

**Dear Readers,**

"Magic Springs Amusement Park Doubles Holiday Attendance with Inversion Coaster." This headline, which was published on 12<sup>th</sup> July by the Associated Press, is not only proof of the success of the U.S. park, but also an indication of the attraction of true innovations.



The new SkyLoop X-Coaster at Magic Springs does indeed offer something completely new in terms of both architecture and ride experience. It also clearly shows that even smaller parks, where mega coasters are not an option, have the chance to generate enormous boosts in visitor numbers within a single season through limited but well-planned extensions. The modular concept of the SkyLoop allows any park to make a tailor-made investment.

The SkyLoop XT 450 "Abismo" in Madrid, which also opened this year, has an additional 300 m (984 ft.) of sensational track to adapt perfectly to the attractive park. It has been a smashing success with visitors from the get-go. A ride's success is an achievement for everyone who has been involved in the project and worked with great commitment to turn it into reality. When, during a joint visit to the site, this commitment is transformed into true excitement after the first ride, it's cause to rejoice.

And joy is an unbeatable recipe for success – an open secret in our line of work.

**Jörg Beutler, Managing Director**  
Maurer Söhne



**IAAPA**  
Attractions  
**EXPO**  
Atlanta, Georgia, USA  
15.-18. Nov. 2006  
Booth No. 5669  
Hall B

SkyLoop Vertical Launch

## Vertical lift-off for SkyLoop Launch

### At IAAPA Maurer Söhne presents a breathtaking new ride concept

At the IAAPA in Atlanta from the 15<sup>th</sup> to the 18<sup>th</sup> of November 2006 Maurer Söhne greets the world with a vertical takeoff at rocket speed. "SkyLoop Launch" is the youngest child of the Munich-based roller coaster builder. Its three parents are: the six-times award-winning X-Car (no need for shoulder restraints), SkyLoop (the highest inversion ride in the world), and the Launch Coaster (with the LSM drive). With a pedigree like this interest from the public is sure to be huge, both at the IAAPA and among rollercoaster fans throughout the world. Lifting off vertically at more than 11 m/s (25 mph), patrons will feel like they are on the Space Shuttle as it leaves the launchpad. Traveling skywards at a constant acceleration of about 1g, you experience the breathtaking sen-

sation of a moon rocket being launched – ideal for the use of respective themes. But whereas the astronauts must prepare themselves for a long vertical climb after lift-off, on the new SkyLoop Launch the inversion which immediately greets you is out of this world. This new amusement ride offers not only the highest vertical launch in the world but also the highest inversion. After the first cycle you are accelerated vertically again for a second cycle. At the end of the ride magnetic brakes bring you to a halt in the station. The latest generation of LSM (linear synchronous motor) drives makes the Launch possible. Its high efficiency makes for surprising acceleration at every part of the ride. Thanks to energy storage, higher connected loads are not needed – not even at lift-

off. Of course, all this can already be experienced in the six-times award-winning X-Car. The ground-breaking innovations of the X-Car are that patrons can experience inverted ride elements and negative g, without having to be held in by shoulder restraints. Patrons are held secure by no more than a lap bar and an ergonomically sophisticated bucket seat. The X-Car's agility allows it to take tighter curves, handle more extreme ride elements, and deliver a more diversified ride experience, all within a compact design.

At the IAAPA, Maurer Söhne will present not only the 'standard' SkyLoop but also the SkyLoop Launch, while also talking about the multitude of possibilities for the LSM drive in coaster design and how it will work, for example, on the new X-Car

Launch Coaster at the Drievliet Amusement Park starting in April of next year. The unique high-speed vertical launch can also be supplied on larger versions of SkyLoop, for example, the SkyLoop XT450 with standard or, in its two-train configuration, double capacity.

Instead of a 12 m/s (25 mph) high-speed vertical launch, the standard SkyLoop uses a 3.5 m/s (8 mph) vertical chain lift. The descent is also chain lift-driven. Whereas on this ride the kick comes particularly from the enjoyment felt with the gripping buildup of excitement during the ascent, the Launch version affords the fascinating thrill of being catapulted skywards. Two unique, yet totally different, ride experiences which can each be employed to suit the amusement park.

## Two in One – X-Car Coaster "Abismo" Meets "Tarantula"

Munich's steel construction company Maurer Söhne, founded in 1876, has been able to deliver two large roller coasters to the same park within only one calendar year: the largest Spinning Coaster in the world yet, by the name of "Tarantula", and this season, the new "Xtended SkyWheel" version by the name of "Abismo".

The showplace for both attractions is the Parque de Atracciones in the Spanish

capital. Ideally located in the nearby "Casa de Campo" on the western edge of Madrid, the park can be easily reached by public transportation. Probably one of the reasons that 1.4 million guests visit the park annually.

Work began in Munich in September on the Spanish order – participants of last year's Roller Coaster Forum were able to take a closer peek at the first individual parts at

the company factory. The pre-installation began in Madrid in January, resulting in a Soft Opening already in the middle of February. During this phase, however, the ride was only in operation for a number of days – a fact that wasn't unimportant for Parque de Atracciones, which is open all year round (in the colder months only on the weekends). The official opening took place at the beginning of the main season

in April.

Despite the grandiose number of trees in the park, with located in a thick valley, the attraction named "Abismo" (abyss/hell) can still be seen from practically every vantage point.

Continued on page 2 » » » »

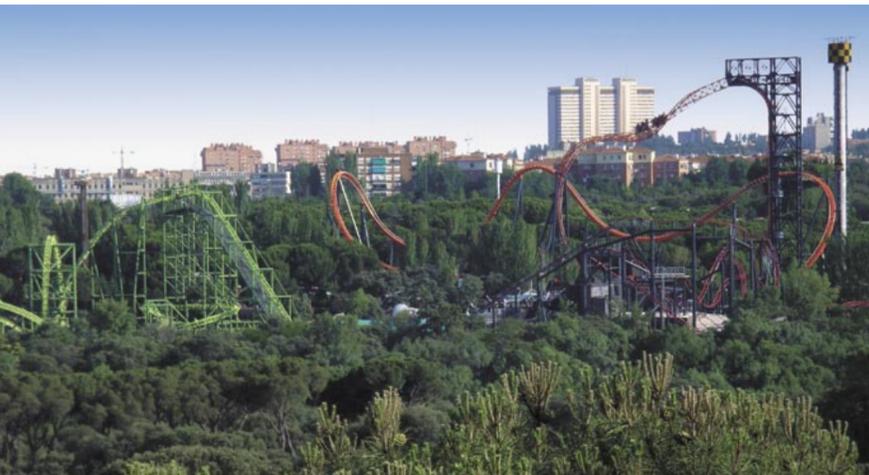


» » Continued from page 1

The loud signal colors of the tracks don't even attempt to fit into the green surroundings. "Abismo" doesn't want to hide - and doesn't need to either. The park has set up a real orange-red exclamation mark with this coaster! That was absolutely necessary for a park of this size, which up until now had only three large attractions (the first roller coaster in the park has been located here since 1969 - a Schwarzkopf "Wildcat" with ground measurements of 54 x 20 m [177 x 66 ft]).

Slowly, far too slowly for those with experience of more intensive somersaulting rides, we travel through the heartline roll, which passes directly into the vertical drop. At this stage, we accelerate to 105 km/h (65 mph). Going at some speed, with the wind sound of a small jet, we fly past the station to the right and travel into a steep 180° curve (a type of slanting Immelmann without a real inversion, called a "Half Cuban Eight"). We overcome an airtime hump before a 127° direction change brings us into the direction of the station once again.

Following the almost 22 m (72 ft.) high lift, which transports the four-seat chairs in only 13 seconds (!). The locks are released on the wagons, so that we can rotate on our own axis immediately. A 51°-steep drop with an immediate steep curve follows - a type of halfpipe that is known from the transportable version. Next on the agenda are many steep, almost vertical curves, Wild Mouse curves, a lot of small and large drops, and a tunnel. Each ride experience is different, as one never turns the same way. This hides a number of surprise sequences, since



Overview "Abismo" Parque de Atracciones, Madrid



Overview "Tarantula" Parque de Atracciones, Madrid

Just like the first example of an "X-Car-Coaster" at Germany's Allgäu Skyline Park, this attraction also operates a tandem train, with two linked six-seat chairs. The wide seats, with plenty of space in between, are comfortable and generous when compared to other roller coasters. Additionally there is also the highlight of the "X-Cars": no uncomfortable and disturbing shoulder restraints - a huge plus for the ride experience.

This is followed by a straight section with what could be called a leisurely small drop, if it wasn't for the crazy speed that brings airtime experience once again. We speed through the station area, which is far too plain, as though we were to make a stop there (the tracks can be extended by 600 m [1,970 ft.] if required). However, the following vertical lift stands in the way, and rams us towards the Spanish skies. On the steep slope the train runs out, and exactly in the moment when the wagons threaten to roll backwards (44 seconds after the start), the lift chain transports us at a leisurely pace down to the station, where the train comes to a halt precisely one minute after the ride began.

**Spinning Coaster Tarantula**  
Those who still haven't enough adrenaline flowing through the veins can try out another roller coaster from Maurer Söhne directly nearby: the world's largest Spinning Coaster called "Tarantula".

nothing is foreseeable on this very varied track layout. The attraction is a very fast experience from start to finish. Parque de Atracciones, existing since 1967, was taken over in 1999 by Parque Reunidos, and is a good advertisement for the group, which operates 18 amusement and water parks, as well as zoos all over Europe (among them also Bobbejaanland in Belgium). The company has belonged to the American Private Equity Group Advent International since 2003. The admittance price comes at 12 euros plus 24.40 euros for a wristband. Each individual ride costs 7 euros, coming to a total of 36.40 euros for an adult - quite a high amount, as is the case all over Spain, particularly as the salaries are lower than, for instance, in Central Europe. On the other hand, the park is open until midnight during the summer months, sometimes even as late as 2 a.m.

Frank Lanfer  
Kirmes & Park Revue (9/2006)



Heartroll of Abismo

**Facts "Abismo"**

- Opening - 29<sup>th</sup> April 2006
- Ground measurements - 110 x 33 m (361 x 108 ft.)
- Track length - 410 m (1,345 ft.)
- Overall height - 52 m (170 ft.)
- Track difference - 46 m (151 ft.)
- Maximum speed - 105 km/h (65 mph)
- 2 inversions - 1 x SkyLoop
- Ride duration - 60 seconds
- 1 train with 2 cars, 6 passengers per car
- Capacity - 550 pph

**Facts "Tarantula"**

- Opening 14<sup>th</sup> May 2005
- Ground measurements - 92 x 58 m (302 x 90 ft.)
- Track length - 630 m (2,067 ft.)
- Track difference - 25.5 m (83.7 ft.)
- Maximum banking - 88° and 55°
- Maximum speed - 79 km/h (43.5 mph)
- Ride duration: 1 minute 20 seconds; 8 cars, 4 passengers each
- Capacity - 870 pph



MAURER Spinning Coaster "Tarantula"

**The "X"-Factor**  
**Magic Springs' new "X-Coaster" is free air at its best**

Note: This article was originally published in the August 2006 issue of *Funworld*, the official magazine of the International Association of Amusement Parks and Attractions. This article is reprinted with *Funworld's* permission. Even for passengers who have ridden a fair

Heart Roll, offering a great view - albeit upside down - of the horizon. This is followed by a 90°, 5-g drop through the station at 105 km/h (65 mph), then another rapid ascent into a 90° vertical position near the top of the ride. The train then reverses through the station and

the tracks means comfortable seating. We developed a new seat safety system, ensuring safety without shoulder restraints and allowing comfortable seating for a large range of [rider] sizes." Though the restraint system is indeed unique, the company's main marketing hook for the



Humpty Bump Lift SkyLoop

share of roller coasters over the past few years, they'll still be in for quite a surprise when they jump on the new "X-Coaster" at Magic Springs in Hot Springs, Arkansas. As any coaster enthusiast will say, one thing to count on is if a coaster has inversions, riders are going to be strapped in with some kind of shoulder harness. Not anymore. Upon boarding "X-Coaster," designed by Germany's Maurer Söhne, a large semi-circular lap bar is pushed down over the waist, but there is no shoulder belt, harness, or horse-collar restraint. When the train leaves the station, it immediately begins a rapid 90° ascent to 46 m (152 ft.), at which time it transitions into an upside-down position, with the riders'

back up toward the Heart Roll. For the final time, it free-falls again through the station and back up to a vertical position at two-thirds of the maximum height. Here the brakes stop the train for what seems like an eternity - actually only about three seconds - before it slowly descends a final time into the station. Dan Aylward, president and CEO of Themeparks LLC, which owns and operates Magic Springs, says the choice of the 170-foot-tall "X-Coaster" was a rather obvious one. "Ours is the only one in the United States," he notes, "and to be able to introduce something new to the market is always good. It also has a small footprint, and it's very dynamic." One welcome attribute of the X-Car Coaster

coaster is "World's Highest Inversion." The X-Car has accumulated an impressive trove of design accolades, including the Reddot Design Award in Germany, the Industrial Design Excellence Award in the United States, and the Good Design Award of the Chicago Athenaeum Museum. It also won the Major Theme/Amusement Park Ride/Attraction Award and the Impact Award at the 2005 IAAPA Attractions Expo. The first "extension" of an X-Car Coaster was installed this season on "Abismo," an X-Car at Parque de Atracciones in Madrid, Spain. At 450 m (1,477 ft.), it's almost 305 m (1,000 ft.) longer than Magic Springs' "X-Coaster," allowing for four additional ride elements: a half Cuban Eight



MAURER SkyLoop in Magic Springs, USA

heads pointing straight at the ground. The feel of body weight against the large lap bar restraint, with nothing impeding the free movement of the arms and upper body, is surprisingly exhilarating because it's a unique experience on a roller coaster. The thrilling hang time seems endless as the train slowly moves into a very twisted

(the generic name given to the ride by the manufacturer) is its comfortable lap bar restraint. Jörg Beutler, owner of Maurer Söhne, says: "We aimed at our themed slogan, 'Freedom on Tracks', so we used the advantages of a single vehicle, such as extraordinary mobility and great views from all passenger seats. Also, freedom on

inversion, a steep Camelback with more than two seconds of airtime, an Immelmann turn, and a half Camelback. Beutler says more X-Car Coasters are in the works, including some "mega coasters" with numerous inversions, and an LSM-launched version coming in 2007. Keith Miller, *Funworld* (8/2006)

**First X-Car Launch Coaster**  
**Maurer Söhne builds Launch Coaster with single cars for Drievliet Amusement Park in Holland**

The first X-Car Launch Coaster is set to be realized. Having already reaped six prizes for the design and innovation of their X-Car, the Munich-based roller coaster specialists of Maurer Söhne are about to build an exciting custom-designed installation for Drievliet Amuse-

ment Park, which is scheduled to open in 2007. To give a brief idea of what this extremely compact and diversified track design with launch effect has to offer: right after the station passengers find themselves propelled in a rocket-like manner. The launch is achieved by an LSM drive (Linear Synchronous Motor), whereby an acceleration of some 65 km/h (40 mph) is reached within the shortest time, thanks to its high degree of efficiency. This is immediately followed by an extremely compact special loop which leads directly into an Immelmann. A sharp Camelback offering high levels of airtime gets passengers to dream of weightlessness with the next sensational inverted element already waiting for them: a Half Cuban Eight with subsequent heartroll. The fascinating ride ends with a high-banked steep curve right before entering



Perspective view

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Through the X-Car, spectacular ride elements will be even more emphasized. The new ride in Holland opens up the way for a completely new and unique field when it comes to the use of Launch Coasters. Its compact footprint allows offering the ride at low costs, which can be redeemed quickly. Also, small parks can afford spectacular rides, which help to attract new groups of visitors who are very likely to come back again and again. As desired by Drievliet Park, the ride will be delivered entirely on a base frame, so that one can do without extensive foundation works. Two single X-Cars will be used, each with six seats. The ride comes with an energy storage system which cuts the top power requirement to 125 kW and helps to further reduce running costs. The ride is scheduled to open in April 2007.



Sideview

the station. Given this density of ride elements to experience, the compact appearance of the first X-Car Launch Coaster is all the more surprising. Park requirements included a restriction in height to a maximum of 15 m (49 ft.), which was not regarded by Maurer Söhne as a constriction but rather as a challenge. The diversified ride experience is not only guaranteed by a spectacular ride layout but also by combining this layout with dimensions of experience typical for the X-Car, such as phenom-

- Technical Data Drievliet:**
- Track length: 316 m (1,037 ft.)
  - Footprint dimensions: 50 m x 50 m (164 x 164 ft.)
  - Max. height: 15 m (49 ft.)
  - Cars: 2 X-Cars (6 persons)
  - Dispatch interval: 33 seconds
  - Capacity: 650 pph
  - Number of inversions: 2
  - Ride Elements: LSM Launch, Looping, Immelmann turn, Camelback, Steep curve, Heartroll, High-banked curve

# Freedom on Tracks – a New Launch

X-Car is perfecting the roller coaster launch and opens up an unexpectedly broad range of applications



Abismo, Parque de Atracciones Madrid, Spain

With Schwarzkopf's "Shuttle Loop", the development of Launch Coasters began 30 years ago. Since Schwarzkopf's Shuttle Loop was used as the first launch drive in roller coasters about 30 years ago, there have been three main directions of development: faster, more extreme, and more unusual. Schwarzkopf worked with heavy flywheels that, upon coupling, delivered their energy suddenly to an acceleration slide. Now state-of-the-art contact-free linear motors have become established as the standard launch system from the middle of the nineties on. The trend towards more and more power output, however, required larger motors and higher connected loads of up to 5 MVA. This is sufficient to supply an entire village with electricity. Therefore, linear motors appeared to be more and more uneconomic and, in particular during the past few years, the acceleration-slide technology gained importance again. The energy storage that, instead of using the Schwarzkopf flywheel, in most cases is realized by hydraulic pressure today, allows for clearly lower connected loads. Altogether more than 20 linear-motor and 10 hydraulic launches have been put into service so far.

## X-Car - the perfect launch unit

Up to now, launch coasters have relied mainly on the impressive rocket-launching experience. Utmost acceleration leads to high speeds within a very short time – without any doubt an enormous thrill and an extraordinary, even though short, riding pleasure. The launch – so far the most expensive component of the system in most cases – is absolutely in the focus of attention of coaster layout. As impressive as the rapid development in this field has been, there is great potential for further applications and improvements. For example, why not combine the special features of the launch drive with other coaster qualities? Maurer Söhne, known as specialists for roller coasters with individual cars, have taken up this question and set a further milestone with their extraordinary X-Car concept. The X-Car distinguishes itself by its extreme maneuverability. Therefore the freedom of design in developing unique Launch Coaster layouts is clearly greater than in the case of long trains. Moreover, the use of individual cars allows for a uniform acceleration effect on all seats so that there are no restrictions on the course design and/or

riding pleasure due to the length or width of the train. For the shorter and narrower a train is, the smaller is the difference of forces between the first and the last row, and the more sophisticated, i.e., the more winding or curved the course is, the bigger is the effect of that difference. Apart from its extraordinary layout possibilities, the X-Car is fascinating with another unique feature especially in the Launch Coaster sector: the feeling of complete freedom in every riding position. This is achieved by the ergonomically optimized hip-bar restraint system. Without the disturbing shoulder harness, even the strongest lifting forces can be absorbed safely and very comfortably. Combined with a leg- and side-room that has remained unequalled, the passenger can fully get into the launch experience without annoying cramping. It is the utmost demand on roller coasters and, in particular, also on Launch Coasters, to give an absolutely free gliding-through-the-air feeling. Owing to the exemplary riding comfort and the unlimited layout possibilities, the X-Car is predestined for that purpose.

With X-Car, the launch continues to be an essential component of the riding experience. But the course offers much more. The combinations of more and more new and surprising riding elements following on the course of the track take the Launch Coaster away from an isolated impression of force towards an incomparably varied riding attraction that can fulfill any wish. That way, the Launch Coaster concept can be adapted to the demands of most different target groups and a maximum degree of attraction can be generated for every level of thrill.



X-Car is distinguished by dynamic design and highest riding comfort under any load.

## X-Car with linear motor – the most economic and versatile system

In the choice of the optimum launch drive system for the X-Car, there are other considerations as compared to trains. On the one hand, to achieve a high capacity, the launches at the start are made at much shorter intervals than with trains. That way, more vehicles are simultaneously on the track so that the coaster looks very lively. However, all launch systems with a

mechanical acceleration slide have to be ruled out right away since their cycle frequency is too low to achieve great rider capacity. For individual cars, due to the much lower launching weight, even in case of high acceleration requirements, the linear-motor system has a considerably higher degree of economic efficiency than hydraulic launch drives. Therefore, the decision is clearly in favor of the contact-free systems and all of their additional advantages, such as lower technical expenditure, freedom from wear, reduced long term maintenance, and minimum susceptibility to failure. Every launch drive requires safety brakes for stopping the vehicle in case it rolls back. Linear motors with LSM system are the only systems that can meet that requirement in a fail-safe manner, using the technology available today and without additional mechanical efforts. For that purpose, the electromagnets are used as eddy-current brakes.

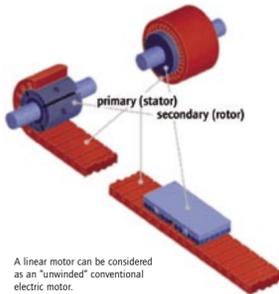
With regard to special layout ideas, the linear motor provides for another advantage: the possibility of a "flying start", i.e., also vehicles in movement can also be supplied with further energy by launch – at any place on the course and as often as you like.



Also in a Launch Coaster, riding pleasure should also come first

connected load. While, with LIM, only copper plates are used in the vehicle, permanent magnets are included in the vehicles for the LSM system. Despite the resulting higher vehicle weight, LSM is the most economical system and, unlike former applications, it can be applied without any problems today, owing to the use of state-of-the-art technology.

Fully developed energy storage systems are also available for high currents and energy. Formerly very expensive, the energy storage systems are now available at very attractive prices. They make it possible for linear motor drives to provide the energy required for the launch, while requiring a lower continuous electrical load from the park's power grid. With the system further developed by MAURER for use with X-Cars, LSM, for example, now can work with the same low connected loads as traditional simple chain-lift systems and achieve an efficiency that is clearly superior to that of hydraulic launch systems.



A linear motor can be considered as an "unwinded" conventional electric motor.

## Launch without higher power demand

Apart from the initial costs and low maintenance costs, the connected electric load plays a decisive role in making the launch technology attractive and economically feasible for all users. That is why the modern LSM (Linear Synchronous Motor) is used for X-Cars. Compared with the LIM (Linear Induction Motor) as the second linear motor system available, the LSM has a higher efficiency and a clearly lower

The modular design of all required components allows for a cost-effective and energy-saving adaptation of X-Car launch systems to large courses having a track length of more than 1000 m (3,000 ft.) with very high launching speeds or several boost stations up to highly attractive small low-cost courses with a track of only 300 m (1,000 ft.).

## X-Car Launch Coaster "XL1000", Drievliet Park in Holland

Such an X-Car Launch Coaster, "MAURER XL1000", is currently under construction at the Drievliet Amusement Park in Holland. According to the customer's request, the entire system is built on a base without foundations, a unique feature for Launch Coasters that illustrates the flexibility of the system. As another restriction, the height limit of the park of only 50 ft. (15 m) was to be observed, while a loop was to be provided at a highly visible position of the ride. The area of 164 ft. (50 m) x 164 ft. (50 m) was made available in the very narrow park. It was an extremely small space located in the middle of the park. The use of MAURER XTRAC™, a development software adapted to the special capabilities of X-Cars, proved to be very helpful. Only with the help of the automated calculation routines, was it possible to find an optimum layout for the course. Extremely soft curve transitions were achieved in spite of the narrowness of the site.

## Example of a large X-Car launch with 11 inversions

Despite all restrictions, a layout was created that is not only very compact, but also impressively innovative and extremely exciting: After the station and a short downhill section, quite suddenly, the passengers are carried away by the rocket thrust in a flying start. The launch with LSM accelerates within a very short time to a speed of about 65 km/h (40 mph), directly followed by a very compact special loop that directly passes into an Immelmann. A sharp Camelback with much airtime and then the next sensational overhead figure: a Half Cuban Eight followed by a Heart-roll. Shortly before the station, there is a steeply banked curve. With all the exciting elements, it is quite surprising how compact the X-Car Launch Coaster actually is.

## Sharp Camelback with much airtime

Because of the spectacular layout, excellent seat comfort, and inversions without shoulder restraints, the exciting launch is just the beginning to the ride experience. Thus, the new course in Holland opens up

a completely new and unique field of application for Launch Coasters. Due to the compact design, the costs are low and will pay off quickly. At the same time, even small parks can afford the cost and power requirements of spectacular Launch Coasters and so win and retain new groups of visitors. The ride utilizes two individual X-Cars with six seats each. An integrated energy storage system limits the peak power requirement to 125 kW. The coaster will enter into operation in April 2007.

## Launch is unique, but chain lifts are thrilling, too MAURER SkyLoop – unique attraction with chain lift

Doubtlessly, energy supply by means of launch has a number of advantages: high tangible acceleration, which makes it outstandingly well suited for various thematic ideas. Exciting courses can be realized with a low height and surprising acceleration effects – even in the middle of the course. As a launch drive, the linear motor provides comprehensive benefits, also when using individual cars, and at extremely attractive prices.

Even though the developments described above make the launch generally interesting for all users, the advantages of other types of roller coasters should not be disregarded. The high ascent of a chain lift will always give the passengers the kick that can develop into an incomparable thrill by the relatively slow climbing up to the peak. That effect becomes absolutely breathtaking with a vertical, maybe even overhanging, ascent, for example, in the MAURER SkyLoop, where the head-first exit is already visible from far below and inexorably approaches the passenger. Especially the highly attractive external effect as described in the above example will guarantee that chain-lift systems will continue to have a broad and increasing area of application. Whether launch or chain – it is essential to adapt the choice thoroughly to the respective needs. In every case, however, it is a fact that a high level of attraction and a thrilling ride experience will finally depend on an optimum layout of the course.

Sharp Camelback with much airtime



# New Coaster Layouts

## Spinning Coaster "SC 1000"

Affordable standard Spinning Coaster offering great variety

- Track length: 250 m (820 ft.)
- Height: 11 m (36 ft.)
- Floor space: 23 x 33 m (75 x 108 ft.)
- Max. speed: 45 km/h (28 mph)
- Capacity: 540 pph



## X-Car Launch "XL 320"

Sensational Launch Coaster on a compact area

- Track length: 320 m (1,049 ft.)
- Height: 23 m (75 ft.)
- Floor space: 20 x 85 m (66 x 279 ft.)
- Max. speed: 80 km/h (50 mph)
- Capacity: 800-1,600 pph



## X-Car Coaster, custom-designed

Compact X-Car Coaster with vertical lift and vertical drop

- Track length: 480 m (1,575 ft.)
- Height: 25 m (82 ft.)
- Max. speed: 80 km/h (50 mph)
- Capacity: 850-1,700 pph



## Spinning Coaster, custom-designed

Large and very dynamic Spinning Coaster with split chain lift

- Track length: 715 m (2,346 ft.)
- Height: 28 m (92 ft.)
- Max. speed: 72 km/h (45 mph)
- Capacity: 1,000 pph



X-Car - IAAPA Impact Award Winner 2005

# Color is emotion

Colors have a greater impact on product design in our field than ever before. Colors express an emotional attitude toward life, create contrasts or harmony, create impressions of elegance, modernity, and beauty, draw people's attention, and make us aggressive or have a soothing effect.

As an artistic device, colors have to be integrated into the design, execution, and presentation of a product and the zeitgeist associated with it. Therefore MAURER offers its customers in the field of amusement rides a largely unspecified field of color ranges for their systems, which gives them the opportunity to present their products in a very individual way.



Freshly painted rail for Drievliet in Holland

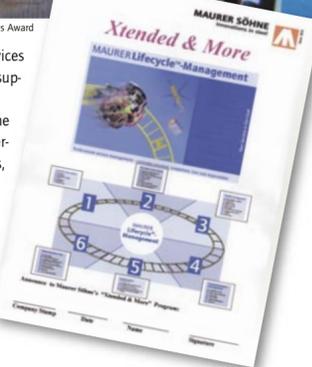
# Bonus Program Customer Support



Mr. Bäuerle, Maurer Söhne, hands out the first Bonus Award

Xtended describes the philosophy of many MAURER amusement park ride companies, since MAURER simply offers more. Our bonus program, "Xtended and More," has also been offering more since its introduction in January 2006, and customers have eagerly welcomed it. With this program, MAURER customers benefit from attractive offers and awards, which they can acquire without any additional effort or cost. The offer includes valuable awards, such as tools, computers, digital cameras, and free training sessions at our Munich plant, as well as attractive

discounts on new systems and services from our comprehensive customer support range. You collect award points each time you purchase spare parts or order services, such as repairs, modifications, training sessions, or service calls. Are you interested? Would you like to participate in our successful program? Simply register with our Customer Support Division by sending an e-mail to ar-service@maurer-soehne.de, subject: bonus program.



# Review of Fairs



EAS, Vienna 2006; Divo Ostrov, St. Petersburg (RUS) Olga Podvalnaya, owner, Horst Ruhe, MAURER Rides Managing Director, Vladimir Podvalny, St. Petersburg



EAS, Vienna 2006, MAURER in conversation with Japanese customers



IAAPA Asian Expo Shanghai 2006, Matthias Clostermann, Owner Clostermann Design; Ms. Shan-Müller, MAURER Rides; Horst Ruhe, MAURER Rides



IAAPA, Atlanta 2005, Amusement Park Drievliet, Den Haag (NL), Wim & Jos Faaij, Directors

individually selected, from dull or matte to high-gloss and metallic. The coats have thicknesses of 40 to 80 mm. The paints are applied using hot-spray systems at a constant temperature. This achieves the greatest possible consistency of quality.

### Pretreatment is crucial

However, a good paint coat, which provides lasting protection against corrosion, also requires careful pretreatment of the welded steel construction. MAURER largely works with sand-blasted base material. After the individual parts have been welded together and the weld splashes removed, an additional spray treatment is performed shortly before the application of the base coat, which ensures that the base not only has a sufficient degree of roughness but also that it is clean.

For treating the steel constructions, a continuous-feed as well as a free-blast installation, both of very large size, are available.

The paint system is not only perfectly selected for application in the hall. Unavoidable corrections at the construction site can even be applied with the mandatory adhesion and coat thickness on surfaces which were only derusted manually. In summary, it's a system the customer can rely on - after all, what good is a lovely illusion when it simply peels away?

# Maurer Söhne Celebrates 130 Years at Parque de Atracciones Madrid

Established in Munich in 1876, Maurer Söhne is celebrating its 130th year in business. To mark this special occasion, a group of 72 MAURER employees came to the amusement park "Parque de Atracciones Madrid" on 14<sup>th</sup> July. The "trip" to Spain related to the group's daily business: within one year, as many as two excellent Maurer Söhne roller coasters have been opened in this park. Being the largest MAURER Spinning Coaster at present (630 m / 2067 ft. of track length), the Spinning Coaster 3000 "Tarantula" opened in 2005. This event was followed by the opening of SkyLoop XT 450 "Abismo", the largest X-Car Coaster to date (52 m / 171 ft. of height).

The birthday celebrations offered an excellent occasion for a trip to Madrid with the staff of the Amusement Rides Division. This way, they could experience the latest MAURER products at close range. Both rides are installed side by side, making it convenient to test the installations at full length. Both attractions are very special in their way and guarantee extraordinary riding pleasure. Tarantula as a lively and highly dynamic spinning coaster for the whole

family; Abismo with the highest inversion worldwide and more than two seconds airtime for all fans seeking particular thrill. What these coasters have in common is the enormous accumulation of thrilling experiences, which could be realized on a small footprint thanks to the highly flexible single cars. In the end, it was generally agreed that Parque de Atracciones not only runs two of the best MAURER attractions so far, but also that this park is a perfect showcase for the MAURER range of products.

As for its history, the Amusement Business constitutes the most recent division of Maurer Söhne. Its roots are to be found in the area of steel construction, which placed MAURER in a top position. The company enjoys a high-profile reputation in the fields of bridges, structural protection systems, and spectacular building constructions (e.g., BMW World, Munich). Their competence in the fields of steel construction, statics and the protection of structures from dynamic impacts was the ideal precondition for building roller coasters in the first place and eventually joining the business of developing innovative ride concepts. Maurer Söhne employs a total of 500 people worldwide.



Enthusiastic staff members of Maurer Söhne

## 130 Years of Maurer Söhne in Munich



FRIEDRICH MAURER SÖHNE, MÜNCHEN-FREIMANN

- 1876 Company founded by Friedrich Maurer in Munich
- 1928 Steel-framed structures, steel-bridge building
- 1931 Takeover of the company by Johannes Beutler
- 1936 Export of gas separators for oil wells to the USA
- 1953 Construction of large concreting cranes
- 1964 Steel stacks, drying towers, launching devices for bridge building
- 1965 Start of carriageway expansion joints
- 1970 Foundation of the Dortmund branch in northern Germany
- 1973 Bridge bearings and development of vibration absorber systems
- 1991 Establishment of the Bernsdorf branch near Dresden in eastern Germany
- 1993 Continuation of the business of BHS/Schwarzkopf Amusement Rides
- Start of Wild Mouse production
- 1996 Introducing of the Building Earthquake Protection product line
- 1998 Development of Spinning Coaster
- Development of Power Tower
- 1999 Establishment of a bridge equipment production facility in Turkey
- 2003 Establishment of a bridge equipment production facility in China
- 2003 Enlarging of product range by Rapid Rides
- 2004 Development of X-Car
- Development of Skyloop
- 2006 Development of X-Car Launch Coaster

## First Comes the Mechanical Engineering, Then the Fun

Fun and emotion play a big role in the amusement industry - but in order for people to enjoy the ride, an actual vehicle has to somehow result from all the great ideas and designs. This is where highly trained mechanical engineers hold sway. The Mechanical Engineering team is part of the Construction and Development Division, headed by Dr.-Ing. Alfred Müller. Mr. Robert Gettert is the team leader. The main task is the specific development of cars. The constructions are produced via the Autocad Inventor 3-D CAD system. During 2006, the extension of the X-Car into the Launch Coaster was on the to-do list. The Launch Coaster will be used next

stomachs turn, the mechanical engineers have put thought into the areas of lifts, drives, and brakes. The development and layout is also part of the team's standard tasks. Among the most recent highlights in this area is certainly the extremely sophisticated construction of the Humpty Bump Lift, which is used in the SkyLoop as well as the G-Force in Drayton Manor Park. Another focus is the coordination with the steering technology as well as the generation of documentation. Maurer Söhne closely cooperates with TÜV Süd, which not only constantly checks the safety standards but whose expertise can also contribute to finding solutions.

## New in Customer Support: Ernst Schade



Ernst Schade

After 28 years in various positions at Schwarzkopf, Mr. Ernst Schade has switched to Maurer Söhne, where he has been supporting our Customer Support team since July 2006. Due to his many years of work, he obviously has intimate knowledge of the industry and our customers, which provides him with the ideal background for working successfully with us. His professional competence enables us to handle the great growth in our after-sales service area and process incoming inquiries and orders promptly.

The Customer Support Division at Maurer Söhne has six areas:

- Start-up Operation
- Spare Parts
- Repair/Modifications
- Service Calls
- Training
- Used Systems

The head of Customer Support is Mr. Guido Bäuerle. He is supported by his two team managers, Mr. Friedl, responsible for Start-up Operation and Service Calls, and Mr. Schade in Spare Parts and Used Systems. Due to Mr. Schade's many years of experience in this sector and his specialized background, he is also happy to process inquiries concerning spare parts, remodeling, or repairs for systems from Schwarzkopf.

You can reach Customer Service at any time at  
Phone: +49 (89)32394-280,  
Mobil: +49 (178)6666954,  
or Fax: +49 (89)32394-234, as well as via E-mail: e.schade@maurer-soehne.de



Engineering team (from left): Günter Hellmeier, Theo Fehsenmayer, Johann Doll, Stefan Russer, Frank Schatz, Michael Werth, Robert Gettert

year at the Drievliet Amusement Park in Holland, for example (see page 3). This field of work also involves a lot of technical coordination, as special areas, such as the FRP chassis, model construction, or industrial design involve cooperation with external specialists. At all the points where the passenger's

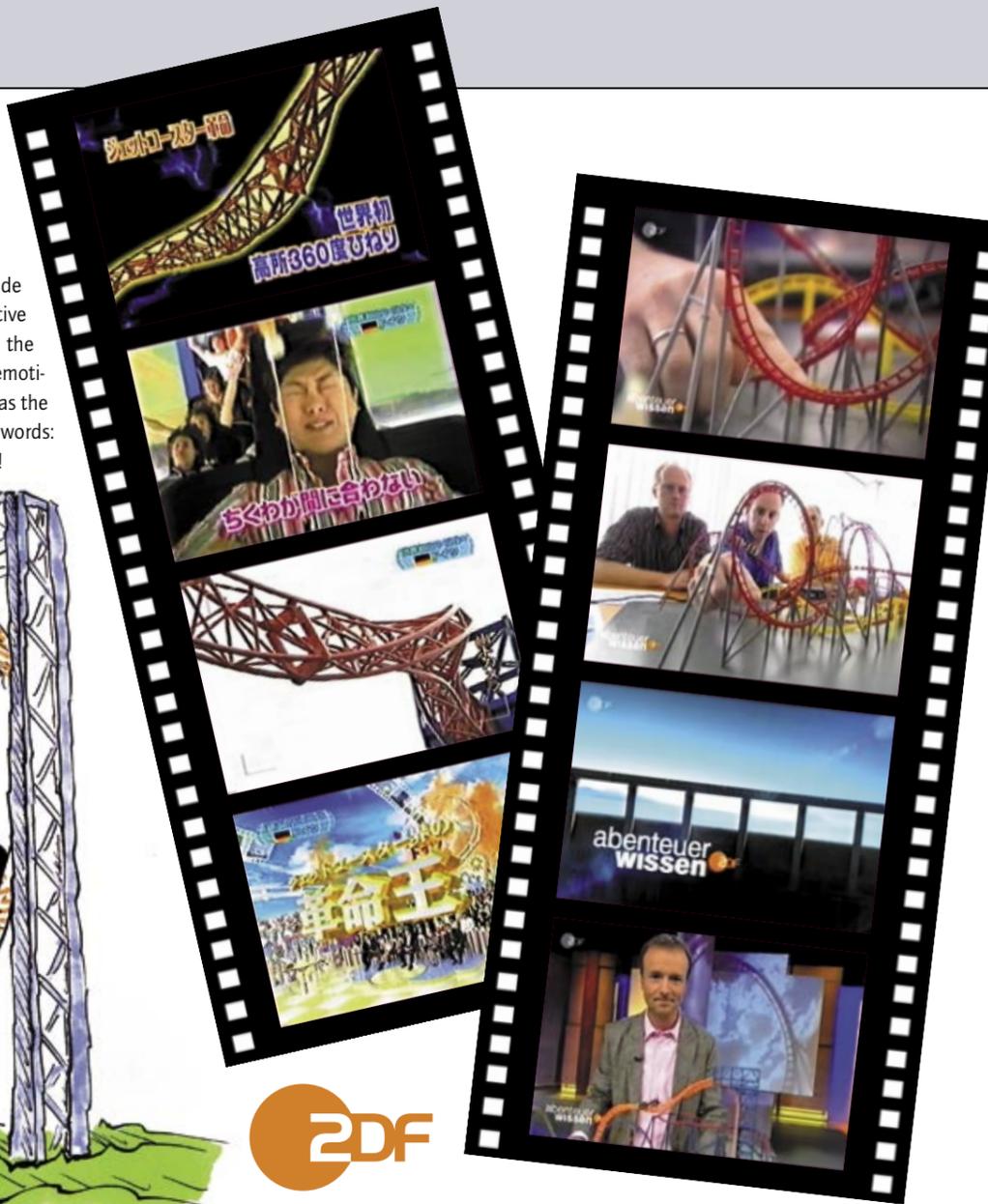
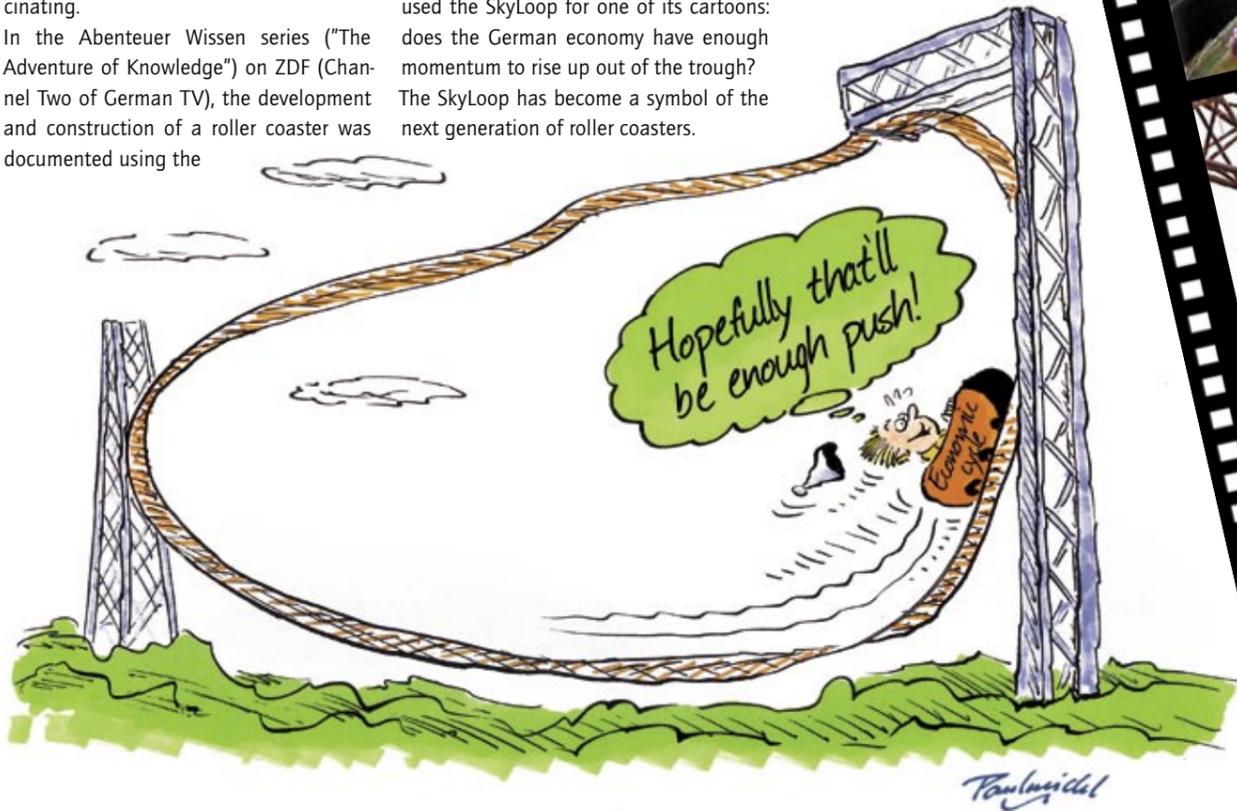
Another major task is the management of quality circles in order to consistently improve the entire order process. There is close contact with the Production and Quality Assurance Departments. Quality check schedules are developed together and constantly updated to reflect the latest insights in the field.

# SkyLoop - the New Media Star Adrenaline is necessary!

The SkyLoop has managed to draw the attention of the media in no time at all. Television and the press are outdoing one another with their coverage. The combination of steel construction, speed, height, and the most spectacular dive formations are frightening and, at the same time fascinating. In the Abenteuer Wissen series ("The Adventure of Knowledge") on ZDF (Channel Two of German TV), the development and construction of a roller coaster was documented using the

example of the SkyLoop XT450 "Abismo" Madrid's Park de Attracciones. Japanese television traveled halfway around the world just to shoot a show on the SkyWheel in the SkyLine Park in Germany. Even the German Chamber of Commerce used the SkyLoop for one of its cartoons: does the German economy have enough momentum to rise up out of the trough? The SkyLoop has become a symbol of the next generation of roller coasters.

After all, no other ride combines the innovative power, the extreme, the architectural, and the emotional elements as much as the SkyLoop does. In other words: adrenaline is necessary!



## X-Car on Award Ride

### The unique MAURER coaster car wins prizes 5 and 6

During last year's American Amusement Show IAAPA - 15<sup>th</sup> through 19<sup>th</sup> November 2005, in Atlanta, in the USA the MAURER X-Car was awarded two renowned prizes: "Best New Ride" and "Product with the highest impact on amusement ride industry." The awards for the X-Car at IAAPA Show are on the road to success together with previous awards. The X-Car was already awarded four international prizes: "Best Idea at EAS 2004", "Reddot Design Award 2004", "IDEA Design Award 2004", "Nominee for the Design Award of the Federal Republic of Germany 2006". The dominant innovations of the X-Car are the upside-down rides and rides with negative g-forces. The passengers are not pressed in shoulder restraints, only a lap bar and an ergono-



IAAPA President Rob Norris presents the desired IAAPA Award "First Place Best New Product" for MAURER X-Car to Jörg Beutler, Managing Director Maurer Söhne

mically sophisticated body-contoured seat ensure passengers' safe ride, offering new ride experience with great optical impact. The X-Car is specifically maneuverable, providing more narrow curves and diversified track designs on smaller footprints.

"First Place - Best New Product" in the category "Major Theme/Amusement Park Ride/Attraction" is the full description of the first award. The second, more significant IAAPA prize is the "Impact Award", "IAAPA's first prize", honouring the extraordinary product of all categories, with the highest impact on the amusement ride industry in 2005. Mr. Dennis Lind, Walt Disney Parks & Resorts, presented the Impact Award. Many famous representatives of the amusement ride sector offered their congratulations on this MAURER double success, the interest of the press was great. Products not older than five years, and running on site in an amusement park can apply for these IAAPA awards. MAURER application documents are based on the X-Car Coaster "G-Force" at Drayton Manor Park, in England which opened last year.



## Response

For more detailed information, please select one or more of the following options:

- MAURER Spinning Coaster
- MAURER X-Car Coaster
- MAURER SkyLoop
- MAURER Power Tower
- MAURER Service Bonus Program
- Other \_\_\_\_\_
- Please contact me

\_\_\_\_\_ Last name, first name

\_\_\_\_\_ Company

\_\_\_\_\_ Department

\_\_\_\_\_ Address

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Complete the form, cut it out or copy it, and fax it to Maurer Söhne!

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**MAURER SÖHNE**  
Innovations in steel



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