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Showcase project in China

8-seater gondola from Leitner for the Jade Dragon Snow Mountains near Lijiang

Just 15 km from Lijiang an exciting nature experience is available – at a very great height. The Snow Mountains of Yulong Xueshan with their thirteen peaks, including the Shan-Zi-Dou at no less than 5,596 meters above sea-level, are located in the Naxi Autonomous County of Lijiang in Yunnan Province in the People's Republic of China. Yulong is Chinese for Jade Dragon. The mountain range was given the name because the line of the snow-covered mountains, which are usually veiled in cloud, twists and turns like a dragon from north to south.

In 2009 the Lijiang Yulong Snow Mountain Company awarded Leitner the contract for the construction of an 8-seater gondola for Lijiang Yulong Snow Mountains. With a line length of 2,883 m, the gondola starts at an altitude of 3,356 meters above sea-level and reaches the top station at 4,506 meters. The old 6-seater gondola built in 1996 was left in place and is

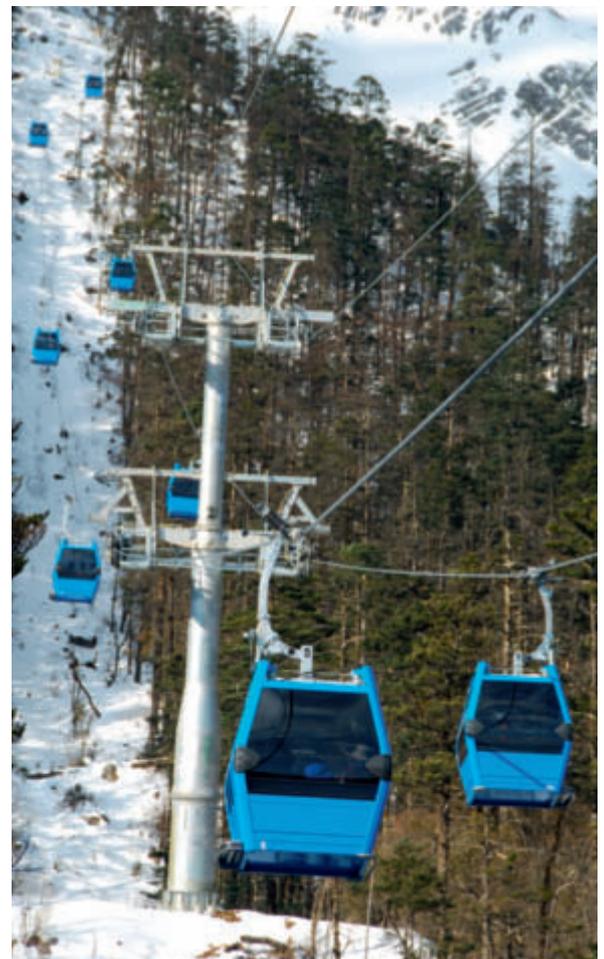
TECHNICAL DATA

Bottom station	3,358 m
Top station	4,516 m
Line length	2,882 m
Drive	705 kW
Haul rope diameter	52 mm
Transport capacity	1,200 P/h



The three-piece tower before the upper terminal is required to handle the evacuation ropeway, with one of the two 6-passenger reversible evacuation cars parked on the lower tower.

now used as an evacuation ropeway – with a separate rope and two cabins running parallel to the new gondola in the to-and-fro mode. The new gondola was officially opened on 19 January 2011. That means the Yulong Snow Mountain Glacier Park, which is an all-year operation, now offers visitors an efficient and attractive means of transport.



View up the line



The lower station seen from the line, with the parking shed on the left. Above the 8-seater gondola one can again see the evacuation ropeway, with the second rescue car above a Sigma gondola in the middle of the photo.

Great success in the Dolomites

Sigma's Diamond cabins continue to make their mark throughout the world.



Photo: Sigma

Present in Europe, Asia and even South America, they remain a dominant force in the Dolomites, more precisely at Dolomiti Superski, one of the world's biggest interconnected skis areas.

For the third year running, the Italian ski resort Kronplatz has ordered new 10-seater gondolas from Sigma. In total, this makes nearly 250 Diamond cabins over three years, all equipped to the highest standards of the range (two-tone finish, heated seats, scratch-resistant glazing, etc). The new Ried gondola will be situated at the base of the Gipfelbahn, which was inaugurated in 2010, to create a real multimodal network, providing transport under the most comfortable conditions from Percha railway station to the top of the ski station without going by road – a godsend for skiers arriving from the neighboring towns of Bolzano and Innsbruck, and

a real advantage in terms of fewer traffic jams and respect for the environment, which is very much in keeping with the ethos of the company concerned. Beyond the significance of the contract, this is also a sign of things to come, with lifts of all kinds being installed as sustainable public transport facilities that are adaptable to all environments, as already demonstrated by the aerial tramway in New York and the Mendola funicular, both equipped with Sigma cabins.

A mountain specialist that exports itself

In the closed world of manufacturing for cable car cabins, lifts and other rope-hauled transportation systems, France has a rare gem: Sigma – a precious pearl indeed, as this cabin engineering company has succeeded in

The Marchner Bahn at Kronplatz was equipped with Diamond cabins in 2009 already.

exporting its know-how to all continents and in adapting its mountain experience to the fields of recreational amenities and public transportation.

From Medellin (Colombia), where the cabins of the aerial tram transport 1 million passengers every month, to London, where its futuristic design capsules have made the ferris wheel of the British Airways London Eye so famous, or Hong Kong, Sigma has expanded considerably, especially internationally (75% of sales), and almost tripled its sales in five years. The company intends to continue in a similar vein: after providing cabins for most of the major ski resorts in the Alps and the world, it is ready to conquer all the mountains, cities and leisure parks on the planet!

Light-weight carriage engineering

In the course of the main annual inspection of the Säntis aerial tramway, the two cars were fitted with carriages with a difference: Aluminum was used for many of the components that are normally made of steel. That makes it another world first from Garaventa.



The new lightweight 24-wheel carriage from Garaventa for the Säntis aerial tram



A bird's eye view of the new carriage

Public services on the Säntis aerial tramway were suspended from 17 January to 5 February, and not just for the mandatory annual maintenance work but also to instal a new haul rope and replace the carriages on the two cars.

The biggest challenge in the design of the carriages was to comply with the stricter standards of safety specified in the new ropeway regulations without increasing carriage weight. According to Gregor Winiger, chief design engineer at Garaventa AG in Goldau, it was necessary to trim about 30 % off carriage weight so as to avoid having to reduce the payload of the cars and thus the capacity of the installation.

International debut for the aluminum carriage

To solve the problem, the engineers turned to the latest technologies in the field of light-weight aluminum engineering. The design process for the new carriage was handled with the help of 3D CAD, with modern calculation methods (FEM) employed for the fine-tuning. A key modification was the use of aluminum for parts of the track rope brakes and the complex system of evener frames for the 24-wheel carriage. 3D simulation made it possible to verify performance under operating conditions in the design stage already, including clearance on the towers. To engineer the various components, the design data were fed straight into a CAM metalworking machine. The aluminum parts were then milled from solid blanks and assembled in the works. As required for all new ropeway components, the complete carriage was finally subjected to a conformity assessment process pursuant to the EU Cableway Directive 2000/9/EC, and CE certification was awarded.

JN

Gondola ropeway for Kolmården Zoo

CWA delivers the gondolas in a themed design.

Photos: CWA



The giraffe gondola



The tiger gondola



The unique wildlife park gondola, which is due to go into service this summer, provides a trip with a difference through Kolmården Safari Park and is an adventure in its own right. It gives visitors a close-up view of wild animals from all over the world, including lions, bears and wolves.

This airborne safari is the biggest single investment ever made at Kolmården.

Founded in 1964, the wildlife park lies 90 minutes to the south of Stockholm by car and about 30 km north of Norrköping. With an area of 250 hectares and 551,000 visitors a year, it is the biggest zoo in northern Europe.

78 OMEGA IV-8 LWI cabins

The 78 OMEGA IV-8 LWI gondolas from the famous Swiss CWA company have been finished in three themed designs: tiger, giraffe and zebra. The gondolas are fitted with a multilingual information system that provides lots of interesting facts about the park and the animals to be seen there. The new safari gondola looks set to become a big attraction for all visitors to the park.

The CWA vision

For CWA, the aim is to combine enthusiastic customers with satisfied personnel and long-term profitability. The company's success bears out the wisdom of this corporate strategy.

In 2008 1,550 cabins were shipped from the CWA works to over forty countries of the world. Since 1956, CWA Constructions SA/Corp has sold over 52,000 cabins. A focus on the customer, practical solutions, Swiss quality, integrated design, innovation and convincing after-sales service explain the high level of confidence customers place in CWA's products.



Prinoth's park pro defended its reputation in convincing style.

Bison X Park Show

Prinoth's park pro defends its reputation in convincing style.

For the second year in a row, snow-covered Tignes (F) was the setting for the European Winter X Games, the special freestyle event based on the American model of the X Games in Aspen, Colorado. As the official snow groomer partner to the event, Prinoth made four Bison X park pros available to the American shapers who had traveled specially to Tignes to handle the grooming, thus ensuring excellent conditions for eight spectacular competitions.

On the last day of the three-day event, March 18, 2011, Prinoth took advantage of the occasion presented by the European Winter X Games to stage its own spectacular Bison X Park Show. That gave the snow-park-conscious participants an opportunity to observe the Bison X at work on a funpark up close and also to put the agile jump shapers to the test themselves. So the get-together for the funpark scene provided a mutual exchange of information and shop talk, while visitors had the additional advantage of benefiting from both events.

Thanks to its agility and power, exclusive equipment, and the exceptional cutting angle of the blade, the Bison X was the star of the Eu-

ropean Winter X Games and successfully defended its reputation once again as a top performer for shaping and grooming snow parks.



Photos: Prinoth

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The perfect stage for a strong performance



Photo: Kässbohrer

PistenBully at Interalpina:
From pioneering technologies
to pre-owned vehicles

The PistenBully 600 W: The new 4.5-tonne winch makes working in steep terrain a real pleasure.

The market leader PistenBully will have a large range on show for visitors to this year's Interalpina: proven top models for downhill and cross-country trail grooming, technical innovations like the PistenBully EQ.2, and a large selection of fine pre-owned vehicles. New: the PistenBully 100 comes with a more powerful engine, and the PistenBully 600 W Polar offers even more reserves and greater safety than before thanks to the new 4.5-tonne winch.

Powerful performance

The stars of Interalpina 2011 are putting on an impressive show of the full potential of today's PistenBully family. The PistenBully 600 W Polar loves a challenge in the form of steep slopes to climb and large volumes of snow to move. With the new 4.5-tonne winch, working on steep slopes is a real pleasure. Like the PistenBully 600 W Polar, the PistenBully 100 has also undergone an upgrade. It now has a more powerful engine, improved functionality, greater comfort and more attractive looks. The PistenBully 400 Park, Formatic 350 and PistenBully Paana underline the fact that Kässbohrer has the right vehicle for every need and budget. Kässbohrer Geländefahrzeug AG is also the only oversnow vehicle engineering

company to offer a navigation system for snow groomers. The groomers are delivered with SNOWsat installed ex works, while older vehicles are also easily retrofitted. The experts from SNOWsat will be in attendance at Interalpina to provide further information and answer questions.

EQ.2: the study continues

With the PistenBully EQ.1, Kässbohrer set a new benchmark for environment-friendly, sustainable and above all cost-effective working. The design study of the PistenBully 600 with a diesel-electric drive (hybrid drive) made its debut at Interalpina 2009 and was very well received there. Extensive tests have proven that the EQ.1 cuts fuel consumption by up to 25 %. That means reduced emission levels, while operating costs are also lower and the vehicle is more economical. It also means that attachments powered hydraulically to date can now be powered electrically. The hybrid drive also turns the PistenBully into a kind of mobile power plant; it generates enough energy to operate external electrical equipment, e.g. for repair work. Over the last few months, the PistenBully EQ.1 has undergone further development work, and its successor, the PistenBully EQ.2, will make its debut at Interalpina.

GreenTech for summer operations

A machine that has made its mark away from the snow will also be on show at Interalpina: The PistenBully 300 GreenTech is an all-year machine that comes into its own on steep slopes and extremely sensitive terrain. The GreenTech is an ideal vehicle for delivering silage to biogas plants, for forestry work on inaccessible terrain, for mowing and mulching work on ecologically sensitive ground, and for work on wetlands. The flexible PistenBully design permits the use of various attachments including dung spreaders, plant hole drillers, trench cutters and so on.

Pre-owned Kässbohrer vehicles: a safe choice in every price category

At Interalpina, anyone looking for a pre-owned PistenBully can check out the wide range of vehicles currently available, their condition, repair packages, prices and much else besides. The selection includes unrepaired vehicles, ready-to-use PistenBullys and fully reconditioned machines complete with warranty. **PistenBully is to be found at Interalpina in Hall 1, stand no. 103.**

A business success story

Fatzer for generations –
for 175 years

In 1836, a business success story began in Romanshorn, a story of sustainable growth, tradition and innovation. The Fatzer company has grasped the secret of continually re-developing areas of business, adapting to technological progress and rising to the challenges of globalization and crisis.

The milestones of success:

1836: Joachim Fatzer (1819-1885) founded the Fatzer rope manufacturing company before reaching the age of 17. Ropes for agricultural purposes and home use quickly achieved great popularity.

1850: With the first Swiss steamboat, a new era began for Fatzer: the first heavy-duty ropes went into production. Soon, the quality of the ropes had everyone talking.

1890: Ernst Fatzer took over his father's business and manufactured the first wire rope at the turn of the century. The first wire-rope production facility was built in 1912.

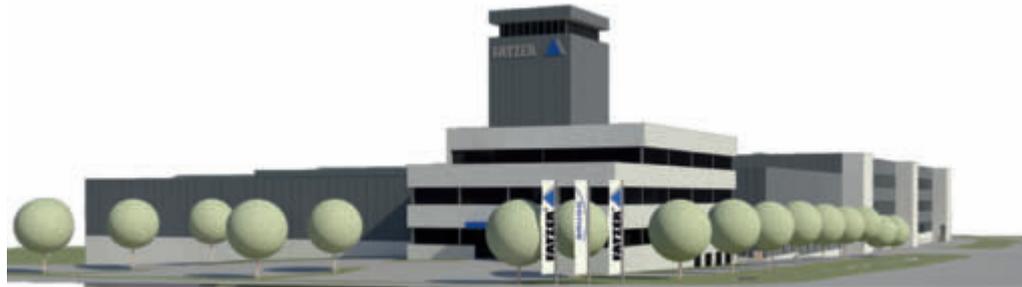
1914: The first rope-laying machine with a production capacity of 15 tons was commissioned, followed by a tubular stranding machine and a 24-reel strand-forming machine.

1948: Ernst Seiler took over the management, and the number of employees grew to 22.

1952: Production capacity was expanded and the first fully locked track rope was manufactured.

1975: The world's largest stranding machine was installed. Production capacity: 110 t rope weight.

1976: Major contract for the offshore industry: 12 cables, 79 mm in diameter, with a total weight of 1000 t.



Computer visualization of Fatzer's new Plant II in the final design stage



The Fatzer works in the 1930s

Photos: Fatzer

1981: The famous cable cars of San Francisco were equipped with Fatzer cables.

1986: With a diameter of 115 mm, the thickest cable to date was produced by Fatzer.

1992: The Fatzer AG wire rope plant was incorporated into BRUGG Ropes Technology Holding Inc.

2008: Construction of Plant II was begun with a 150 t stranding machine.

2011: Fatzer has a work force of about 75 skilled employees.

And what about the future?

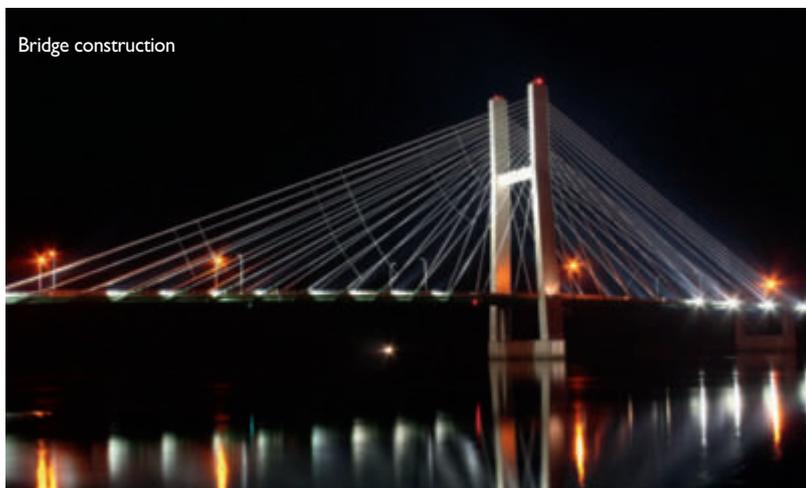
2013: The final construction stage of Plant II in Romanshorn is due for completion. 2011 is in the Chinese sign of the metal rabbit, which is seen as a symbol of peace, prosperity and diplomacy. That makes it the perfect year for celebrating Fatzer's 175th anniversary!

ROPES

Superb quality ropes



Gondolas



Bridge construction

Photos: ArcelorMittal

ArcelorMittal, with its production plant in the French town of Bourg-en-Bresse, is among the world's market leaders in the wire-drawing industry.

By establishing business and research partnerships with the major ropeway manufacturers (Pomagalski, Leitner, Doppelmayer, etc), ArcelorMittal has been able to continually improve its existing products and develop new ones.

ArcelorMittal provides competent services for activities related to hoisting, mining, offshore platform mooring, air transport of people or goods, and much more.

The company's solutions have been a guarantee of success for many years now and have left customers and ropeway users highly satisfied.

SPC technology

The deployment of thousands of ropes worldwide that have been produced using SPC technology (solid plastic core) is a clear sign of ongoing scientific progress; some SPC ropes installed in 1985 have now been in use for more than 60,000 hours. In addition, thanks to exceptional stability deriving from their perfect geometry, the ropes do not need to be shortened, and reliable performance of the rope grips is assured in the long-term (next to no reduction in diameter and only minimal elongation of the ropes).



Offshore



Aerial trams

ArcelorMittal employs only the best quality steel and a high number of components to produce ropes in conformity with the strictest safety standards for passenger transportation, while still maintaining a high degree of comfort for ropeway passengers. The company produces ropes with the optimum geometry and a very strong strand structure

to ensure maximum rope stability during ropeway operation.

ArcelorMittal offers the full package of engineering, installation and rope maintenance. For the spliced joints, ArcelorMittal employs a unique method using tried and tested materials for maximum stability of the splices throughout the life of the rope.

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- Alpine ski and all season resorts planning and development
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- Equipment for rent and service centres
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- Toboggan Runs
- Climate control systems
- Snow making systems
- Industrial safety expertise
- Equipment estimation, selection and delivery

Wire ropes for every need

Introducing Redaelli, the manufacturer of speciality ropes.



Maurizio Prete
CEO

Redaelli is one of the world's leading wire rope manufacturers. Redaelli's speciality wire ropes are used in a wide variety of applications, including construction cranes, maritime cranes for the oil industry, suspension and cable-stayed structures such as bridges and stadiums, hoisting ropes for mining, and ropes for all kinds of lifts and cableways.

For Redaelli, customer service is a high priority on a market on which a full service offering is becoming increasingly important, covering all aspects from the sales contract and engineering to final installation and maintenance. Redaelli has

always had a strong focus on value added, with the added value available to the customer as the primary objective. Amongst other things, this is achieved through outstanding coordination between sales and service. The company is headquartered in Milan, while production is handled in two works near Lake Garda in Gardone Valrompia and not far from the Slovenian border in Trieste. The latter plant is used primarily for the production of heavy ropes, as it is located within the port itself with direct access to the quays for loading.

Know-how with a capital letter

Know-how is another big priority at Redaelli. Customers stand to benefit from the company's decades of experience in a wide range of wire rope applications. In the field of aerial ropeways, for example, Redaelli supplied the ropes for the first installations to be built in Italy. And the company has never rested on its laurels but continues to make its mark with state-of-the-art wire ropes supplied to the most modern ropeway installations, including the 3S Rittnerbahn in Bozen, the new Meran 2000 aerial tramway, the Funifor in Pejo (Italy), and some of the more recent gondolas built at Kronplatz in South Tyrol.

As a result, Redaelli's ropeway customers can be sure of getting the mature and reliable products needed to guarantee the highest levels of passenger safety.

Global player

At the international level, Redaelli is not only active on the market for wire ropes. The service centers for crane ropes opened in Turkey and Russia, and the new agency in Shanghai reflect Redaelli's goal of establishing itself more and more on the international marketplace.

Redaelli has also made it into the Guinness Book of Records: In March 2010, what was then the world's heaviest wire rope, weighing 361 tons, was shipped to a customer in the oil industry. Recently Redaelli manufactured an even heavier rope.

In summary, it can be said that Redaelli offers customers a complete product in a package comprising sales, service and expertise, and with a high level of added value and safety – in line with the company's motto "The Sense of Safety".



Photos: Redaelli

Redaelli delivered the ropes for the Meran 2000 jigback. With its 120-passenger cars, this is the biggest aerial tramway in South Tyrol.



World record for Redaelli: In March 2010, what was then the heaviest wire rope in the world (361 t) was delivered to a customer in the oil industry.

Monetize the summer season by offering more services.

Neveplast makes downhill skiing an all-year activity.



Photos: Neveplast

Neveplast for all-year downhill skiing



Neveplast Tubby: fun and safe



Ski resorts typically enjoy an extremely profitable but short season followed by a longer period with low revenues. That is the reason why so many are currently looking to develop activities available as an alternative to the winter season.

To increase profits you can provide a variety of recreational and sporting activities involving low operating expenses with the objective of entertaining as many people as possible. In summer it is mostly about families; so the activities need to be targeted at children and teenagers, but without forgetting the adults. To be profitable, there will need to be a large visitor turnout; the initial investment must be limited, and low operating costs for both personnel and maintenance are essential. It is very important to employ structures that can be utilized both in summer and in winter so as to increase the tourist turnout with the help of new services.

Neveplast is a dependable partner with considerable experience in recreational and sporting activities, and convincing references from mountain resorts and elsewhere.

For activities involving sports, Neveplast offers artificial ski-slopes for both downhill and cross-country skiing. Construction of an artificial ski-slope, even a small one for a ski school, can provide that all-important link between summer and winter, the aim being to have guests who attend the ski school in summer return in winter.

For fun activities, Neveplast now offers summer snow tubing with a new and exciting feature: In addition to the structural changes that will be presented at InterAlpin this year, Neveplast is also introducing Tubby Jump, which completed successful trials last summer. Following a straight section of Tubby track, you take off and land safely on a huge inflatable bag. Like the classic Tubby slopes, Tubby Jump can be used in both summer and winter.

Another new item this year is Skiddy, an electric kart that enables you to do doughnuts and 180s like those performed in a car on snow. This latest product can also be used all year round, guaranteeing very short amortization times and a fun and easy to use product.

neveplast@neveplast.it, www.neveplast.it

RCS - the Radio-Controlled Stop

A description of a simple, reliable and inexpensive safety device for all types of lifts: the remote stop of an installation via a radio controlled system.

"Stop, stop!"

"Too late, back it up. More, more, OK, stop now!"

"Er, a little bit forward, please!"

Familiar talk? This is an excerpt from a radio chat between a mechanic in the maintenance basket and the operator in the drive station. Many ropeway operators, either of chairlifts, gondolas or cable cars, will certainly remember being in such situations.

Very often the operator does not react quickly enough to the request of a mechanic standing on a tower or in the maintenance basket, either because he is not right in front of the controls or because he does not hear the request correctly. Confirmation means more lost seconds, or possibly worse.

The young electronics engineer Razvan Nea-goe has been working on a gondola lift in Romania since 2007, and he had often been in in the situation described above. So he decided to do something about it.

"I don't like to be driven without having some control. I'm not a roller-coaster fan. I think that if we can't have the whole dashboard and pedals, at least we must have the brake lever nearby."

With material resources limited, he tried to somehow solve the problem with what he had – like the radios that every operator and mechanic carry everywhere.

And so the RCS system was born: Radio-Controlled Stop. As an electronics engineer and a radio tech (amateur radio operator), Razvan thought of a system that allows the installation to be stopped remotely, using any of the radios available on the installation.

Some would argue that it is not a fail-safe system - forgetting that, in reality, there is no such thing as fail-safe; that is an unachievable goal. There will always be some unimagined failure mode that renders a so-called fail-safe device "fail-wrong". Reluctance to accept non-fail-safe radio control concepts leaves us with the worst of all possible alternatives: a hand-held voice radio that is hopefully in contact with a hopefully attentive person at the other end who will hopefully follow the instructions of the person out on the lift line who needs the controls to be operated in a



Photo: P. Popa

The installation is stopped by simply pressing a dedicated button on the radio station.

certain way. If you think about it, this is an at least triple normally-open AND gate - very far from the illusive fail-safe principle.

Razvan took out of the loop one of the two human factors and harnessed more of the radio link (coded digital signals travel farther than plain voice and, by their nature, are much less prone to be misunderstood through interference), and created a complementary system that does not replace the regular controls or procedures, but rather enhances them in order to allow faster response times in case of emergencies.

The prototype has been undergoing testing every day for almost a year (as of December 2010) on an installation running all year round, so far without a single hiccup (false stop or missing a stop command).

Presently mounted on an open board so as to facilitate modifications, the module is being redesigned so as to fit inside a small prototype box the size of a residential circuit breaker to permit mounting on a standard DIN rail inside the electric cabinet.

The module connects via a simple audio jack to a radio that must remain at the controls; it acts as the radio receiver for the stop command.

The RCS module is connected via an internal relay to the regular STOP button (electromagnetic braking) for a smoother stop, but it can be connected to any brake button (service brake, emergency brake or both simultaneously), either normally closed (most cases) or normally open. The module has an insignificant power draw (100 mA max, at voltages between 8 and 30 V AC or DC), and it is protected by a small 250 mA fuse so it does not trip any breakers in case it fails catastrophically (not that that is likely, but Razvan is a fan of defensive design). Also, the RCS is powered via a DPDT (double pole-double throw) switch that is connected in such a way that in the highly unlikely case of a stuck output relay (resulting in a permanent STOP state), the OFF position virtually removes the RCS system from the cabinet and

restores the initial connections. This was done in order to minimize the impact over the original ropeway controls.

To be brief, the great advantages of the RCS system invented by Razvan Neagoe are as follows: minimum investment (the RCS module and programming for the radios), simple operation, ease of restoring the original controls, and adaptability for use with any installation. The requirements: an electrical STOP button and radios, an extra licensed frequency, and the need to be able to stop quickly if something goes wrong (on chairlifts, ski lifts, gondolas, overhead cranes, conveyor belts, etc).

Almost any brand of professional radio can be programmed for RCS use. The system works on a separate frequency so as to be able to function regardless of any ongoing conversations occupying the regular voice channel.

There is no need to set the channel selector before sending a STOP command: simply press the predefined button on the radio, and the signal will be transmitted on the right frequency, regardless of the channel currently in operation.

To reduce the risk of an unwanted STOP command due to radio interference, the RCS is

protected by two different coding systems, one in the RCS module, and the other in the radio. As mentioned above, in almost a year of daily operation, there have been no false stops in spite of the vicinity of a radio tower with dozens of active transmitter antennas, ranging from the 2-meter band to GSM and microwave data links.

To make sure the system works in poor radio propagation conditions, it has been programmed to send 16 redundant commands in rapid succession - a single received command being needed to bring the installation to a halt.

On the North American market there are similar systems offering more functions, but the cost is extremely high, requiring dedicated transmitter interfaces and receivers, as well as extensive integration in the control panel. In addition, it is necessary to carry an extra gizmo. And the trouble is that disaster strikes when we least expect it, and we only have available what we are actually carrying - the trusty old radio.

Also, the Bluetooth devices that are increasingly seen on the slopes today, such as those used to control snowguns, have far too little power

to cover the span of a ropeway (no more than 100 milliwatts). Navigating through menus is not the thing you want to do in an emergency, either. A tough professional radio, with its 5 or 6 watts of radiated RF power and its easily accessible dedicated programmable keys, is the right beast for the job.

Razvan Neagoe considers that only the STOP command is really a necessity for safety in the industry, and has implemented the RCS system accordingly - with a minimum footprint in the electrical cabinet and low impact on the budget.

The purpose of this article is to present a simple, practical safety system with robust functionality. Variants based on this RCS system might one day become available to all lift maintenance personnel at a reasonable cost. Making them inexpensive and reliable - with no bells and whistles - is the only way to ensure that such devices come into common use in the industry, saving property from damage and, why not, lives.

For more details, eng. Razvan Neagoe can be contacted via his e-mail address razvan@wowmail.com, or via ISR.

Petre Popa

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Reliable water supply for snowmaking installations

With its ductile cast-iron pipes, Duktus offers a strong backbone for modern snowmaking installations.



Up to 5° deflectability – saves time and fittings



Delivery with special equipment – Bergbahnen AG Kitzbühel, Austria



No special bedding required – Ski Kožuf, Macedonia

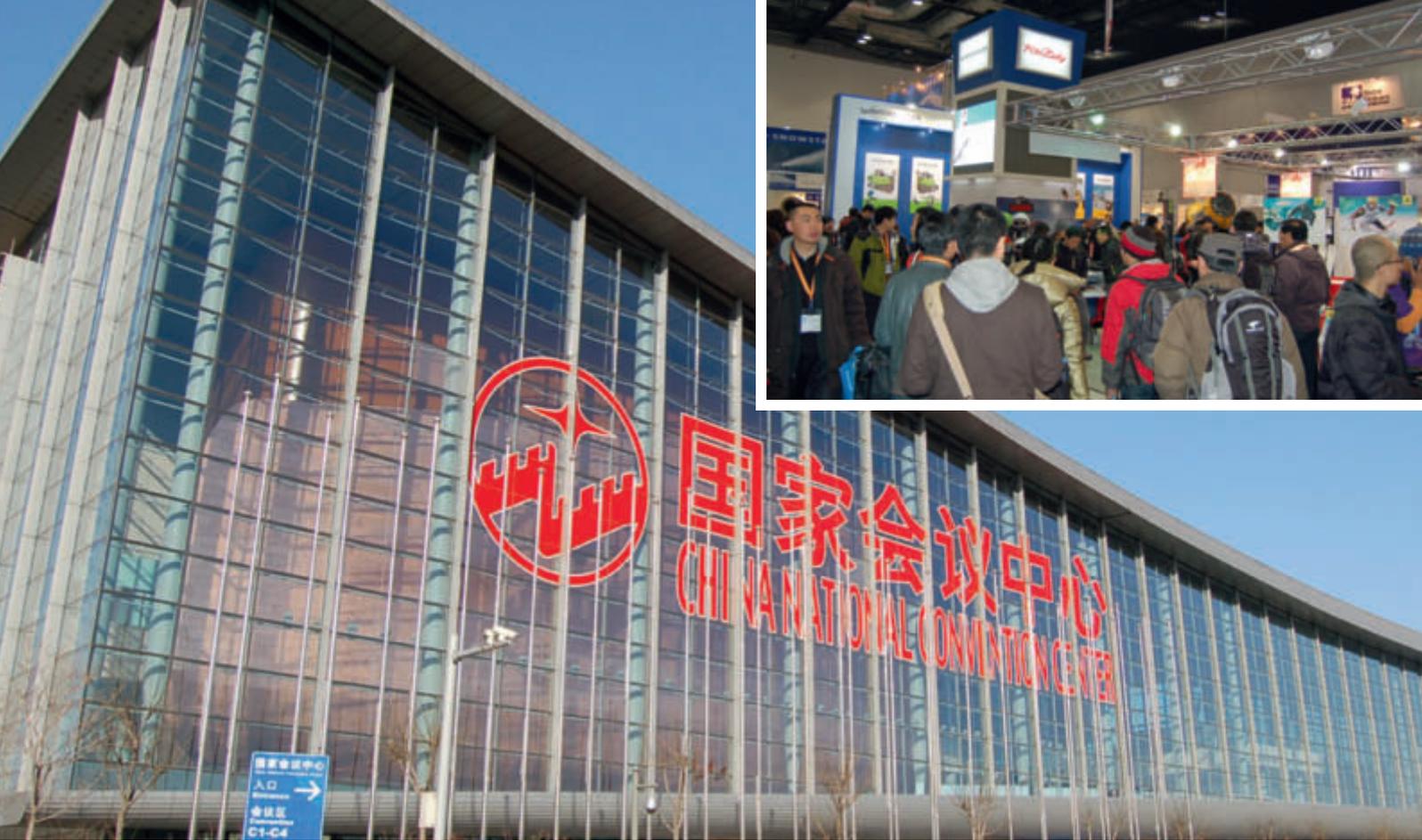
For any modern winter sport resort, the use of snowmaking systems now goes without saying in order to guarantee snow cover and ski trail availability as key economic factors in winter tourism regions. One of the basic requirements for the efficient operation of a snowmaking system is a reliable water supply designed to meet the demands of the high mountain environment and to handle very high pressures of up to 100 bar. Thanks to the robust material used, its flexible bell and spigot system, plus quick and easy pipe laying and assembly, Duktus has become one of the market leaders for pipes and fittings for snowmaking systems.

The advantages:

- Maximum safety and reliability at operating pressures up to 100 bar
- Fast and easy laying; no welding required
- Intelligent product range with a full cast of pipes, fittings and the VRS®-T joint; sizes from DN 80 to DN 500
- Deflectable to a max. of 5°, so fewer fittings required
- Service life > 50 years
- Good assortment of pipes and fittings held in stock for fast delivery
- Specialists in the production of cast iron pipes with decades of experience and a list of reference projects that speaks for itself
- Product quality to EN standards; member of various quality assurance associations; certified to ISO 9001
- Help and advice in the planning stage, and training courses for layers given by experts
- Technically and economically efficient pipe system; laying rates up to 400 m a day



Good assortment of pipes and fittings in stock – Duktus Tiroler Rohrsysteme, Austria



Alpitem China 2011

Sixty highly satisfied exhibitors were at the third Alpitem China, which was held in combination with Ispo China on the trade fair grounds of the China National Convention Center (CNCC) in Peking on 23 - 25 February 2011.

“We are seeing an incredible pace of development in China with some 200 winter sport resorts,” says FIS President Gian Franco Kasper, who also has a prediction: “Sooner or later we will be holding World Cup events there.” This positive trend was also very much apparent at this year’s Alpitem China. On a total exhibition area of 30,000 square meters, 276 exhibitors were involved in Ispo China, while sixty exhibitors from

Germany, Italy, China, France, Austria, the USA, Canada and Korea presented their products and services at Alpitem China. The Ispo/Alpitem China twin trade show – the leading B2B winter sport platform in Asia – was a big success, attracting some 17,000 visitors in three days. Many of the exhibitors were correspondingly enthusiastic and convinced that China is the market of the future. In addition to all the exhibits, the trade

show was accompanied by the Asia Pacific Snow Conference, which met with keen interest on the part of the one hundred or so attendees. The conference program was devoted to two main topics. In the first part the focus was on the “hardware” in winter tourism and the ski industry, while the second part was devoted to the “software” in the form of ski area quality and quality management.

IALCCE 2012

Third International Symposium on Life-Cycle Civil Engineering
www.ialcce2012.org



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Announcement and Call for Papers

Hofburg Palace, Vienna, Austria

October 3 - 6, 2012

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IALCCE 2012

The third Symposium of the IALCCE series, the International Symposium on Life-Cycle Civil Engineering 2012 (www.ialcce2012.org) will be held at Vienna Hofburg Palace from October 3 to 6, 2012. The Symposium is organized on behalf of the International Association for Life-Cycle Civil Engineering (IALCCE) under the auspices of the University of Natural Resources and Life Sciences.

Call for Papers

Authors are kindly invited to submit 300 word abstracts by May 31, 2011 through the online submission system available on the Symposium website. Authors will be notified regarding the status of their abstracts by June 30, 2011. Full papers are due by January 31, 2012. Final acceptance of the full papers will be notified by March 31, 2012.



Hofburg Palace