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Garaventa has built an 80-passenger reversible aerial tramway not far from Antalya on the Turkish Riviera. The tram operates all year round p.8

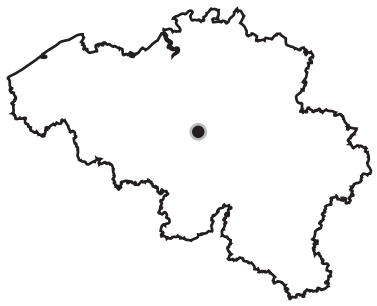
At the Walibi entertainment park in Belgium, the world's first Mountain Glider has met with an enthusiastic response from young and old alike p.2

Doppelmayr®

Magazine for
Customers and Employees

Belgium has the world's first Mountain Glider

The Walibi entertainment park near Brussels in Belgium[1] has added a new ride to its list of attractions: It now boasts the first Mountain Glider worldwide.



June 16, 2007, was the day it all began. Since then, visitors to the Walibi Park have been able to fulfill one of man's oldest dreams and experience a bird's eye view of the world.

Breathtaking launch ...

The very start of the adventure already takes your breath away! The four-seater carriers, akin to those used on a chairlift, are transported vertically up the 55 m launch tower at a speed of 5.5 m/s.
Two lifting units are used for this purpose. As one carrier is transported up the tower, the empty lifting unit travels back down to the bottom. In the middle of the tower, each of the two transport arms swings outwards slightly to allow the carriers to pass each other. At the same time, the carrier is rotated through 110°, giving the passengers an impressive panoramic view of the site.

... high-speed flight

The actual trip then begins along a circular route, covering over 700 m and reaching a maximum speed of over 70 km/h. The five towers which support the track are also used for flight elements: One tower is designed as a corkscrew with 720° helix, while others feature camel backs to ensure a thrill-packed ride.
The design of the installation provides passengers with the exhilarating sensation of high-speed flight as they glide along the track. The carriers swing forward and backward as well as to the side, avoiding uncomfortable laterally acting forces. The fact that a lap bar is sufficient to ensure passenger safety and the seats are open accentuates the illusion of flying.

Mountain Glider Vertigo	
Transport capacity	800 PPH
Trip time	1.6 min
Max. speed	74 km/h
4-passenger chairs	8
Interval	18 s
Track length (circular route)	720 m
Launch tower height	55 m
Towers	5

Fun parks and mountains

The Mountain Glider is at home in two worlds: on the one hand in the amusement park and on the other as a tool to provide an additional fun element to the tourist attractions of mountain resorts.

Long and intensive development phase

It all began back in 1998 with the idea to create a new ride installation featuring a carrier which glides downhill on a steel rope. A long period of time was to elapse between the initial idea and inauguration of the Mountain Glider as the "Vertigo" ride in the Walibi Park. This was in no small part due to the major emphasis which Doppelmayr always places on safety and reliability. Two test tracks were built and countless trials performed before the project became reality.
The safety system is a prime example of the great care which Doppelmayr invested in this, as in all innovations. To prevent a collision, a central computer monitors and controls the distance between carriers[2]. What might sound simple is actually a real challenge in view of the many parameters – including track inclination and gusts of wind – which can influence travel speed along individual sections of the track.

[1] The owner is CDA, Europe's biggest ski resort operator. CDA also has nine entertainment parks in Europe.
[2] Each carrier is equipped with radio equipment and three independent braking systems.

The Mountain Glider is also suitable for all-year operation in mountain areas. In addition, it can be integrated into the existing ropeway infrastructure and help to improve capacity utilization in both summer and winter.

Innovation safeguards technology leadership

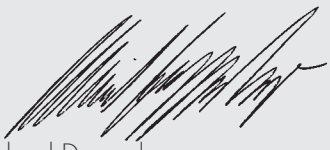
In the ropeway sector, the Doppelmayr/Garaventa Group ranks as quality and technology leader worldwide. That is very gratifying but, at the same time, neither a matter of course nor a reason for us to rest on our laurels.

Our position as technology leader calls for constant efforts at improvements and new ideas as well as ways of implementing them. Technical feasibility alone is irrelevant; only the benefits of an innovation can determine whether it can create value for the ropeway operator and/or user.

Such benefits can cover a wide range: simple operation, high availability, ride comfort for ropeway users, compliance with all the applicable codes and the very latest standards, a favorable cost-benefit ratio, etc.

Many of the resulting innovations attract huge media interest such as the seat heating for chairlifts or the big wheels in St. Anton. Others, such as the RPD system for detecting rope position, could even be termed milestones in ropeway technology. In internal processes, manufacturing techniques and organization, innovations are also constantly being driven forward to optimize and adapt the entire value chain in line with the requirements of our customers.

A great deal of hard work goes into all these new developments. It is therefore very important to me that employees in all sections and departments should enjoy the process of "innovating". This will ensure that we win the recognition and confidence of our customers, and ultimately that acknowledgement will motivate us to continue to achieve our very best performance.



Michael Doppelmayr

Whistler Blackcomb

The Peak to Peak Gondola will be used all year round, primarily by skiers, hikers and mountain bikers. The installation has a three-kilometer-long span and its height above valley floor is greater than New York's tallest building. Work on the foundations was begun in May 2007. The towers are to be installed from September 2007 onwards. The official grand opening is planned for December 2008.

The world's longest 3S gondola

Whistler Blackcomb is adding a gondola lift to its long list of superlatives: the longest 3S installation worldwide with the highest distance above a valley floor. Completion is scheduled for 2008.

Whistler Blackcomb can be reached via the Sea-to-Sky Highway in just under two hours from Vancouver and in four hours from Seattle. While Vancouver is the official Olympic City for 2010, the Alpine and Nordic skiing competitions as well as the bobsleigh, luge und skeleton events are to be held in Whistler. Spectators and athletes alike are looking forward to the new 3S tri-cable gondola which will cover a total distance of 4.4 kilometers linking the two mountains Whistler and Blackcomb – hence the name "Peak to Peak". The lift will feature the world's longest free span of 3,028 m and reach the highest vertical point ever over Fitzsimmons Creek at 415 m.

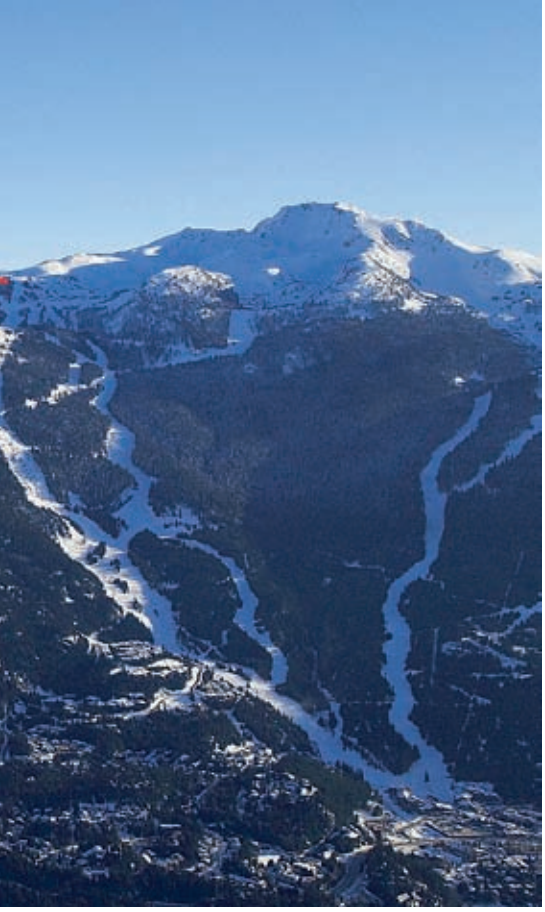
The great benefit for skiers will be the rapid connection between the two ski mountains provided by the new lift. Currently, it is not possible to reach the opposite mountain without first descending to the valley.

The fact that Intrawest Corp., one of the biggest players among North America's ski resort operators, should select a Doppelmayr CTEC 3S gondola did not come about by chance. Once the decision-makers from Intrawest had come to the conclusion that the world's biggest reversible aerial tram in Les Arcs would not be viable for their application and had seen the 3S in Kitzbühel for themselves, the choice became clear. In April 2005, the mega project was then announced to the press.

An engineering study was performed by Doppelmayr, followed by a break in proceedings due to a change of ownership at Intrawest, and finally, in February 2007, the project was given the go-ahead. Intrawest is now taking care of the civil engineering work, while Doppelmayr CTEC is responsible for the actual ropeway equipment.

Novel tower design

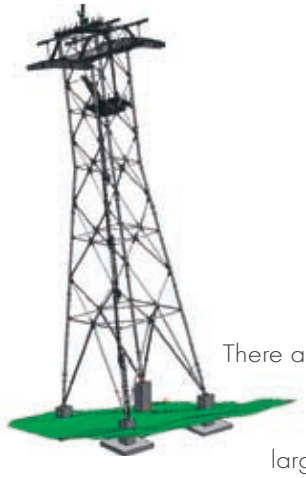
The new tubular lattice towers are being used for the first time on this project.



Ian Robertson

Stuart Rempel, Sales & Marketing (right), Doug Forseth, Operations: "The 3S gondola will consolidate our position as North America's number one ski resort."

28-TGD Peak to Peak	
Capacity/direction	2,050 PPH
Trip time	10.4 min
Speed	7.5 m/s
Cabins	28
Interval	49.2 s
Inclined length	4,363 m
Vertical rise	36.2 m
Towers	4
Drive	Whistler/Bottom
Tension	Blackcomb/Top



There are four towers in total, the two biggest are 65 m in height. The largest rope span will have a rescue ropeway in view of its huge ground clearance. The rescue carrier reaches the cabin by gravity and docks on. Once the passengers have evacuated from the cabin, the carrier then undocks and is pulled back to one of the towers by means of a rope winch. From there, the passengers are lowered to safety. The winch drive is located on the towers.

A state-of-the-art, radar-supported OCAS (Obstacle Collision Avoidance System) will be fitted to the towers to warn approaching aircraft of the ropes crossing the valley in their flight path. The first stage will consist of flashing stroboscopic lights. If the pilot still fails to react, a warning will then be broadcast on all radio frequencies.

Doppelmayr CTEC – the best choice

Expectations are high for the 3S Peak to Peak Gondola. Stuart Rempel, Senior Vice President of Sales and Marketing, is keen to highlight the benefits:

- Improved access to terrain – today, only 12 percent of guests ski both mountains in a day.
- Less congestion at the base and on village streets.
- Better distribution of skiers throughout the terrain.
- Consolidation of Whistler Blackcomb's position as one of the world's top resorts.
- Positive economic impact for the entire resort community.

Doug Forseth, Senior Vice President of Operations, explains why this Doppelmayr lift was selected: "As a fundamental principle, we expect a ropeway supplier to meet all code requirements and to provide an exceptional level of after-sales parts and service. Our reasons for choosing Doppelmayr CTEC for the Peak to Peak project are quite simple: First, Doppelmayr CTEC meets these criteria, and second, they were the only supplier able to provide 3S technology and the lift carrying capacity required to make our project viable."

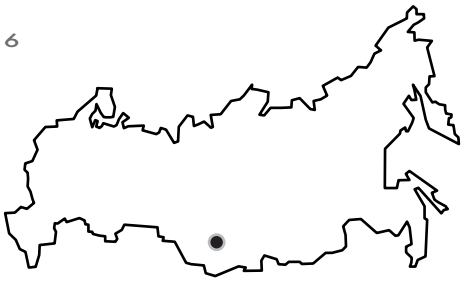
He also sees Doppelmayr as a world leader in terms of

- their strong commitment to ongoing R&D and
- innovative ideas in ropeway transport as well as
- their high-quality products and excellent after-sales service.

In Doug Forseth's opinion, Doppelmayr CTEC has a clear edge over competitors in these areas, and has done for some time. That's why Whistler and Blackcomb have been using Doppelmayr systems for 20 years. To date, Doppelmayr has built 15 lifts in the area.

And when asked what effect the quality of the lifts has on the image of the region, Doug replies: "Working with a world leader in ropeway technology has had a big influence in enabling us to maintain our position as number one in our industry and in turn has a very positive influence on the quality of the guest experience."

Combined lift installation in Sheregesh



Sheregesh in the Western Siberian coal-mining region of Kemorovo is well known throughout Russia as a ski resort. In spring 2007, a new 6/8-CGD went into operation there. This is Russia's first combined lift installation.

Sheregesh lies in the foothills of the Altai mountain range. For 30 years, this region has been the top address for Russia's alpine sports enthusiasts thanks to reliable snowfall, challenging slopes and a well-equipped infrastructure for competitive sports practitioners.

However, the quality of the region is not only acclaimed amongst the more competitive visitors. Every weekend sees skiers arrive in special trains organized by the Trans-Siberian Railway as well as in buses from Novosibirsk and cities in the surrounding area. In the meantime, the construction of hotels and private accommodation is proceeding rapidly. The rising numbers of visitors were no longer content with the outmoded lifts dating back to the Soviet era. They wanted to see fast, modern lifts offering better ride comfort.

The customer was well aware of what was needed in the region: a lift installation which would deliver performance first and foremost, but also optimally meet the expectations of the guests.

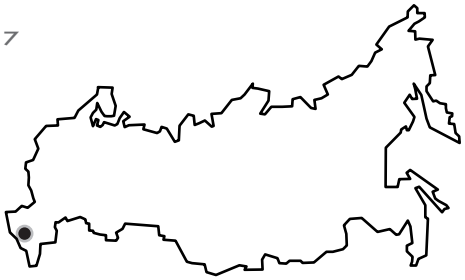
Only a Doppelmayr combined lift could fit the bill. In Russia, the Doppelmayr brand stands for top technical performance, and a combined lift was something which the country had never seen before.

Furthermore, chairs are better suited to those with no time to waste, in other words ski racers who want as many descents as possible and don't want to remove their skis. The more leisurely skiers, on the other hand, all prefer the cabins. Equally, the importance of cabins is not to be underestimated in a climate of low temperatures and biting winds. In fact, skiing at 20 degrees below zero is quite common in this area. On peak days, up to 12,000 skiers can be found enjoying the slopes.

6/8-CGD Sheregesh	
Transport capacity	1,000 PPH
Trip time	6.5 min
Speed	5.0 m/s
Cabins/chairs	10/27
Interval	25.2 s
Inclined length	1,700 m
Vertical rise	478 m
Towers	13
Drive	Top
Tension	Bottom

The 6/8-CGD in the sport center Sheregesh acts as a feeder into the area where skiing takes place. While the existing infrastructure includes a large number of chairlifts and surface lifts, the plan is to provide a boost to summer tourism – and the new combined lift is ideally suited to that objective.

Gazprom lifts in Olympic region



Gazprom is the world's largest producer of natural gas. In the Olympic ski region of Sotchi, the corporation is building a tourist resort where six Doppelmayr lifts are now in operation.

Eight ski areas are located in the outlying regions around Sotchi, which is to host the XXII Olympic Winter Games in 2014. One of these is Krasnaya Polyana, which is being developed by Gazprom. Ski trails, lifts, parking lots, hotels, restaurants and leisure amenities for winter and summer tourism are all under construction. They form the core of phase one in a two-stage expansion project for Krasnaya Polyana. This phase will provide capacity for 7,500 skiers a day.

As well as providing uphill transportation for skiers using the adjacent slopes, the 8-MGD Lift A takes skiers from their hotels into the actual ski area. From here, the other lifts are interlinked by the various ski trails: a 6-CLD, a 4-CLD, a 4-CLF and two platter lifts. Doppelmayr was awarded this large project in the face of tough competition. Ultimately, it was the excellent image of the Doppelmayr brand which tipped the scales: Doppelmayr also stands for top quality and outstanding performance in Russia. In addition, Doppelmayr's SKADO plant in Samara on the River Volga is seen as an excellent service center.

Krasnaya Polyana	8-MGD Lift A	6-CLD Lift F	4-CLD Lift B	4-CLF Lift D	1-SL Lift E1	1-SL Lift C
Transport capacity PPH	2,000	3,000	2,400	1,000	700	704
Trip time in min	9.4	5.6	3.6	8.9	4.4	2.8
Speed in m/s	6.0	5.0	5.0	2.3	2.4	2.0
Carriers	78	93	70	75	105	67
Interval in s	14.4	7.2	6.0	14.4	5.1	5.1
Inclined length in m	3,015	1,581	977	1,230	638	333
Vertical rise in m	889	526	197	192	66	26
Towers (number)	19	14	10	11	6	4
Drive	Top	Top	Top	Top	Bottom	Bottom
Tension	Bottom	Bottom	Bottom	Bottom	Top	Top

German Greff, Minister for Economic Development (right), and Aleksandr Tkatchev, Governor of the Krasnodar Region (in which Sotchi lies), were extremely pleased with Doppelmayr's work.

The 8-MGD takes skiers from their hotels into the actual ski area.

From the Mediterranean shore to the snow-covered mountains

Garaventa has built an 80-passenger aerial tramway on Mount Tahtali, not far from the Turkish holiday metropolis of Antalya. The idea behind this project was to bring the sea and the snow-covered mountains together.

The 2,365 m high Tahtali Dagi dominates the landscape surrounding the holiday resort of Kemer on the Turkish Riviera.
The mountain is topped by a shining cap of snow and ice from December into April and is a magnificent sight to behold from the sea. This area provides visitors the opportunity to swim during 11 months of the year, while Mount Tahtali offers enough snow for a four-month skiing season. The region is also a popular destination for hikers. The mountain lies on the edge of the Olimpos Beydaglari Milli Parki (national park). A restaurant with panorama terrace can be found at the upper terminal of the tramway and is open all year round.
Antalya's airport, which handles 10 million passengers a year, is not far away. The region offers 300,000 beds. It is not surprising, therefore, that the idea of building a ropeway to access the mountain generated a great deal of interest. The project was realized by an international consortium which acquired the rights to use the mountain for 29 years.

Rough terrain, long rope spans, large ground clearance

The technical realization of the installation proved to be a great challenge. The tramway itself is a highly impressive feat of engineering with a length of 4.3 kilometers, a vertical rise of 1.6 kilometers, four towers (one of which is 55, another 60 meters in height) and two very long rope spans with a ground clearance of 330 meters.
A two-section material ropeway had

The new 80-passenger tramway provides access to an idyllic landscape on the Turkish Riviera.

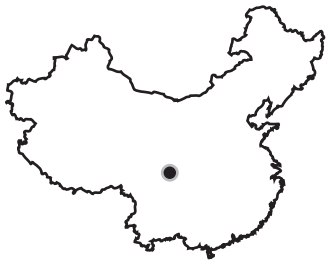
to be erected to carry out the construction in rough terrain. This ropeway was used to transport 3,700 m³ of concrete, 4,500 m³ of water, 420 tonnes of steel and 8,600 tonnes of gravel to the line structures and to the upper terminal. Garaventa had between ten and sixteen fitters in action at any one time, who often spent weeks on end at the remote camp.

First reversible aerial tramway without track rope brakes built to CEN standards

This installation is the world's first tramway without track rope brakes built to CEN standards. The area's high humidity can cause severe icing in the winter. In addition, it is exposed to storms which can reach up to 240 km/h. This meant that the ropes had to be generously dimensioned with diameters of 51 mm and 38 mm. The tramway has its own independent power supply. Particular expertise was required when it came to adjusting the power supply to reliably cope with the load fluctuations which occur within seconds when the cabin passes over the tower, without causing a breakdown of the internal power network.

80-ATW Tahtali Dagi	
Transport capacity	470 PPH
Trip time	9.2 min
Max. speed	10 m/s
Speed over towers	7 m/s
80-passenger cabins	2
Stopping time in terminals approx.	1 min
Inclined length	4,350 m
Vertical rise	1,637 m
Towers	4
Drive 526 kW	Bottom
Haul rope tensioning	Top
Track rope tensioning	Bottom
Fixed track rope anchoring	Top
Altitude of lower terminal platform	726 m
Altitude of upper terminal platform	2,363 m

Tramway with views of the eight thousanders



On the Holy Mountain of Emeishan, in China's Sichuan Province, Doppelmayr/Garaventa has replaced a Japanese reversible aerial tramway with a modern, 100-passenger installation providing almost twice the transport capacity. The increased capacity was urgently needed because up to now over a million passengers a year had been carried – and that was nowhere near sufficient.

At 3,099 m Mount Emeishan is the highest of the four sacred mountains of Buddhism in China and offers a magnificent view of Tibet's eight thousanders. At the summit is a 30 m high, golden statue of Buddha, surrounded by three temples in gold, silver and bronze. The trek from the Baoguo Si monastery at the foot of the mountain to the summit takes pilgrims two days and consists of stony paths and steep steps. A more comfortable option is to take the bus direct to Jinding at over 2,500 m and from there the trip to the summit can be made by tramway. (Altitude of upper terminal platform: 3,052m.)

The customer for this project was Emeishan Tourism Co., Ltd., which runs hotels and tourist transport operations. Garaventa supplied the tramway equipment, Doppelmayr took care of the electrical engineering, Doppelmayr China provided the interface to the customer and was responsible for local project handling. The contract also included the engineering for the foundations. Local contractors performed the installation which was coordinated by Doppelmayr and Garaventa.

The Emeishan-Jinding installation is a two-track reversible aerial tramway with 100-passenger cabins. The travel speed of 10 m/s provides a transport capacity of 1,200 passengers an hour. Each track consists of two track ropes which are anchored on concrete bollards in the terminals. The drive is located in the lower terminal, the haul rope tensioning system in the upper terminal. The tramway has an inclined length of 1,160 m and no tower on the line. For this reason the two hangers are constructed in symmetrical design. Each of the 16-wheel carriages has four track rope brakes which act on both track ropes in the event of haul rope failure.

The climatic conditions on site posed a particular challenge for installation and operation. The cold and very humid atmosphere leads to persistent icing on the tramway in the winter. The phenomenon which gives the landscape a magical appearance to the casual onlooker ("sugar-coated" trees, etc.) regularly leads to difficult and labor-intensive work for tramway operations. Despite all the difficulties, the tramway was completed one month ahead of the planned start-up, and a year after the contract was awarded.

100-ATW tramway Jinding. Emeishan Tourism Co. Ltd. can now boast the fastest and most leading-edge reversible aerial tramway in China. The tram is a product of the Doppelmayr/Garavanta Group: The tramway technology was supplied by Garaventa, the electrical engineering by Doppelmayr and the cabins were supplied by CWA. Garaventa was responsible for the installation.

100-ATW Emeishan-Jinding	
Transport capacity	1,200 PPH
Trip time	3.2 min
Max. speed	10 m/s
100 +1-capacity cabins	2
Stopping times in terminals approx.	1.8 min
Inclined length	1,162 m
Vertical rise	504 m
Drive 591 kW	Bottom
Haul rope counterweight	Top
Fixed track rope anchoring	Top + Bottom

4/8 combined lift for the family ski resort of Pettneu

In August, a lift equipped with gondolas went into operation in Pettneu, Austria, as the first phase of a new 4/8 combined lift. This gives Pettneu the perfect means of transportation for the ski resort and for the trip up to the Lavenar Hotel, and enhances its credentials as a particularly family-friendly destination for vacationers.

Pettneu describes itself as being "small, but offering all you need. The Arlberg's sunniest and most congenial family ski resort. The best address for vacations with the kids – and all in a location with plentiful snow at altitudes extending to over 2000 m."

Feeder for a hotel and the other lifts

The purchaser of the 4/8-CGD Lavenar was lift operator and proprietor of the hotel of the same name Armand Windisch. The hotel stands above the village at the start of the actual skiing area. This is where the top station is located and from here skiers have access to all the other lifts: a double chairlift, a T-bar and a platter lift. The new installation replaces an old single-seater chairlift dating back to 1964. Lift operation was closed down in 2005, but the taxi service to the hotel and to the lifts had not proved to be very successful in the winter, and maintaining the road was costly.

Armand Windisch rates the quality of Doppelmayr lifts highly on the basis of many years of experience. Deciding once again in favor of Doppelmayr for the new ropeway was therefore not difficult.

Pettneu's guest structure was the main reason for opting for a combined lift: Children, novice skiers and those who prefer a leisurely pace like to use the gondolas; the more energetic skiers, who don't want to lose time removing their skis, go for the chairs.

The lifts belong to Pettneu/Arlberg GmbH, which Armand Windisch founded in 2006 having attracted another four shareholders. The new company is also investing in ski trail construction and snow-making equipment.

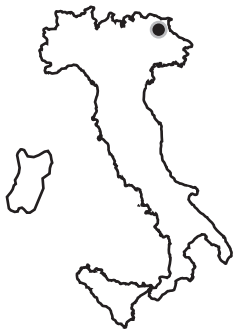
The new lift will obviate the need to use the access road to the hotel in the winter. As in the past, the road will be converted into an illuminated toboggan run at night, enabling guests to ride down to the center of Pettneu.

4/8-CGD Lavenar	
Transport capacity	1,800 PPH
Trip time	3.5 min
Speed	3.0 m/s
Cabins + chairs	18 +18
Interval	12 s
Inclined length	470 m
Vertical rise	162 m
Towers	5
Drive	Bottom
Tension	Bottom

The 4/8-CGD Lavenar will encompass three expansion phases: Initially, it will be a gondola lift with 12 cabins and two freight carriers. Phase two will take it to 18 cabins and two freight carriers, and phase three will see the ropeway equipped as a combined lift with 18 cabins and 18 chairs.

An institution among South Tyrol's lift operators

"Under Italian law, I could have retired 12 years ago," he grins; but he's not even considering it: Gottfried Beikircher, 61 years young, has been Managing Director of Speikboden AG, the biggest ropeway operating company in South Tyrol's Ahrn Valley, for the past 32 years. And he admits to having been a Doppelmayr fan for just as long!



Gottfried Beikircher already had a 16-year professional career behind him when he was recruited by Speikboden AG in 1975. At the time, many of his friends shook their heads: How could anyone swap a safe job as head of department in the cement industry for the (then) insecurity of a small ropeway operator? But, with hindsight, Beikircher is convinced that he made the right decision.

The misgivings of well-meaning friends were understandable in view of the fact that Speikboden AG had only been established five years previously, namely in 1970. The first ropeway was built in 1971. But Gottfried Beikircher was to prove himself as a man who got things done. With his enthusiasm, imagination and willpower, he was without doubt instrumental in bringing about the upswing in tourism in the Taufer Ahrn Valley.

Today, the Speikboden ski area has seven lifts: one surface lift, one fixed-grip chairlift, three detachable chairlifts with bubbles and – as from next season – two gondola lifts. The resort now has a transport capacity of 15,000 passengers an hour; when Beikircher started out, the figure was 3,000.

Gottfried Beikircher can quote hard facts which bear out the unswerving expansion path that enabled the Speikboden region to become a well-known summer and winter resort for families. And it certainly wasn't megalomania which motivated Beikircher and his colleagues to adopt this strategy, but the realization that in the tourist industry you have to attain a certain size if you are to maintain your position in the market and develop a desirable brand. As he goes on to point out, this was also necessary to stem the population drain in the valley. The knock-on effect of the tourist boom has been to enable other business sectors to flourish.

As far as Gottfried Beikircher's field of interest, i.e. ropeways, is concerned, experience has taught him that he can rely on Doppelmayr. The lifts are technically faultless, the service outstanding and the collaboration when adapting new lifts to suit new requirements is excellent.

Constant adaptability is called for if you want to keep step with the expectations of guests in contemporary vacation and ski resorts.

Needless to say, the operating company does a lot more than just building lifts.

Built in 2005, the 8-MGD Speikboden with its slightly curved ropeline stands out among South Tyrol's gondola lifts for its particular design features.

They also create footpaths for hikers and leisure amenities.
However, ropeways are simply the core element in such areas. Since the very beginning of his career in the lift business, Beikircher has always placed his bets on Doppelmayr and has never been disappointed.

Latest achievement: The 8-MGD Alm

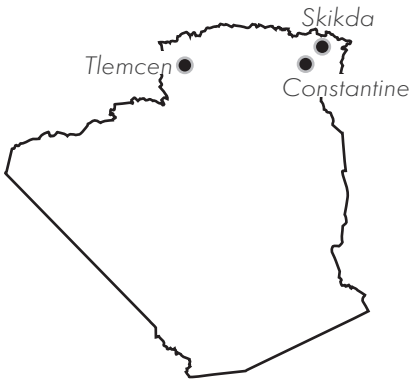
His latest project, the "Almbahn", clearly shows his feel for lucrative market niches. In Italy, the statutory regulations relating to children under the age of eight and less than 1.25 in height are particularly strict for lift operators. This makes a gondola lift the ideal solution for comparatively short stretches. The security of a cabin is also reassuring for parents – and many adults enjoy the ride comfort. (Moreover, the new lift is twice as long as the fixed-grip quad chair which it replaces, while the trip time is nonetheless significantly shorter).
The special flair for children and family friendliness is a central theme around which the valley's entire tourist offering centers. This is a feature which is highly appreciated by the visitors from Italy (who account for roughly half in the summer), Germany (who form the majority in the winter), the Benelux states, Eastern Europe and even Switzerland. The area attracts an exceptionally high number of returning guests. They are all delighted with the comfort and safety of the Doppelmayr lifts.
Speikboden itself has no ropeways from any other manufacturer.

MD Gottfried Beikircher, Speikboden AG: "Doppelmayr is always at the leading edge of technology and offers top quality. At the same time, I also value their on-time deliveries, their support and the accompanying services."

8-MGD ALM	
Transport capacity	2,400 PPH
Trip time	2.1 min
Speed	5.0 m/s
Cabins	29
Interval	12.0 s
Inclined length	653 m
Vertical rise	150 m
Towers	7
Drive	Top
Tension	Bottom

Urban ropeways for three Algerian cities

Garaventa is building gondola lifts for urban transport in the Algerian cities of Constantine, Skikda and Tlemcen. Start-up is scheduled for the end of 2007.



Tlemcen, with a population of 170,000 inhabitants, lies in the west of Algeria, while Constantine (750,000 inhabitants) and Skikda (189,000 inhabitants) are located in the east of the country. All three cities are growing rapidly and, like all cities with an ancient tradition, their centers consist of narrow, winding streets and alleys. In some cases, the cities are nestled on the steep slopes of the Atlas Mountains, with little chance of widening their narrow roads because of the close proximity of the buildings and the difficult topography. There is nonetheless an urgent need to expand the road networks in order to keep the constantly and rapidly growing volumes of traffic flowing.
An alternative is to extend the public transport network. However, buses and trams quickly hit limitations. There is simply not enough space available. This is where an aerial ropeway can fit the bill.

Ropeways are a long accepted means of public transport in urban areas

In Algeria, ropeways have long been accepted as a means of public transport. Von Roll Seilbahnen AG – a company which was subsumed by the Doppelmayr Group in 1996 – built 6-MGDs in the capital Algiers and in Oran 20 years ago; the latter was modernized in 2006. Contracts for projects of this kind were awarded by EMA (Entreprise Métro d'Alger), a state-run enterprise founded by the Ministry of Transport.

High wind stability is important

EMA had several quotations for 8-passenger gondola lifts on the table as well as the 15-passenger gondola from Doppelmayr/Garaventa, but it was Doppelmayr/Garaventa which was the best placed to fulfill the specification criteria. Furthermore, the heavier cabins made it possible to achieve greater wind stability.
The basic pattern for originating and terminating traffic is the same in all the cities: The intermediate stations are located in the center, while the terminals at either end of the line serve urban access, residential or local recreation areas. The ropeline itself has minimal impact on the cityscape.
For historical and practical reasons, Garaventa Switzerland was entrusted with the management of these projects within the Doppelmayr/Garaventa Group. The major factor in this decision was above all the company's in-depth knowledge of the country and its people.

Doppelmayr/Garaventa to deliver turnkey installations

Garaventa is the general contractor for these lifts. The construction work was awarded to an Algerian company, as were the architect's services for the terminal design. The customer secured the availability of the tower locations – which in some cases involved redirecting cables, water supply and drainage pipes, etc. The desert climate presents a particular challenge: At night the temperature can drop as far as minus 10 °C, while daytime temperatures can exceed 45 °C.

	Constantine	Tlemcen	Skikda
Transport capacity in PPH	2,400	1,500	2,000
Trip time in min	7.6	7.4	8.3
Speed in m/s	6	6	6
Interval in s	22.5	36	27
Stations	3	3	3
Gondolas	40	25	37
Inclined length in m	1,555	1,590	1,842
Vertical rise in m	147	300	273
Towers	10	12	10
Drive	Top	Top	Top
Tension	Bottom	Bottom	Bottom

Heat and desert sand as the prime challenge

This means that special lubricating grease has to be used, for example. Evener frame bearings have to be carefully covered to protect against the fine-grained dust from the ergs, the sand deserts of the Sahara, as the combination of lubricating oil and sand would act like an abrasive. The CWA cabins are fitted with fans for active ventilation. They also have a PA system and lighting as the lifts operate from 6 am to 11 pm.
The ropeways are certified to CEN by the Algerian Verital office.

The UNI-G stations harmonize with the terminal buildings designed by Algerian architects. The renderings show the upper terminal, intermediate station and lower terminal in the following order: Constantine is the first three pictures at the left;
Skikda is shown opposite at the right; Tlemcen is the bottom row.

Mexico City Airport: CABLE Liner Shuttle is ready to operate

On April 30, 2007, less than two years after the order was placed, the CABLE Liner Shuttle was ready to run at Mexico City's hugely expanded airport. This audacious feat was achieved by the joint venture comprised of DCC – who supplied the system technology – and ICA, one of the biggest construction companies in Mexico.

Mexico City Airport is the aviation hub for Central America. Up to now, it has handled 20 million passengers on an annual basis; with the completion of the new Terminal II that figure is set to climb to 33 million.

The expansion was both necessary and complex: Mexico City lies in a valley basin at an altitude of 2,270 m, surrounded by an imposing mountain range dominated by the 5,462 m active volcano Popocatepetl. The city of 20 million inhabitants is built on a lake which was drained centuries ago. As a consequence, the ground is gradually sinking. This situation posed a challenge for the design engineers of the CABLE Liner Shuttle, which they resolved by allowing the concrete columns supporting the elevated steel guideway to adapt to the anticipated subsidence.

Since construction plots are few and far between in the Greater Mexico City area and no land is available to extend the airport, capacity has been increased by reorganizing the airport infrastructure. This also meant that work had to be carried out simultaneously on a large number of projects, which included an additional pier finger terminal with 23 docking positions, a 350-bed hotel, parking garages, hangars, deflectors, fuel lines, circulation and access routes, etc. Up to 1,800 workers commuted to and from these building sites on a daily basis.

Space restrictions

Against this background, there was little space for the guideway. Only a single track was possible and had to take a route which was in part landside outside

the airport, in part airside on the strictly guarded airport grounds between the deflectors and security barriers. As the three-kilometer-long guideway passes from one side of the grounds to the other, just in front of the two take-off and landing strips, the alignment had to be taken down to ground level over a length of approx. 1000 m. In addition, a working height of 6 m could not be exceeded during flight operations.

Despite this and a series of other restrictions, the guideway was completed in four months! It took just 22 months in total from the contract award to the handing over of the installation for operation.

Mexico City's CABLE Liner Shuttle has one train consisting of four carriages (from CWA), each holding 26 passengers, and can carry 537 passengers with hand luggage per hour in each direction. Expansion to a six-carriage train and a capacity of 806 passengers per hour and direction is also possible.

The drive is located in Terminal II. This also houses the wash bay and service station. The compact construction enabled financial as well as space savings to be made.

The train is unmanned. The track, the building and the train are monitored by CCTV. In order to safeguard the power supplies, the power for train operations is provided by two independent suppliers via separate lines and transformers. The drive is designed so that 80% of capacity is still available even if one of the two motors fails. Critical wear parts are stored on site to ensure immediate availability.

DCC is also operator

DCC is also taking care of operations. 13 employees work in 3 shifts and 99.0% availability is guaranteed. One day a year is scheduled for inspection of the system.

CLS Airport Mexico City	
Transport capacity	537 pphpd[1]
Trip time	4.4 min
Stopping time in the stations	60 s
Max. speed	12.5 m/s
Length	3,025 m

[1]persons per hour per direction

The CABLE Liner Shuttle at Mexico City Airport fulfills all the requirements to be met by a modern people mover in spite of the limited space available.

Ropeway for power station construction

In 2006, Garaventa built a remarkable ropeway for Cleuson-Dixence Construction in the Swiss canton of Wallis. It is being used for a general overhaul of the power station pipeline from Lac des Dix to the turbine station Bieudron. The ropeway can carry loads of up to 15 tons. As an alternative, it has a 30-passenger cabin to transport workers.

Construction of the Grande Dixence reservoir at an altitude of 2,365 m was begun in 1926. Today, head race tunnels lead to four power stations. The most recent and biggest of these, Bieudron, went into operation in 1999. At the time, the pipeline was built with the same ropeway which has now been erected once again[1]. For environmental protection reasons, the ropeway was installed on a temporary basis for construction purposes and dismantled once the 1,882 m long pressure line had been completed.

In December 2000, this pressure line fractured. The EOS (Energie Ouest Suisse) took the immediate decision to overhaul the line. For this purpose, slightly narrower pipes are inserted into the 3.3 m diameter pipeline and encased with concrete.

The new pipes have an outside diameter of roughly 3.0 m, a length of 6 m and weigh 14 tons. In addition, winches to install the pipes, construction plant, concrete and other building materials have to be delivered.

The decisive factors in awarding the contract to Garaventa were the great reliability and the proven high availability of 99 percent. The first ropeway made almost 100,000 trips operating in 3-shift operation, mostly under full load, without any failure-induced interruptions.

Garaventa also responsible for operations

The new contract encompasses the construction and – unlike the previous installation – also operation of the ropeway. The towers are designed as three-legged lattice towers. They consist of cubes with a side length of 3.5 m. These are first mounted one on top of the other, thus forming parallel vertical members. At approximately four-fifths of the final height, the members are fixed to the main tower with hinges and then pulled apart.

In view of the fact that cutting a lane through the forest was not permitted, the towers had to be very high; the tallest tower has a height of 75 m. Installation was performed using a helicopter. Once the works have been completed, the ropeway will be removed.

The load-bearing capacity of the Tracouet material ropeway is the equivalent of a reversible aerial tramway for 187 passengers

[1]The towers, cabin, freight deck and track ropes from the old ropeway are being used again. The drive, control system, haul rope tensioning and the terminals are new.

15-ton Material Ropeway Tracouet	
Transport capacity/trip	15 t/30 P
Trip time	12.3 min
Speed	4.0 m/s
Inclined length	2,623 m
Vertical rise	940 m
Towers	5
Drive 435/673 kW	Top
Tension	Bottom

Focus on customer benefits

Doppelmayr's seat heating system for chairlifts was the sensation of the past few years in the industry. But what is now almost taken for granted[1] required complex development work.

The decision on whether the more extensive innovation proposals should go ahead is a matter for Doppelmayr's Management Board. The area of "Multiproject Management" has now been created to ensure that the necessary basis for decision-making is provided. The prime goal is to install a systematic process for the initial analysis and subsequently for the execution.

Customer benefits are the priority

The documentation produced is used to derive the benefits for the customer. It is only when a satisfactory answer has been provided to the question "What concrete advantages can our customers gain from the project idea?" that further development will be given the green light.
In the case of the seat heating system, the project manager was Elvis Music. He was able to build on the motivation of the team entrusted with development. And that was necessary because without the excitement of working on something exceptional, Music and Co. would certainly not have spent a large part of the record summer of 2003 – which is when the seat heating project was started – testing out heating mats and different systems for storing heat in cold chambers operating at subzero temperatures! With dogged determination they meticulously worked their way through the available options to arrive at the optimal power supply, heat storage and insulation materials. When the first prototype went into operation on the Saloberjet lift in Schröcken am Arlberg (Austria) in 2004,

Elvis Music coordinated the seat heating innovation project. "Once again, we have not only proven our technology leadership, but also demonstrated that we're in tune with the latest trends and can respond to them."

the wheel of development had turned full circle: Michael Manhart, Managing Director of Skilifte Lech – who had originally approached Doppelmayr with the concrete requirement for a seat heating system – tried it out, was delighted and immediately asked for five existing lifts to be equipped with the new product.

Intensive dialog with the customer

Despite all efforts at imitation, Music feels that Doppelmayr's technical edge is not in jeopardy, particularly in view of the fact that developing a seat heating system takes a lot of time, competence and engineering man-hours. "The system is complex," he explains. "It's not just a question of heating mats and power supply but also of the control system, the fine tuning of the carriers and the stations, the installation and a lot more besides." The experience gained with a large number of new installations and the cooperation with the lift operating companies has also led to continuous improvements.

[1] By the end of 2007, some 60 Doppelmayr lifts will be operating with seat heating

Heat-reflecting window panes significantly reduce solar heat gain in the cabin.

The secret of this Doppelmayr innovation lies in a special coating on the window panes. This allows a large part of the solar radiation to be reflected without impairing the transparency of the window pane.
On lifts with sputter-coated window panes of this type, the solar heat gain within the cabin is reduced. In the case of cabins with air-conditioning or forced ventilation, a considerable amount of cooling energy can be saved through the use of this new development.

Really cool: Anti-sun window panes which reflect infrared light will be available from Doppelmayr-Garaventa from summer 2008.

Polish ropeway conference in Wierchomla

... from June 20 to 22, 2007. Those taking part were mainly ropeway operators and representatives of ropeway authorities. Ropeway manufacturers, suppliers of snow-grooming equipment, vehicles and ticket systems, etc. presented their products and services.
The ski resort of Wierchomla is located in Southeastern Poland, near the city of Krynica-Zdrój.

How do you rate "WIR"?

This issue of "WIR" magazine includes a questionnaire. Please could we ask you to complete this and fax it back to the editorial team on +43 5574 75590. Your contribution will help us to make WIR even more attractive for our readers!
For info: WIR Magazine currently has a print run of 8,500 copies and is published in eight languages. Each issue is downloaded on average 7,000 times from the internet!
All returned questionnaires will be entered in a draw with a Doppelmayr surprise parcel as a small "thank you" for the lucky winner.

Go for Ski

Doppelmayr is sponsoring the "Go for Ski" project of the Professional Association of Austrian Cable Cars. The aim is to generate enthusiasm for skiing and snowboarding among Austria's seven to seventeen-year-olds. The promotion campaign includes:

- A CD-ROM for schools
- Provincial ski days for school children
- Activities related to safety
- Youth days; concessions on day passes; competitions.

After-Sales and Funitel provide the perfect rescue team

By the late evening of June 28, 2007, Mt. Parnitha National Park was in flames. 2,000 people at the Mont Parnes Casino Resort were cut off from the rest of the world when the road had to be closed off.
Nonetheless, within one and a half hours they were all brought down the hill to safety above the trails of smoke by the Doppelmayr Funitel which only went into service in spring 2006. For this operation, lift manager Panagiotis Karamertzanis took the precaution of phoning After-Sales in Wolfurt for advice.
But the evacuation is not the only thing which justifies the trust he places in Doppelmayr: To date, the Funitel has run up 10,000 hours in service – with 99.4% availability!

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Have your say about "WIR"

Dear Reader

You have just received the latest issue of our "WIR" magazine. "WIR" provides information for customers and employees around the globe and is currently published in eight languages with a total print run of 8,500 copies. The online version of each issue is downloaded around 7,000 times.

We want to use this magazine as a tool for continuously improving the information we provide about products and services of the Doppelmayr/Garaventa Group. As one of our readers, you can make a valuable contribution to "WIR" magazine by letting us know your opinions and ideas!

Please complete the following short questionnaire and return it by e-mail or fax to the following:

E-mail: ekkehard.assmann@doppelmayr.com. Subject: WIR.
Fax: +43 5574 75590.

1. I am	☐ a customer	☐ an employee		☐ involved with ropeways
2. I read "WIR"	☐ in printed form	☐ online via the internet		
3. Visual design	☐ excellent	☐ good	☐ average	☐ poor
4. Readability of texts	☐ excellent	☐ good	☐ average	☐ poor
5. Choice of topics	☐ excellent	☐ good	☐ average	☐ poor
6. Frequency of publication (3 times a year)	☐ excellent	☐ good	☐ average	☐ poor

7. I read the articles closely	☐ strongly agree	☐ agree	☐ disagree	☐ strongly disagree
8. The articles are interesting	☐ strongly agree	☐ agree	☐ disagree	☐ strongly disagree
9. The mix of topics is good	☐ strongly agree	☐ agree	☐ disagree	☐ strongly disagree
10. The articles could be more detailed	☐ strongly agree	☐ agree	☐ disagree	☐ strongly disagree
11. More photos would be good	☐ strongly agree	☐ agree	☐ disagree	☐ strongly disagree

12. I have a particular interest in the following topics (several answers possible)
    - ☐ Ropeway projects worldwide
    - ☐ Ropeway technology and innovations
    - ☐ Training courses at Doppelmayr/Garaventa
    - ☐ After-Sales Service
    - ☐ Corporate information
    - ☐ I miss the following topics in "WIR" Magazine: .....
13. What I particularly like about "WIR": .....
    .....
14. My suggestions for improvement: .....
    .....
    .....

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