in the whole world – with its rich history, culture, culinary traditions and landscapes, it leaves nothing to be desired. Its boot-shaped landmass contains high mountains and almost 5 000 kilometers of beach. My home is in the north-western region of Liguria – or to be more precise: the beautiful city of Genoa.

As an ancient maritime republic, the city is still surrounded by thick walls built centuries ago as a defense against attacks by the Turks and Saracens. For time immemorial, Genoa has been known as "The Splendid" ("La Superba") – a name that goes back to its strategic position for world-wide trade and the hegemony of Genoa in Europe around the year 1500. This glory of a bygone era is still visible in the architecture of many of the city's historical buildings to this day. The most impressive way to experience this directly is by walking around the old port.

My route to work takes me through part of this magnificent backdrop before I reach the hilly inland. There, some 30 kilometers from where I live, is my place of work: GF Piping Systems in Busalla. ■

Andrea Diotalevi
has been working at GF Piping Systems in Busalla, Italy, for seven years. He is an MRP Controller at the production site there, taking care of material requirements planning. The native of Genoa has an approximately 30-minute commute to work from his home town to Busalla.



«The most impressive way to experience the glory of a bygone era directly is by walking around the old port.»

Andrea Diotalevi
MRP Controller at GF Piping Systems in Busalla, Italy

Not to be missed in Genoa

Genoa's landmarks
The "Lanterna" lighthouse is built on a rock that is 40 meters high and towers above the port. From the top you have a wonderful view of the port and the old town.
www.lanternadigenova.it

The world under water
The "Acquario di Genova" is Italy's biggest aquarium and is located in the old port of Genoa. The new pavilion for whales was recently opened – definitely a place worth seeing.
www.acquariodigenova.it/en

A real treat
The Genovese focaccia is a flat white bread made of yeast dough that has a slightly salty taste. The great craftsmanship and centuries-old tradition that go into making it – and perhaps also the sea air – give the recipe a magical quality.

Bygone glory
The "Palazzi dei Rolli" in Genoa are historical buildings containing magnificent halls and dating back to the 15th century. They are a UNESCO World Cultural Heritage Site and feature impressively elaborate frescoes, paintings and ornaments.
www.palazzideirolli.it

JOIN IN AND **WIN!**

Would you like to present your home to your GF colleagues? If so, please send an e-mail with "My home" in the subject line to **globe@georgfischer.com**
All entries will be included in our competition on page 40.

GLOBE 3·2017
IMPRINT

Published by
Georg Fischer Ltd.
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Production
Signum communication GmbH,
Mannheim, Germany

Translation
Baker & Harrison, Munich, Germany

Printing of the Chinese edition
DE Druck Europa GmbH, Berlin, Germany

Printing of other editions
abc Druck GmbH, Heidelberg, Germany

Image credits
Aaron Green, Bang The Drum Productions, Helmuth Scham, James Bastable, Luisa Fumi Digital Art & Photography, Oliver Oettli, Patrick Wack, Paulo Fridman, Shutterstock, Simone Schuldis

Other images: GF

MIX
Papier aus verantwortungsvollen Quellen
FSC® C006828
www.fsc.org

carbon neutral
natureOffice.com | DE-135-585931
print production

Globe is published four times a year in German, English, French, Italian, Turkish, Spanish and Chinese with a total print run of 14 000 copies.

The next issue will be published in December; the editorial deadline is September 22, 2017.

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COMPETITION

JOIN IN AND WIN!

Take your chance!

Win an iPad Air 2, Bose wireless headphones or a JBL Bluetooth speaker. A prize draw will be held among all employees who send in entries under the sections **Hello!, 3×3** and **My home.** Send an e-mail to **globe@georgfischer.com** with the appropriate subject line. We look forward to hearing from you. The winners will be announced in the next Globe.

Here are the winners of the last competition:
1st prize: Nick Peters (GF Piping Systems in the USA)
2nd prize: Jeffrey You (GF Machining Solutions in Singapore)
3rd prize: Robin Taxis (GF Piping Systems in Germany)

All entries which could not be included in the printed magazine can be viewed online at: **globe.georgfischer.com**

The closing date for entries is October 4, 2017.

Conditions of entry
The competition is organized by GF. All employees of GF are entitled to take part. The winner will be established by means of a draw among all submissions entered within the deadline. Cash payment, payment in kind or an exchange of prizes are excluded. Participants agree to their name being published if they win. Any recourse to legal action is excluded.