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# ITTAB 2010

The 60th International Conference of Technical Supervisory Authorities (ITTAB) was held in Lucerne/Switzerland on 26 - 30 September 2010.



The conference hall in the Hotel Palace in Lucerne

ITTAB is an event whose significance is often underestimated in the ropeway world. That is mainly because the ropeway manufacturers and operators are not involved; the conference is primarily reserved for the ropeway authorities. It offers a platform for an open discussion of technical and organizational problems confronting the supervisory authorities. As such it greatly helps reduce misunderstandings and differences of opinion between the various ropeway countries. That benefits the ropeway industry as a whole, as it ensures that decision makers have a higher standard of knowledge and understanding of the technical and organizational problems before measures are taken by the authorities.

This year's 60th ITTAB was attended by almost fifty persons from eighteen different countries. In the six decades in which ITTAB has been held every year without exception, the conference has become increasingly international in character. Today, in addition to representatives of most of the European ropeway countries, the event also attracts visitors from other continents, from countries like Argentina, China, Hong Kong and Japan.

## Accident reports and statistics

In the course of those sixty years, something of a traditional agenda has developed. After the usual round of introductions with the various delegations, the first working sessions are devoted to significant ropeway incidents and accidents. The various reports presented are a mutual source of valuable information for the monitoring activities of the authorities in their respective countries.

The same objective is served by the ITTAB accident statistics, in which accidents and incidents are listed on the basis of certain criteria. That enables delegates to draw comparisons with the situation in their own countries and to identify possible weaknesses in their monitoring activities.

## Special topics

Another important section of the agenda is devoted to defined topics and specific technical questions, which the delegations prepare in advance and submit for discussion, like the problem of approvals for upgrades and conversions, or questions of supervision relating to the interface between summer slides and lifts for returning the carts or toboggans to the top of the slide.

## Organizers

The 60th ITTAB was run by an organizing team comprising representatives of the Swiss Federal Office of Transport (FOT) and the Intercantonal Concordat for Ropeway and Ski Lifts (ICRS). And they deserve to be congratulated on the great job they did. Quite apart from the fact that the working sessions ran like Swiss clockwork, attendees were offered a standard of (5-star) accommodation in the conference hotel and a social program that left nothing to be desired.

## Social program

In the surroundings of Lucerne at the western end of the big lake called Vierwaldstättersee, there is no shortage of destinations

that are of great interest to any ropeway engineer.

The nearest mountain for some spectacular views is the Pilatus. The mountain lodge at just under 2,100 meters above sea-level was the setting for dinner on the evening of the first working day. Attendees were also treated to a presentation of a resort development project under the heading "Pilatus – fit for the future", including various construction works planned by the operating company Pilatus-Bahnen AG to further upgrade the mountain as a tourist destination. While the party used a gondola for the first stage of the ascent and a jigback for the second stage, the downhill ride was quite different – on the world's steepest rack and pinion railway. That was a highlight for every mountain railway fan! On the afternoon of the second day, the group was taken on an excursion to the construction site of the Limmern pumped-storage power plant. On the way there, the party made a detour to Sattel to ride up on the Sattel-Mostelberg gondola to the world's third longest pedestrian suspension bridge. The eight-passenger gondolas supplied by Garaventa have a very exciting feature: This is the only gondola worldwide in which the cabins revolve around their own axis twice during the ride, offering passengers a truly fascinating panoramic view of the mountain scenery. The pedestrian suspension bridge, which was opened in July 2010, is also proving a big at-



On the right, Reto Canale, Executive Director of the ICRS and chairman of the 60th ITTAB; on the left, Georg A. Kopanakis, Technical Director of the ICRS, who was also responsible for the smooth running of the projection system.



The rotation system on the cabin roof is set to cause the gondola to revolve around its own axis twice during the ride.

traction. Not all tourists are bold enough to venture onto the wobbly bridge, which is 374 meters long and crosses a deep gorge 60 meters below. The supporting structure is comprised of four 50 mm full-locked coil ropes, and the suspension for the open grid walkway and handrails is very elastic!



The suspension bridge at the upper station of the Sattel gondola is 374m long.

The main attraction of the excursion, however, was the 40t heavy-duty ropeway built by Garaventa for the Limmern power plant construction site. Although time was limited and the party could only inspect the bottom station of the installation, which has 90 mm track ropes supplied by Fatzer, they were duly impressed by the gigantic proportions of the components. Arno Inauen, CEO at Inauen-Schätti AG, is the project manager for the construction and operation of this ropeway. The installation is particularly interesting for its multiple carrier system. It comprises three connected carriages and hangers, with the bottom two used to transport materials in various carriers and the top hanger supporting a forty-passenger cabin.



Model of Fatzer's 90mm track rope for heavy-duty ropeways

On the actual construction site, the party were able to admire another miracle of modern engineering, which you do not get to see very often, in the form of a full-face boring machine for a tunnel leading from the valley floor to the underground powerhouse at the upper level of Limmern pumped-storage power plant. The tunnel has a diameter of eight meters and will accommodate a funicular with a payload of 240 tons, which will be used to transport the various components for the power plant.

The excursion closed with a visit to the Garaventa works in Goldau, which gave the group an opportunity to take a closer look at some interesting components for aerial trams and funiculars.

What would ITTAB be without the final gala dinner? That is now a tradition of the annual event, too. This year the location was the revolving restaurant at Stanserhorn. Again, the attraction for participants was not only the excellent culinary offering but also the ropeway engineering aspects of the tourism destination concept for Stanserhorn. That is interesting for its successful combination of tradition and visionary engineering, with a



Photos: J. Nejez

Bottom station of the first stage of Garaventa's heavy-duty ropeway on the construction site of the Limmern power plant



The visit to the Garaventa plant provided an opportunity to inspect the track rope brakes for the 240 t funicular for the Limmern power plant.

lovingly maintained funicular originally constructed in 1893 used for the first stage of the ride up to Stanserhorn and the jigback on the second stage now being replaced by an exciting solution with a cabriolet cabin called the Cabrio-Bahn. The most striking feature of this advanced system is a double-decker 60-passenger carrier with an open top deck for thirty passengers. The whole cabin is suspended in a frame with carriages running on two wide-gage track ropes. The haul rope configuration is based on the Funifor system, with the carrier haul rope sheaves located on the uphill end of the frame. The cabin itself is self-leveling. The new Cabrio-Bahn is due for commissioning in May 2012.

## Outlook

The 60th ITTAB will doubtless be remembered as a highly successful event by all attendees. The program, including all the excursions and social highlights, reflected the organizers' awareness of the need for the host country to focus on the central objective of ITTAB, namely continuous improvements to the safety of passenger transportation by rope. Next year, Austria will be hosting the 61st ITTAB in St. Anton am Arlberg. For 2012 Norway has offered to host the event, subject to the approval of the ITTAB executive.

*Josef Nejez*



Rotary boring machine for driving the tunnel for the supply funicular serving the Limmern power plant

## “The Renaissance of the Cableway”

Innovative urban passenger transportation systems from Leitner and Poma



Photo: J. Schramm

From the left: Martin Leitner, Michael Seeber, Anton Seeber and Klaus Prokopp presenting “The Renaissance of the Cableway” at the Leitner Technologies stand at InnoTrans in Berlin.

**Leitner Technologies** had a stand at this year’s InnoTrans, International Trade Fair for Transport Technology, in Berlin and on 23 September held a press conference to present what publisher Klaus Prokopp called “the first book of its kind worldwide targeted at transport planners and architects in the field of mobility”.

“The Renaissance of the Cableway”, published by Prokopp & Hechensteiner, is an interdisciplinary study of rope-hauled passenger transportation systems for the urban environment, with chapters devoted to history, engineering, architecture, and urban and mobility planning.

### Public-private partnerships in Perugia, Innsbruck and Bozen

Among much else, the book focuses on the MiniMetro in Perugia, the Hungerburgbahn in Innsbruck and the gondola serving the Ritten outside Bozen. These three projects, as Anton Seeber, author and CEO at Leitner Technologies, puts it, “are proof of the success of public-private partnerships. In the field of public transport, Leitner is happy to shoulder the responsibility in partnership with the public authorities.”

Anton Seeber takes the example of Perugia to explain why the local authority chose Leitner’s innovative MiniMetro system. In addition to a transport capacity of 3,000 persons

per hour and direction, the low operating costs were powerful arguments. The cars on the MiniMetro are controlled from a central operating room manned by just two people. The MiniMetro went into service in January 2008 and currently has an average rideage of 300,000 passengers per month. Anton Seeber places particular stress on the MiniMetro’s 99% availability.

### Architecture and aesthetics

The Perugia system also constitutes a successful synthesis of architecture and engineering. The stations and guideways were designed by Jean Nouvel (winner of the Pritzker Prize). In the meantime the MiniMetro has become

something of an unofficial hallmark of the city and is known locally as the “Linea Rossa” because of the red finish chosen for the guideway. Innsbruck has a new hallmark, too, in the form of the Hungerburgbahn designed by Zaha Hadid.

### MetroCables in Medellin

For Martin Leitner, the MetroCables built in Medellin, Colombia are a good example of how a townscape can be changed for the good. The first MetroCable went into service in 2004 as a link between a subway and a hill-top suburb. The aerial ropeway carries a million passengers a month, with revenue from ticket sales totaling some 7.6 million euros a year. Two more MetroCable installations were built in 2008 and 2010, and two additional lines are now in the planning stage.

### Airport shuttle in Cairo

Leitner is currently working on the completion of its Cairo Airport shuttle project in the framework of a contract worth 60million euros. The APM system links two airport terminals with a 1,857 m guideway. Rated capacity is 2,000 persons per hour. The system is due to be commissioned in the summer of 2011. Martin Leitner closed the press conference by pointing out that Leitner Technologies has the systems to solve a wide range of transport and traffic problems.

JS



The Cairo Airport shuttle (rendering) – There are more photos on pages 10 and 11.

Photo: Leitner

# **NEVEPLAST** ARTIFICIAL SKI SLOPES

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# San Francisco Bay Area Rapid Transit goes for a Doppelmayr solution.



Oakland Airport

DCC wins the biggest ever contract in the company's history for the Oakland Airport Connector.

of the contract, is worth USD 166 million. Construction work is due to begin at the end of 2010 and commissioning is scheduled for 2014. In addition, DCC was awarded a twenty-year operating contract worth a further USD 100 million. Along with the development and installation work, system operation is a core competence at DCC.

Bay Area Rapid Transit (BART), one of the biggest public transport operators in the San Francisco area, chose the APM offered by Doppelmayr Cable Car GmbH in the framework of the consortium to close a critical gap in the public transport system in the San Francisco Bay Area, namely the link between Oakland International Airport and Coliseum station in Oakland City.

The Cable Liner pinched loop system, with a line length of 5.1 km, will operate at a maximum line speed of 50 km/h (14 m/s) for a transport capacity of just under 1,500 persons per hour and direction. The system will have four trainsets of three cars each and when completed will form the backbone of the Oakland Hegenberger Corridor.

The decision to award the contract to DCC – in the face of fierce international competition – was strongly influenced by the uncomplicated and proven technology involved, the economics of the system and its minimal environmental footprint.

In addition to the systems recently commissioned in Las Vegas, USA, and Venice, Italy, DCC is currently working on two other Cable Liner Shuttles in Caracas, Venezuela, and Doha, Qatar.

**DCC Doppelmayr Cable Car**, a subsidiary of the Doppelmayr Group, has been awarded the contract to build a local transportation link in California, USA. The shuttle, called the Oakland Airport Connector, will form an integral part of the San Francisco Bay Area Rapid Transit System (BART), connecting Oakland International Airport with Coliseum station, which serves as an interchange for Oakland City. In collaboration with the Flatiron/Parsons consortium as the contractors for the construction work, DCC is to build a 5.1 km long APM (automated people mover) in the framework of a contract worth a total of USD 361 million. The ropeway engineering, i.e. DCC's share



Photos/Rendering: Doppelmayr

## FACT BOX

Client	Bay Area Rapid Transit
Contractor	Doppelmayr Cable Car GmbH & Co
Value of contract – construction	US\$ 166 million (EUR 122 million)
Value of contract – operation	US\$ 100 million (EUR 73 million)
Line length	5,100 m
System capacity	1,490 persons per hour and direction
Carriers	4 trainsets for 158 passengers each
Line speed	14 m/s (= 50 km/h)
Transit time	10.5 min (terminus to terminus)

**„For us, the contract for the Oakland system is proof of the client's confidence that our technology has the maturity needed for urban transport services. For the user, our rope-hauled systems are no different from other, much more expensive installations. The operator, on the other hand, benefits from the highest levels of safety and reliability combined with low initial costs and maintenance costs.”**



DCC's CEO Stephan Wabnegger

# Customized solutions Swiss-made

Marc Pfister, the owner of Gangloff Cabins AG, reports on the current state of his company's projects for 2010.



Photo: von Rotz

Delivering the funicular cars to the Parsennbahn in Davos

**In order to land** such spectacular contracts as the Ocean Express in Hong Kong or the elevator cars for the Eiffel Tower in Paris, Marc Pfister is constantly traveling around the world - and was recently to be seen at InnoTrans in Berlin, the world's biggest transport technology trade show.

At the beginning of September, the two recently completed funicular cars (110+1) for the second stage (Höhenweg – Weissfluhjoch) of the Parsennbahn in Davos, Switzerland, were carried up the mountain in a rare feat of haulage skill by von Rotz Seilbahnen AG using a special transporter called Castor & Pollux. The cars weigh approx.

20 tons, but their 18 meter length was the bigger challenge! The funicular cars refurbished for the centenary of the Niesenbahn have also been delivered and successfully commissioned. Work on the cars included the provision of barrier-free access and a new coat of paint. With a total length of 3,500 meters on a two-stage line,

the Niesenbahn is one of the longest funiculars in the whole of Europe.

## Elevator cars for the Eiffel Tower

Marc Pfister is particularly proud of his company's Eiffel Tower project. Swiss specialists also played a role in the construction of the tower back in 1889. Gangloff was awarded the contract for the new elevator cars some



Photo: J. Schramm

Marc Pfister presenting "precision work from Bern" at InnoTrans in Berlin

time ago, and this year the first cars will be delivered for the west leg of the tower, followed by the elevator cars for the east leg in 2011.

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Senda Viva (Spain), Hotel Superski (Romania), and Maestri Sci Abetone (Italy) have one thing in common: they employ Neveplast products for guaranteed visitor entertainment.

**In early 2010** Neveplast won an international bid to build the biggest artificial snow tubing slope in Europe at Senda Viva park in Spain. The new Tubby slope is 340 meters long and features lots of parabolic bends to make the run as exciting as possible. The highly slippery surface and high hourly capacity in combination with extremely low operating costs are just some of the arguments which persuaded the customer to choose Neveplast as a reliable partner. On the other side of Europe, in Romania, the people at Hotel Superski in Cavnic were so pleased with the positive feedback received



The Tubby slope in Senda Viva

from customers for the Tubby slope installed in 2009 that they decided to add a further tourist attraction in the form of a Neveplast NP30 summer ski slope with a surface that guarantees excellent performance at both high temperatures, as in Spain, and low temperatures, as in Romania, with the same equipment that skiers use on snow. In both cases Neveplast provided the customer with a turnkey installation. To ensure



Photos: Neveplast

Neveplast products – for guaranteed entertainment

that customer requirements are met in full, Neveplast developed the feasibility study, and planned and supervised the installation of the facility right up to the official opening.

## New products every year

Every year Neveplast brings out interesting new products – like Tubby Jump, which was launched recently and is already proving a

huge success. After a short run up on a Tubby slope, users sail through the air before landing safely on an airbag. That means everyone can now share the thrills experienced by the most daring freestylers. With these installations, the customers' enthusiasm for the exciting jumps is reflected in the operators' enthusiasm for the increasing number of visitors the new feature attracts. Another popular feature of Tubby Jump is that it can be used by everyone with snow tubes and can also be used as a training jump with skis and snowboards.

2010 is proving an extraordinary year for Tubby slopes in the USA, too, where the many new installations are proof of keen interest in the product.

Nine slopes were recently commissioned on new markets, too: in Dubai, in addition to the indoor centre which opened in March, another five Tubby slopes will be installed by December. And also in December, a new Neveplast centre is opening close to Jakarta.





The IDE Snowmaker on the Pitztal Glacier



Moshe Tessel – IDE Technologies, Director, Vladimir Kozhin – Chief of Staff to the President of the Russian Federation, Leonid Tyagachev – ROC, Honorary President

# Snowmaking test for Sochi on the Pitztal Glacier

## High-powered Russian delegation inspects the IDE Snowmaker

**A demonstration** of the IDE Snowmaker installed on the Pitztal Glacier in 2009 was provided for a high-powered Russian delegation keen to see for themselves the quality of the snow produced. Together with numerous decision makers from Sochi, the venue of the 2014 Winter Olympics, Leonid Tyagachev, President of the Russian Olympic Committee, and his 1st Vice President Vladimir Kozhin, came to study this innovative solution for man-made snow at the invitation of the manufacturer IDE.

Moshe Tessel, IDE manager in Israel, took pleasure in presenting the Company's

Tyrolean reference installation and was optimistic that Sochi, as the host city to the upcoming Winter Olympics, will be one of the next to invest in the company's new snowmaking technology. Snowmaker installations are planned for the Alpine and Nordic trails and the Biathlon stadium in order to guarantee the necessary snow cover at the Olympic sites. In glorious sunshine, expert discussions were held at an international level on the Pitztal Glacier at 2840 meters above sea-level. To close, the party rode up the 3440-meter-high Brunnenkogel and clearly enjoyed the breathtaking views of the Alps from the top station of the Pitz-Panoramabahn.



The members of the Russian delegation were able to convince themselves of the quality of the snow at the demonstration on the Pitztal Glacier.

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## Twenty years of guaranteed snow cover



Every year TechnoAlpin invests over a million euros in R&D. This year, yet another snowgun went into series production: the T40.

Photo: TechnoAlpin

TechnoAlpin was founded twenty years ago. Since then, reliability, experience and innovative drive have made the company the leading supplier of snow-making equipment.

**The Snow Experts** from Bolzano offer one-stop shopping – from the water supply to the production of snow in the right quality and the right place.

### Twenty years of pioneering technology

At the beginning of the 1980s, Georg Eisath and Walter Rieder were the operations managers at the Obereggen Ski Area in the Dolomites of South Tyrol. In that function they were keen to achieve greater independence from the region's climatic conditions so as to be able to operate during the full scheduled season from fall to spring. Their interest was correspondingly great when the first fan gun arrived in Obereggen from the USA. The price of 50,000 dollars, however, could not be justified by the poor quality of the snow produced. "The machine worked all right, but it was not suited to the marginal conditions typical of our climate," explains Walter Rieder, CEO at TechnoAlpin. So in the winter of 1983/84, the two men set about developing a prototype of their own. The objective was to build a machine that would be cheaper than the American model and yet produce good quality snow. Another design requirement was the ability to operate efficiently at marginal temperatures. With the help of a local metalworking shop and fans taken from

hay-drying machines, the project made good progress, and it was not long before this first do-it-yourself snowgun was presented and subsequently sold to the lift-operating company in Obereggen.

### Leading the way in R&D

Since that first prototype, TechnoAlpin has launched a whole series of snowguns and snowmaking components. One of the keys to the company's success is its commitment to the ongoing development of the product range. "Since the company was first established, no year has passed without our putting a new product on the market," says a proud CEO Erich Gummerer. The string of innovations began with the legendary Latemar M90 snowgun, which laid the foundations for the success of TechnoAlpin. In 1992 the market launch of the company's patented Quadrijet technology set a new benchmark for snow quality. The quality of the snow is the main focus of all product development work at TechnoAlpin. Over all the years, there is one point the Snow Experts have never lost sight of: "The skiers are the ultimate beneficiaries of our products, so the quality of the snow is fundamental," says Gummerer.

With its high level of investment in R&D, the company is able to react quickly and effectively to the needs of the market. Since

1999 all TechnoAlpin snowguns have been fitted with oil-free compressors. That protects the environment and greatly reduces maintenance requirements at the same time. "Our goals for the future are no different from the goals we were pursuing twenty years ago. We have always wanted to improve the efficiency of our snowguns. Our aim is to achieve maximum output of good quality snow with a minimum input of energy and water. That was our objective in the past, and it is still our goal today.

### Over 900 satisfied customers in 42 different countries

When TechnoAlpin was founded in 1990, the company had an ambitious goal: "We realized that we could only be successful as a global player. With such a specialized product as ours, we needed a big market," says Gummerer with regard to the beginnings of the Snow Experts. The goal has been reached; since the early days, TechnoAlpin has constantly expanded its customer base, and more than 900 customers in 42 different countries now place their trust in the Snow Experts. Today TechnoAlpin operates with 25 sales companies and agents around the globe. With its international presence, TechnoAlpin is never far away – for 24-hour service, technical support and fast spare parts delivery.