

Dear Readers,

The aim of this year's Xpress:

- To "Wow!" you with our current developments and ideas.
- Share the excitement of the successful grand opening at Universal.
- Take a look at the latest planning for Valmontone close to Rome (Spinning Coaster and Launch Coaster) or the SkyLoop for Joyland in China.



So, please, head into the future of amusement parks with us:

- Liftoff with force in the Loop Launch
- Multimedia-charged roller coasters with X-Car Music
- Intelligence and power within the brand new X-Train

Be inspired!

Jörg Beutler,
Chairman of the Board

MULTIMEDIA AT GREAT HEIGHTS



IAAPA
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EXPO
Convention Center,
Las Vegas, Nevada, USA
17.-20. Nov. 2009
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RipRideRockit



X-Train



LoopLaunch Airtime Booster with LSM Loop

X-CAR MUSIC: Charting the Future Path of Roller Coaster Architecture

There was a time when roller coasters only needed to be fast with lots of bends to be considered good, but today's generation is used to hearing their favorite music whenever they want and wherever they go. X-Car Music is the Munich-based roller coaster manufacturer's answer to this demand. When it comes to multimedia, X-Car Music is the most advanced roller coaster car available today – and demonstrates the awesome number of possibilities available.

The grand opening, considered a multimedia milestone in the world of roller coaster architecture, was held on July 4, 2009 at the Universal Orlando Resort in Florida. The Hollywood Rip, Ride, Rockit is the most sound-enhanced roller coaster in the world, combining an integrated choice of music with unsurpassed video and light engineering. Two additional, unrivaled features created just for Universal are the world's highest vertical lift and the non-inverted loop.

If you know the youth of today, you know that they consider media, music, and virtual worlds an essential part of life. They've grown up with video, the Internet, cell phones, and computer games, so why would they want to go without them on a roller coaster?

To each his own sound

With MAURER X-Car Music, they won't have to: from the second they sit down, passengers can choose their own soundtrack for the fast-paced ride to come. The technical realization involves an innovative multimedia seat and easy-to-use PDA.

The sound system is installed at head height to provide a remarkable stereo experience. The X-Car's seats and their lack of shoulder restraints were virtually predestined for speakers designed with no limitations to acoustic and aesthetic characteristics. That acoustic design means

passengers only hear their own music – and not the music of the person sitting next to them.

The audio system is additionally available without the PDA or individual options, meaning the same music is played in every seat.

Multimedia and electronics

Roller coaster cars are high-tech vehicles packed with electronics and microprocessors, providing the basis for a number of individual configurations and combinations. X-Car Music gives "custom design" an entirely new dimension.

Components such as audio, video, or LEDs can be installed individually in the cars. Furthermore, any number of additional multimedia features and elements can be integrated into the multimedia seat depending on client specifications.

For example, powerful LED lights make it possible to give each car a specific, individually controlled theme and there are many different options when it comes to car lighting.

On-Ride Movie, a fully integrated video camera, records the entire ride. Passengers can then purchase their DVD and take the movie home with them afterwards.

The new X-Car Music has mastered the balancing act between multimedia and roller coaster sensation, between attraction and family-friendly experience – and the first example at Universal is the dynamic proof.

You can read more about the Universal Rockit's innovations and highlights on page 2.

Hollywood Rip Ride Rockit

Lights... Camera... Coaster!

Originally scheduled to open in spring, Hollywood Rip Ride Rockit, Universal Studios Orlando's highly anticipated rollercoaster, finally opened in late August to the delight of park guests and operator alike. It was worth the wait, says **Paul Ruben**.



165ft vertical lift (the world's tallest), scaled in just 16.5 seconds. Of the six manoeuvres that follow, three have never been built before. These include the Double Take, the world's largest non-inverted loop, preceded by a 65 mph drop from the 167ft lift, the Treble Clef, where guests burst through a building facade on track shaped like the music symbol, and the Jump Cut, a spiralling, negative-gravity move.

When they reach this point on the track, passengers feel like they are experiencing a corkscrew, without actually going upside down. Soaring 33ft above ground, they are turned at a 95-degree angle and fly over the waiting crowd at the load platform. Barrelling past the Blue Man Group theatre towards Universal CityWalk, the cars drop underground and emerge from a chasm near the entrance to Universal Studios. The final manoeuvre is an inclined loop called the Plot Twist, meaning it leans at an angle to the ground, and includes a 150-degree banking turn. Riders fly around a complete 360-degree turn before heading back to the station. Bottom line? Rockit offers a smooth, fast, comfortable and, best of all, thrilling ride, enhanced by the musical soundtrack. Although Universal Studios has another coaster, the Mummy, it is hidden inside a building. With its unique profile, Rockit is an eye-catcher both in and outside the park, and that's saying something at a resort that is not exactly poor on attractions.

This innovative attraction from Maurer Rides of Munich is the tallest, largest and fastest yet to use its X-Car ride vehicle. With seven pairs of X-Cars, each boasting 12 seats, the Rockit has an extraordinary high capacity of 1,850 passengers per hour. The ride also features America's only conveyor belt coaster load platform, so that guests can board their cars without the vehicles ever coming to a complete stop. This allows a vehicle to leave the station every 23 seconds.

"Universal Orlando Resort is a place where you're not only entertained, but also part of the entertainment," explains Mike West, executive producer for Universal Creative. "Hollywood Rip Ride Rockit is a perfect fit for Universal Orlando because it puts guests in the director's seat - they can customise their experience."

Passengers do this by choosing their own ride soundtrack from five genres on music, courtesy of an on-board sound system. The coaster is also the first with both on and off-board cameras to capture guests' entire ride experience, which they can take home in the form of a music video.

Hollywood Rip Ride Rockit features 3,800ft of steel track, and starts with

While most coaster riders will select the first drop or a moment of negative gravity as the best part of the ride, West is taken by the music: "For me, the best part of the ride is the ability to have a completely different experience each time you ride depending on the song you pick. Each song provides a truly unique ride."

In these dour economic times, the Rockit is expected to kick-start attendance at Universal Orlando Resort. "Any new attraction is good for our guests," West notes, "and good for our business."

Text & Photos: Paul Ruben, Park World 2009



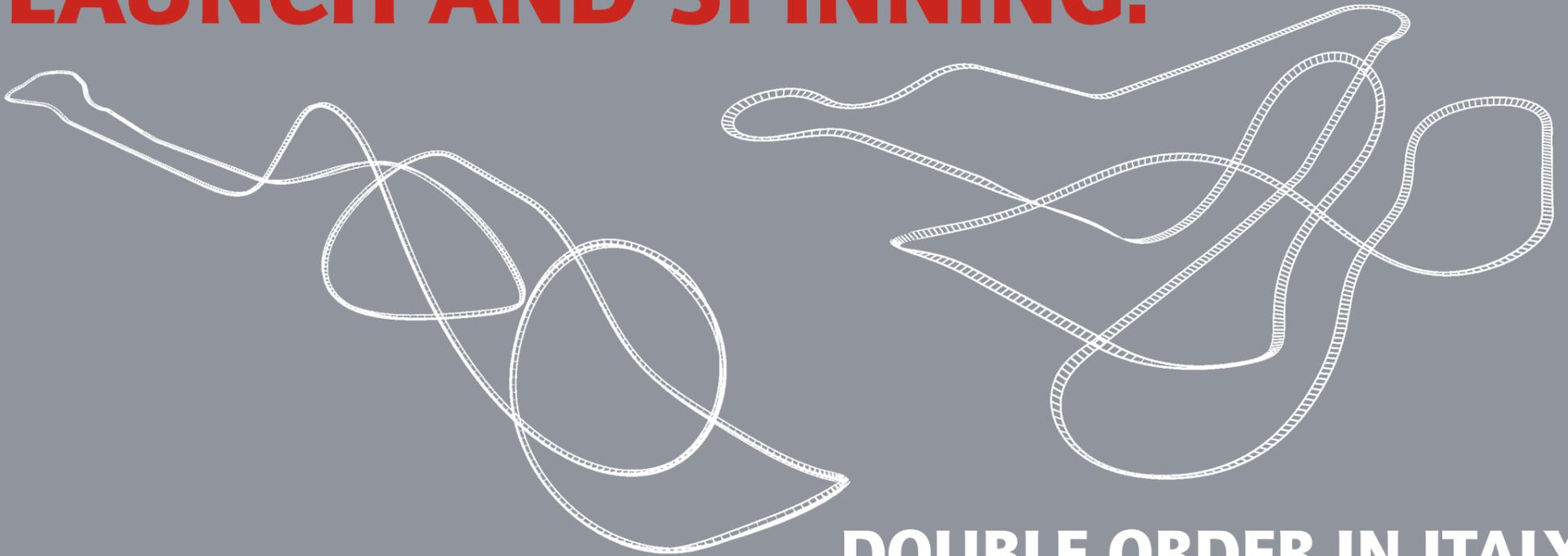
Ride the ride, buy the DVD

Hollywood Rip Ride Rockit is the first coaster featuring both on and off-board cameras to capture passenger's entire ride experience, which they can then take home in the form of a "music video." To make their music selection, riders use a touchpad (pictured left) inside the ride vehicle and choose from Classic Rock/Metal, Rap/Hip-Hop, Club/Electronica, Pop/Disco or Country, and then pick a

song. Each seat is fitted with personal stereo speakers so guests can rock out to 90 decibels of music; yet never hear the songs playing for other riders. The music video available as guests leave the ride mixes on-board footage, music and special effects and is available in both DVD and e-mail formats to share with family and friends. It can also be ordered via the internet once park guests return home.



LAUNCH AND SPINNING:



DOUBLE ORDER IN ITALY

Munich, Rome. Starting in 2011, rain or shine, visitors to a new Theme Park in Valmontone near Rome will be able to enjoy two of Maurer Söhne's roller coasters. The Munich roller coaster manufacturer will demonstrate its capabilities with two roller coasters: Outdoors with a big X-Car launch coaster and indoors with an imaginative spinning coaster.

Facts

Launch Coaster Outdoor

- Type: X-Car launch coaster
- Capacity: 1,000 pph
- Track Length: 750 m
- Height: 35 m
- Max Speed: 95 km/h
- Ride Duration: 80 sec
- Number of Cars: 5
- Acceleration: LSM at 0.8g

In the vicinity of Rome, a completely new amusement park is currently under construction, the Rainbow Park with an investment volume of nearly 200 million. The two Maurer coasters are part of stage 2; scheduled to open to the public in 2011.

Full speed ahead with rocket power

"Piano, piano", Italian for slow or quiet, will be experienced on the launch coaster only at the beginning: After a slow start section, the LSM launch accelerates the vehicles to a heady 95 km/h; and then – typical for Maurer coasters – further attractions follow without interruption.

A camelback with three seconds of air time leaves passengers breathless; and it takes a cool head to enjoy the view of the lake from a 35-m non-inversion loop right over the sparkling water. A helix and finally a heart roll show Italian temperament. At 750 meters, the coaster will be one of the largest of its kind. The five individual X-Cars with their maneuverability and a safety system without shoulder bars make this ride experience in the sunny south a real pleasure.

Spinning with an outdoor excursion

The curvy spinning coaster will make sure that indoor passengers have fun through a slight disorientation. The sightseeing highlight on the 430-m stretch is a trip on a panorama curve leading out of the hall into the outdoors. However, two lifts provide an extra kick on the ride: the first one just after leaving the station; the second shortly before returning to the station. What lies in between is almost Maurer tradition - an extremely narrow and curvaceous layout, which repeatedly turns passengers in every direction in the seven spinning cars.

Both layouts are delivered by Maurer Söhne as turnkey systems; i.e. including transport, and on-time construction.

Facts

Spinning Coaster Indoor

- Type: spinning coaster
- Capacity: 850 pph
- Track Length: 430 m
- Height: 17 m
- Max. Speed: 58 km/h
- Ride Duration: 75 sec
- Number of Cars: 7



Drievliet Family Park, The Netherlands



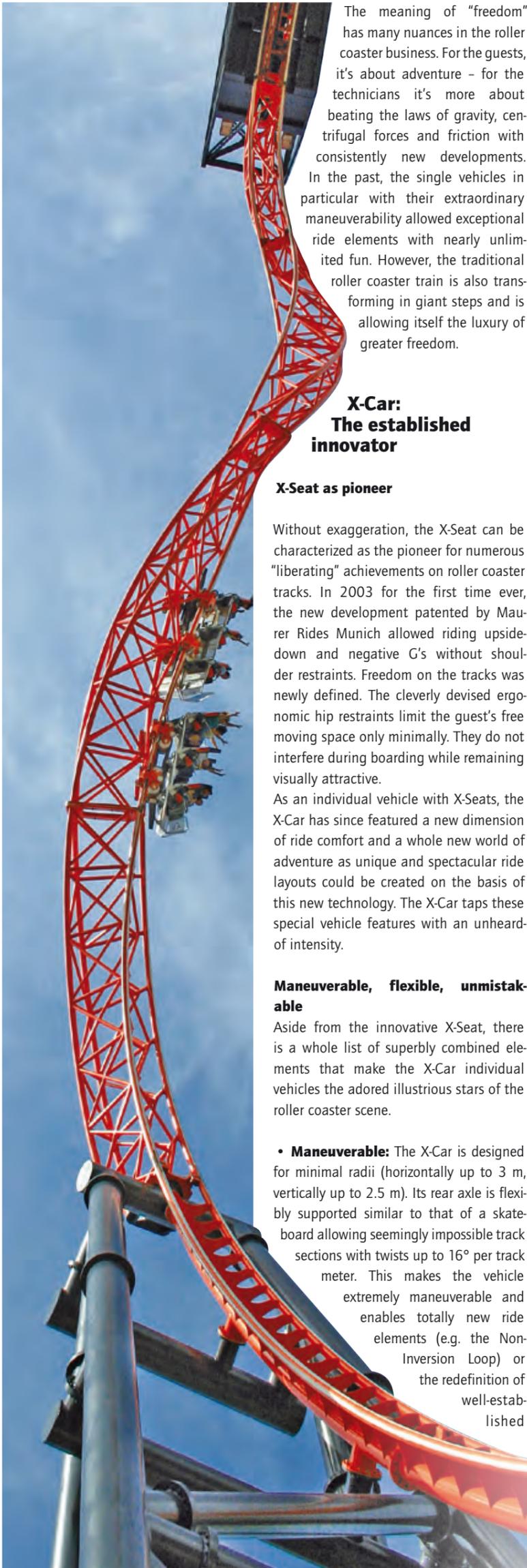
Parque de Atracciones, Spain



Layout including designated area

Two dissimilar Brothers: X-Car and X-Train

Freedom on the Tracks meets all Demands



The meaning of "freedom" has many nuances in the roller coaster business. For the guests, it's about adventure – for the technicians it's more about beating the laws of gravity, centrifugal forces and friction with consistently new developments. In the past, the single vehicles in particular with their extraordinary maneuverability allowed exceptional ride elements with nearly unlimited fun. However, the traditional roller coaster train is also transforming in giant steps and is allowing itself the luxury of greater freedom.

X-Car: The established innovator

X-Seat as pioneer

Without exaggeration, the X-Seat can be characterized as the pioneer for numerous "liberating" achievements on roller coaster tracks. In 2003 for the first time ever, the new development patented by Maurer Rides Munich allowed riding upside-down and negative G's without shoulder restraints. Freedom on the tracks was newly defined. The cleverly devised ergonomic hip restraints limit the guest's free moving space only minimally. They do not interfere during boarding while remaining visually attractive.

As an individual vehicle with X-Seats, the X-Car has since featured a new dimension of ride comfort and a whole new world of adventure as unique and spectacular ride layouts could be created on the basis of this new technology. The X-Car taps these special vehicle features with an unheard-of intensity.

Maneuverable, flexible, unmistakable

Aside from the innovative X-Seat, there is a whole list of superbly combined elements that make the X-Car individual vehicles the adored illustrious stars of the roller coaster scene.

- **Maneuverable:** The X-Car is designed for minimal radii (horizontally up to 3 m, vertically up to 2.5 m). Its rear axle is flexibly supported similar to that of a skateboard allowing seemingly impossible track sections with twists up to 16° per track meter. This makes the vehicle extremely maneuverable and enables totally new ride elements (e.g. the Non-Inversion Loop) or the redefinition of well-established

ones. Another example is the "G-Force" at Drayton Manor Park in the UK where the chain lift turns into a loop lift and the camelback is extremely peaked. The outcome is a more intensive ride experience leading to a greater attractiveness for the respective park.

- **Compact:** The shortness of the vehicles not only accounts for its maneuverability but also for smooth acceleration behavior through all seat rows – and the X-Car can incorporate all the permitted acceleration standards.

- **Coupleable:** One significant aspect for large capacities of up to 2000 pph: Thanks to the special coupling bar, two vehicles coupled together can sustain the same maneuverability as a single car.

- **Outstanding Visibility from all Seats:** Two seats per row allow for an unobstructed side view. With only three rows in stadium style seating, the X-Car provides each guest with the best possible front view.

- **Freedom on the tracks I:** Thanks to the hip restraint, the guest is barely restricted – the seat alignment offers tremendous leg and lateral mobility.

- **Freedom on the tracks II:** The maneuverability makes compact and highly creative layouts possible, i.e. a lot of tracks on a small base area or adherence to the narrowest constraints. Due to the height restrictions at Drievliet Park in the Netherlands, the Looping height for "Formule X" was confined to a mere 14.5 m.

- **Freedom on the tracks III:** Whether it is the vertical lift, overhead lift or LSM-launch, the diversity of the drive concepts is plentiful.

- **Attractive:** The multiple vehicles on the tracks constantly generate a lot of action drawing the spectators' attention.

- **Unmistakable:** Each ride is created with



X-Train: launching the traditional roller coaster train to the future

unique ride elements making it distinctive. The central focus is on the extraordinary – the one-of-a-kind (e.g. SkyLoop). The first-class design backs up the ride's individual character. The X-Car's special features make it an ideal vehicle for a large spectrum of different ride elements.

It shows off its strengths with the space-saving compact coaster consisting of only 150 m track as well as with the mega coasters – one of which was built recently at a length of 1000 m.



"Formule x" at Drievliet Park (the Netherlands): X-Car in action in a very compact layout

High tech and mobile media

Of late, the roller coaster vehicle X-Car Music has been playing in the high-tech league. The electrical power supply on board and stereo speakers on each seat generate a fantastic sound. Each guest chooses his individual song. Video cameras that are perfectly integrated into the seats offer every imaginable utilization of this medium. Fully programmable and continually changing light shows turn the vehicle into a downright eye-catcher and make the ride shine.

X-Train: The next step

The X-Car perfectly embodies the advantages of an individual vehicle – but of course, rides with trains also have their

Newly developed X-Train

The coaster "idea" is obvious – a train with high capacities plus as many advantages of the successful individual vehicles as possible. The developers at Maurer Rides have embraced this great dream which led to a surprising outcome: X-Train, a totally self-contained, innovative and unique product partnered with the X-Car.

When it comes to capacity, the X-Train steps in at the very top: up to 36 seats with 4 X-Seats per row. That's how far a fascinating machine with a powerful impression has evolved.

The two outer seats have been misaligned backwards to allow the ride guests in the middle of the four-seat rows an unobstructed view to the side. The misalignment is only large enough to make sure that the guest does not get the feeling he or she is sitting in an individual seat and naturally has contact with neighboring guests.

Optional: Firm floor or floorless

Characteristic for the X-Train is the one-of-a-kind combination of normal seat configuration in the middle with a floor and floorless under the outer seats. The outer passengers literally ride beside the tracks – without a floor panel! Each guest has the choice of a secured floor panel under his feet by taking a middle seat or a thrill and freedom experience by taking a floorless outer seat. Floorless beside the track means an unrestricted view downwards allowing an almost flying feeling, or an intensive ride element with thrill factor; e.g. a vertical drop into "emptiness". Seats that are located directly side by side and still provide two diverse ride experiences – that is one of the innovations that make the X-Train so unique.

Light and simple

In comparison to earlier floorless coasters, a great advantage is the extremely low balance point which allows a lot of freedom with the ride layout. Compared to conventional trains with four-row seating, the X-Train with its outer seats is noticeably lighter – a clear gain for the dynamics and

the appearance. Boarding at the station is very simple and works without complex additional mechanisms. The station platform laterally reaches as far as the tracks and from there the middle seats are boarded conventionally. The station platform height is constructed so that the guests can easily board the outer seats from there – comparable to the boarding scenario of common inverted coasters.

Fast and dynamic

Maurer developed the product design with its customary high quality: The clear lines accentuate its dynamics. The premium-class, partially transparent materials, the best possible seat ergonomics and the highest boarding comfort define the X-Train's design.

The especially large wheels permit speeds of far above 100 km/h so that performance

regards to coaster size and height is almost unlimited. On the other hand, Maurer also envisions the possibility of a train with less than 36 seats: Even an eight-seater model that would allow a floorless feeling for individual vehicles is feasible.

Modular concept

The track width is larger than with the X-Car and the additional room on the vehicle floor can be used with high efficiency; e.g. for a chain dog and simultaneously a LSM magnet and brake fin so that after the inclined or vertical lift an additional launch can be integrated into the ride. In this sense, many further elements can be added modularly to enhance the X-Train's attractiveness. As with the X-Car, the entire spectrum of high-tech and media with speakers, individual song choice, video cameras, LED-lighting and display is possible.

Conclusion

The new X-Train is based on the experience of the X-Car and enables the traditional roller coaster train to launch into the future. Together the train and the individual vehicle set free a lot of possibilities for the construction of challenging top-quality roller coasters with unique unheard-of attractions. Roller coasters are more alive than ever!



direct sound experience



Simulated Amusement

When it comes to modern-day roller coasters, uniting thrills and safety equals the ideal partnership. Researchers at the University of Duisburg-Essen have now perfected this combination.

Text: CHRISTOPH WENNEKERS

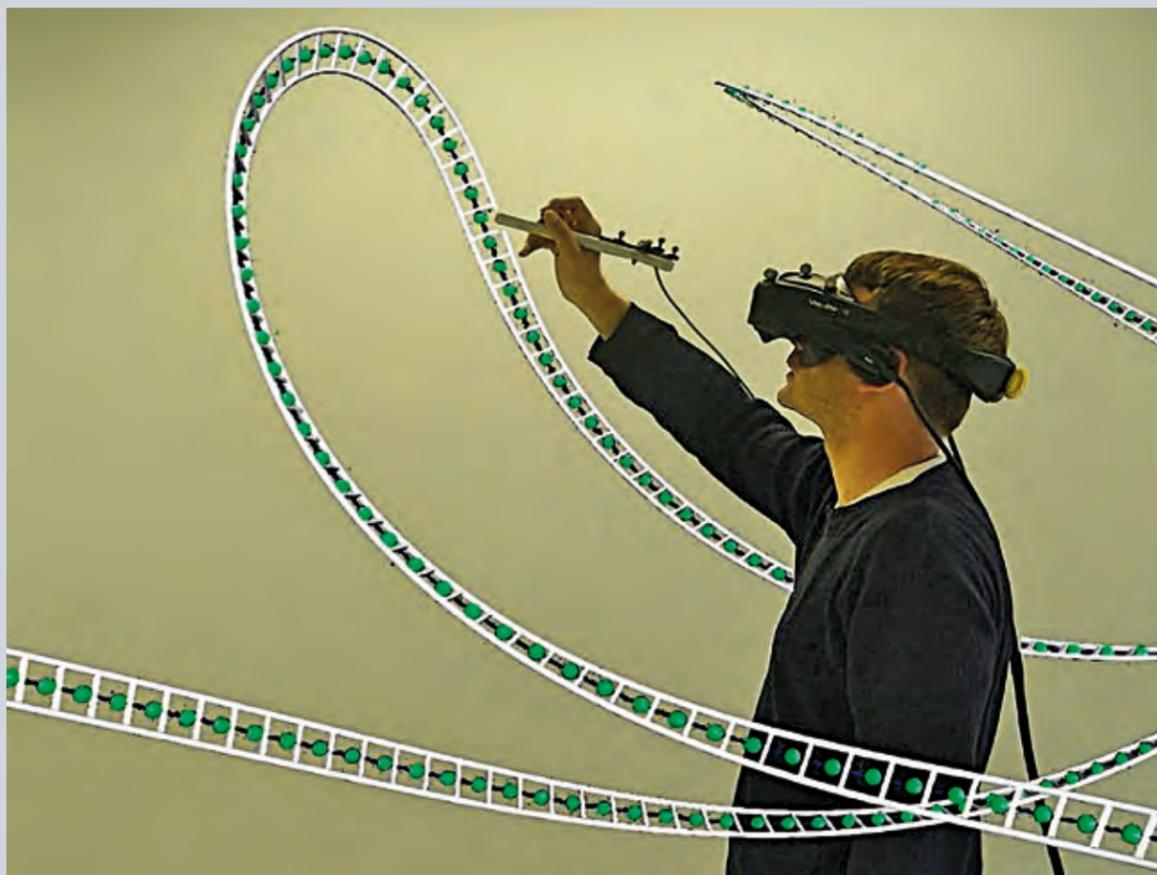
"We develop tools for making track system planning more efficient – and, at the same time, for making roller coasters safer," says Dr. Dominik Raab, academic advisor for the Department of Mechanics and Robotics at Germany's University of Duisburg-Essen. The researchers' basis tool is a piece of custom software that makes it possible to design three-dimensional tracks. This makes new track systems "experienceable" as soon as they are designed on the computer.

In addition to the virtual experience, the scientists from Duisburg can also create an authentic roller coaster atmosphere – even including the upset stomach. It is all done using the motion simulators for research purposes. There are three of these simulators in the world.

The Robocoaster industrial robot takes up 144 square meters, weighs around five tons and can support up to 500 kg (1,100 lb). Its arm can be pivoted about six axes and four meters on each side and 6.5 m (21.3 ft) high. The maximum acceleration is striking, too. As Dominik Raab says, "Our simulator's 1.7 g are approximately analogous to the acceleration of a full jumbo jet at takeoff." This means that customers who order a roller coaster for their amusement park can sit in a real seat before the first meter of track is ever built; a virtual reality helmet creates the accompanying visual experience. And researchers are continuing to refine the perfect illusion, as Dr. Raab notes: "Sound effects will soon be possible, too."

Complex calculations, shorter development times

Whereas it used to take one and a half to two years at the drawing board to design a new roller coaster, today's development



Welcome to virtual reality: researchers in Duisburg are working on simplifying the complicated design of a roller coaster to an even greater degree.

phase only takes six to twelve months. Still, track planning is anything but a simple matter. The ride involves fifth-magnitude curves. When several cars are out on the tracks, safety space has to be timed just right. Statics and dynamics must be designed for reliable, long-term structure and car use. To ensure smooth operations, the track is additionally straightened and calculated to see whether the momentum at the highest track position is adequate to allow the car to reach its goal by itself and at the perfect speed.

When it comes to reasonable acceptable force for humans, factors such as transver-

sal and vertical acceleration in connection with ride time also play an important role – in a multi-seat roller coaster car, the force is different for each and every seat. Still, threshold values for passengers must be continually observed no matter where the roller coaster is; these values are strictly regulated in Germany, for example, with a DIN standard. The amusement ride designers' motto: pure enjoyment and maximum safety. Professor Andrés Kecskeméthy and his team have been developing planning software for roller coasters for years. He describes the challenges by noting, "We are carefully getting closer and closer to these threshold values."

The software not only makes the planning and graphic representation of a structure possible, but also provides the coordinates for production with which the tracks are manufactured and erected. And just like digging a tunnel from two ends, the calculations have to be perfect. After all, it would be unimaginable that the beginning and end of a track do not match up.



During the simulation of a roller coaster ride, you can display the magnitude of the applied forces (= arrow length) and in which direction they are being exerted (= arrow direction) at any time. The image shows the occurring forces at the individual wheel suspensions as red arrows.

A Team of Researchers and Roller Coaster Designers

The Department of Mechanics and Robotics at the University of Duisburg-Essen knows roller coaster design. Together with roller coaster producer Maurer Rides, Professor Andrés Kecskeméthy's team has been developing software for designing amusement park rides for seven years. The Rip Ride Rockit roller coaster for the Universal Orlando Resort in Florida is the latest innovation from Maurer Rides, a company from Munich, Germany. It unites the latest music, breathtaking maneuvers, and a sophisticated audio and video system. The non-inverted loop was designed using the software from Duisburg that allows for a "breathtaking variation of air-time, panoramic view, and compression."

For more information: ■ www.uni-due.de/lmr
■ www.maurer-rides.com

HEAD OVER HEELS IN THE MIDDLE EAST

A new project for the Munich-based roller coaster architects for the Middle East!

The X-Car XV 2000 "G-Force" Standard Coaster Set to open in 2010

The V in the name stands for the X-Car coaster's most prominent feature: V as in vertical coaster, which is realized by means of a one-of-a-kind loop lift inside an inverted loop.

Compact and varied elements

One of the most outstanding features of the new X-Car coaster is the astonishing variety of ride elements using only 385 m (1,263 ft) of track. The layout is extremely compact.

The station is situated 10 m (33 ft) above the ground, which provides more fun and variety for the passengers, while also rendering the braking system simple and cost efficient. The coaster uses magnetic brakes. The station has been given an impressive, modern design.



Drayton Manor in England: the XV 2000 G Force has been providing a spectacular ride and ensuring continuous spectators since 2005.

Up and down

After accelerating out of the station, the X-Car races down to the Humpty Bump Lift. The Humpty Bump Lift then sends passengers on a vertical lift towards a breathtaking upwards roll with inverted loop and -1 g. The train then drops down along the loop at a speed of 70 km/h (45 mph). The plunge is followed by a steep, high camelback that subjects passengers to up to -1 g and a considerable amount of airtime.

The camelback's remarkable shape characterizes the look of the G-Force coaster, making it an attraction in the amusement park that simply can't be overlooked.

No time to breathe

At this moment, though, X-Car passengers aren't likely to be thinking about how the ride looks from below. With-

out a second to catch their breath, it's off toward the Bended Cuban Eight, a thrilling, new inverted loop combination developed just for the G-Force. Like the Humpty Bump, its shape is based on an aerobatics trick and resembles a vertical eight bent 180° in the middle. It also includes two more inverted loops. As a spectacular grand finale to the experience, a high, banked curve takes passengers back to the station. The ride on this unique coaster lasts for around 50 seconds. Two X-Car tandems offer a capacity of approximately 1,100 pph.

One tandem or two individual X-Car versions can also be created for parks with lower capacity requirements. These trains have a capacity of 550 pph. A third tandem allows for more comfortable entrance and exit times at maximum capacity. The track length can also be extended to a total of approximately 530 m (1,740 ft) in the same base area.

Technical Data: XV 2000

- Floor space: 80x37 m (262x121 ft)
- Total height, structure: 24 m (79 ft), track 22.3 m (73 ft)
- Difference in height, track: 20.8 m (68.2 ft)
- Track length: 385 m (1,263 ft), expandable to 530 m (1,740 ft)
- Top speed: 83 kph (51.6 mph)
- Accelerations: from -1.3 g (negative!) to +4.2 g
- Net ride duration: 50 s
- Capacity: 1,100 persons/h
- Height of station track
 - above ground: 10 m (32.8 ft)
 - above the lowest track point: 8.5 m (27.9 ft)



Spin the Loop

It'd be particularly easy to envy the roller coaster developers at Maurer Rides sometimes. When you see how they create new advancements time and again from a combination of expert knowledge and innovation, there's no other explanation than to acknowledge that they do their "job" with inexhaustible creativity and enjoyment. The latest example is the spinning coaster with loop. As the first spinning coaster to include a loop, it is guaranteed to be a milestone in the history of spinning coasters and an absolute eye-catcher. The non-inverted loop is the most prominent aspect of the new SC 2500 standard spinning coaster, which is simply known as The Loop.

It wasn't long after the new non-inverted loop aerobatic premiere was constructed for Universal (see articles on this page and on page 2) that the Bavarian roller coaster designers decided to up the ante. They kept playing with their in-house software XTRAC until they determined that the complex design could also be used with a spinning coaster.

Lift and loop

Immediately after leaving the station, a sharp right turn takes full advantage of the spinning options available creating a nice smooth spin. While still in this smooth spin, it's full speed ahead to a height of 22 m (72 ft) followed by a sharp drop back to the ground. But there's no time to take a breath, because the spin loop coaster's

highlight is up next: the 18-m (59-ft) non-inverted loop offers a magnificent panorama and a never-before-seen vertical roll during both the ascent and the descent.

Airtime and spiraling

The spinning car then shoots through a camelback with a maximum amount of airtime for a spinning coaster. For the finale, an Immelmann turn, a spin, and a unique flip give passengers a true spinning sensation one last time. The flip is similar to a camelback, but one that changes directions at its summit. The ride continues on with just as much variation as it heads back to the station with a slalom and an easy 540° spin.

Despite the thrilling aerobatics, the SC 2500 Loop is completely family-friendly. Moderate accelerations, lack of inversion, and the smooth ride Maurer coasters are known for all equal one great ride with a high degree of entertainment value. The track is 550 m (1,800 ft) long and requires an area of 60x50 m (200x169 ft).

Facts

- Type: spinning coaster
- Track length: 550 m (1,800 ft)
- Height: 22 m (72 ft)
- Max. speed: 70 km/h (43.5 mph)
- Number of cars: 7 spinning cars
- Base area: 60x50 m (200x169 ft)

LoopLaunch!



Compact and spectacular – that's the formula Maurer Rides uses to cause a sensation time and again. The latest invention? The LoopLaunch, presented for the first time at the EAS in Amsterdam.

The compact coaster and its innovative non-inversion loop is a spectacular crowd-pleaser because it combines airtime, loop, and launch effects that are perfect for the entire family, tapping into a broad target audience.

Launch – and relaunch

Passengers experience the launch effect right after leaving the station: the X-Car tandem is literally shot out of the station and builds up momentum from there. When terminal velocity is reached as the car passes through the station for third time, the loop is completed.

All in all: Six seconds of airtime

The loop screw means lots of airtime with a lot of thrill: in the non-inversion loop, passengers are twisted halfway around

the tracks during the ascent and descent so that old and young can enjoy the loop without being in an overhead position. This unique form of entertainment that caters to every taste delivers lots of airtime, but airtime that's well portioned. With each round, the LoopLaunch provides around one second of airtime twice – a duration otherwise only reached with two high camelbacks. After three rounds, as much airtime has been generated as with a large Out and Back roller coaster,

Facts

- Type: X-Car Vertical Coaster
- Capacity: 550 pph
- Track length: 90 m (295 ft)
- Height: 30 m (98 ft)
- Max. speed: 76 km/h (47 mph)
- Number of cars: 1 x 12-seater X-Car Tandem
- Base area: 50x10 m (164x33 ft)

Introduced in Amsterdam

a real airtime booster. In addition, passengers enjoy a phenomenal panorama position at a height of 35 m (115 ft). The final drop, compression, and flying acceleration make every round a spectacular, eventful ride.

As a standard feature, the ride passes through the loop three times and an "on-the-fly" thrust accelerates the X-Car tandem each time it passes through the station. LSM technology is used for braking.

Extra round at the push of a button

The kind of elation caused by launch acceleration and airtime begs for repetition. That's why the operator can thus add one or two additional rounds at the push of a button, just like the SkyLoop. For passengers, this means the suspense of wondering if there will be a bonus round builds right up to the very end. For the sake of completeness, it should also be mentioned that passengers are seated in shoulder-free and highly comfortable X-Seats for a maximum feeling of freedom. The X-Seat is approved for heights of 1.25 m (4.1 ft)

and over, making it particularly interesting for the family target group.

Low space requirements

An eye-catcher with impressive, unique architecture, a power-packed LSM launch, ample airtime, the enjoyment of counting the rounds: for this maximum level of appeal, the LoopLaunch only requires a base area of 50 x 10 m (164 x 33 ft), making it the perfect size for any park. The ride accommodates 550 pph. Its height of around 30 m (98 ft) makes it the perfect alternative for parks where the 50 m (164 ft) high SkyLoop is just too much of a thrill.

The LoopLaunch additionally features low maintenance and operating costs. Thanks to the latest magnet technology, the recurring launch effect is generated without wear. It requires a minimum level of mechanics and controls.

The energy storage system that comes "standard" further increases its cost-effectiveness – guaranteeing the rides great marketing appeal is coupled with a small operational price tag.

Worldwide Recognition, even in bridge construction

Sutong – a bridge of superlatives; Maurer supplies essential technology



The world's largest cable-stayed bridge is located not far from Shanghai. Since the summer of 2008, the Sutong Bridge has been guiding traffic across the Yangtze River and is considered a bridge of superlatives.

It features the longest stay cables and the largest expansion joints in the world. Maurer Söhne supplied two of its essential components: stay cable dampers and roadway transitions. Even if it doesn't look like it at first glance, Maurer delivers technological performance with the same superior expertise for both roller coaster construction and bridge construction: dealing with forces in motion.

A bridge's rectilinearity, the ability to form a straight line, can seem downright monotonous when compared to a roller coaster, but the acting forces upon the bridge are manifold and exceedingly difficult to calculate due to their complexity.

The cable-stayed bridge serves as a good example here.

Several figures can be used to convey these dimensions. The Sutong Bridge is over eight kilometers (five miles) long and its main span width in the middle is 1,088 m (3,570 ft). Two 306-meter (1,004-foot) high pylons with a total of 272 cable-stayed support the main load of the two-kilometer (1.2-mile) long core. The longest cables are 541 m (1,775 ft) long.

Dangers: wind and rain

Yet it's not traffic on the six-lane road that presents the greatest challenge, but instead the wind and rain that can make cable-stays, and thus the entire bridge, swing. 200 Maurer Söhne cable dampers stabilize that oscillation. They extend the cables' lifespan and make it possible to use the bridge even in heavy winds.

But the decisive factor for the dampers' effect is whether their force has the optimum effect on the actual oscillation. Dampers that are too weak do not provide enough effect; dampers that are too strong just shorten the cable, which then continues to swing unobstructed beyond the damper. In addition, various damper response forces may become necessary depending on the oscillation eigenmode, one of the normal vibrational modes of an oscillating system. Magneto-rheological dampers were Maurer Söhne's solution to this complex challenge. Electronic systems allow its damping parameters to independently adjust to the force required at that moment. The technology was developed by Maurer Söhne within the framework of the EU-funded SPACE project – and it was precisely this expertise that allowed the Munich-based company to win the contract.

The longest 48 stay cables on the Sutong Bridge are dampened using this innovative technology. An additional 152 cables are equipped with passive linear viscous dampers that are precisely adjusted for optimum response force and offer consistent viscosity.

World's largest expansion joints

Maurer also supplied the expansion joints for the Sutong Bridge, which is also the largest of its kind in the world. Expansion joints are added where the bridge meets the mainland. They absorb the bridge's longitudinal movement, usually resulting from thermal expansion, traffic volume, wind, or earthquakes. The record expansion joints used for the Sutong Bridge can offset movements of up to 2.60 m (8.53 ft).

The Munich-based company is considered the world market leader for expansion joints. Proof of this position is the fact that "Maurer expansion joints" has become a fixed term in bridge construction when talking about roadway transitions.

New member of the Management Board: Ralf Reifferscheidt



Ralf Reifferscheidt joined the Maurer Rides Management Board on October 1st, 2009. He will provide sales support to his co-director, Managing Director, Mr. Horst Ruhe, and is additionally responsible for development, construction, order processing, and service.

Ralf Reifferscheidt brings extensive experience to the position: not only has he been active in industrial and specialized machinery construction for over 20 years, but as a graduate engineer is also considered an outstanding technician.

Maurer's Lectures and Training

Maurer Rides' employees regularly give lectures at seminars to specialists and pass on their knowledge based on Maurer Rides' reputation for high technological standards and its decades of experience.

International Podium

AIMS International (Amusement Industry Manufacturers and Suppliers Trade Association) holds its safety seminars twice a year. Maurer supported the AIMS in Branson, Missouri this past January 2009 by giving two lectures for manufacturer/supplier classes. Numerous audience members were given the latest technological information. There was also a Maurer Rides exhibition booth throughout the three days.

"Due to an overwhelming response, we have decided to continue to support AIMS International with our expertise," explained Guido Bäuerle, Customer Support Manager at Maurer Rides. Maurer Rides will once again speak at the manufacturer/supplier class at the upcoming AIMS event in Las Vegas this November 2009.

TÜV Cooperation

Maurer Customer Support has supported TÜV Industry Service GmbH in providing qualifications for operators since 2007. Module two of the seminar on advanced amusement park qualifications deals with the operation, maintenance, and upkeep of amusement rides. Guido Bäuerle provides reports and lectures based on over 20 years of experience with various manufacturers. He discusses the topics of structural safety, operations, maintenance/upkeep, and operating manuals in a two hours session.

This involvement with TÜV is part of Maurer Rides' contribution to continuing education for operators, thereby improving amusement park safety.

Maurer Rides: certified maintenance and service technicians

Maurer has been holding training seminars for Maurer Rides-certified maintenance and service technicians at its Munich site since 2003. To date, 40 individuals have participated in the seminar, most recently held in February 2009. The next opportunity to send customers and technicians to the training session is in November:
Date: 11/30 to 12/4/2009

Space is still available. Maurer Rides is happy to provide a detailed proposal upon request.

Please contact:
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Forces in Motion

Once a year, Maurer's Forces in Motion slogan takes on a human element instead of a technical one: when employees set their own forces in motion at Munich's B2RUN company run.



Maurer was once again represented at the race in 2009 with a 35 member Maurer Race Team that ran the approx. 6.75 km (4.12 miles) circular course through Munich's world-renowned Olympic Park. The race ended with the home stretch leading through the massive marathon gate into the Olympic stadium.



A total of 30,000 runners participated in 2009 and the Maurer Race Team earned an outstanding 169th place out of 2,501 participating companies. Just to make it amusing: Forces in Motion reached the finish line decked out in Bavarian lederhosen in top shape.

Landmark, Advertising Space, Theme Focus

SkyLoop is an attractive starting point for a range of applications



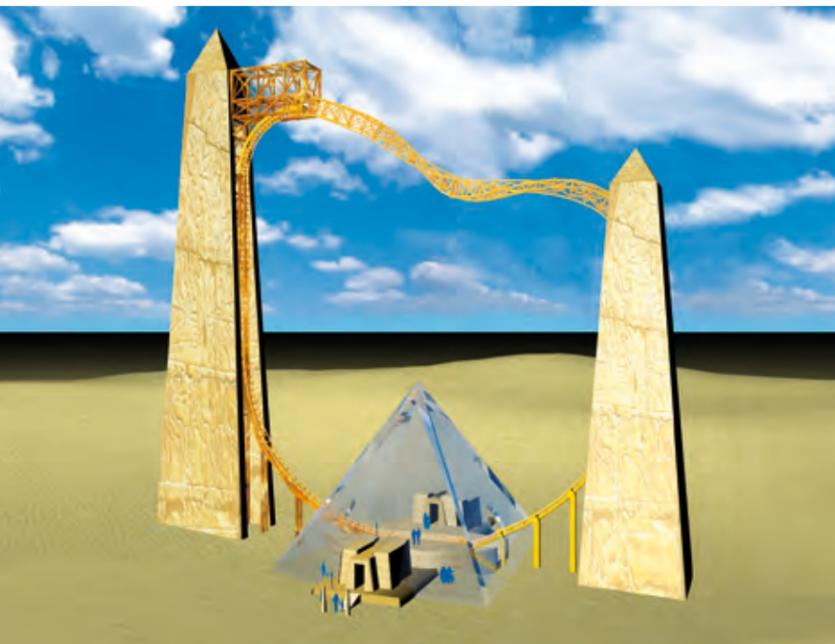
SkyLoop – the options for integrating the SkyLoop into a theme park concept and using it in different ways are as seemingly endless as the “skies” from which it gets its name.

Variation 1: Landmark

A height of 50 m (164 ft) simply speaks for itself. Even large, spectacular parks can use the SkyLoop as an eye-catcher. For smaller parks, it presents the rare chance to have an attention-grabbing attraction in a relatively limited amount of space.

Variation 2: Area utilization

It's impossible to overlook: the tower's height offers a vast amount of space that can be individually themed for each park. The tower area can be covered relatively easily and these covers can take the form of visual color and theme concepts or self-advertising – as is the case at Universal (see page 2).



Variation 3: Theming

A tower is a tower is a tower? Maybe, but not when it comes to the SkyLoop. The tower can also simply be used as a starting point for individualized theming, such as an Egyptian pyramid or a Chinese pagoda, as shown in the pictures.



SkyLoop for China

First order for Maurer Rides in China



On the back of its successful streak in Germany and the USA, the SkyLoop is on its way to China. This will be Maurer Rides' first China coaster project.

The SkyLoop will be a main attraction at the new World Joyland park in Changzhou, a city located between Shanghai and Nanjing. The amusement park is brand new and is set to open in late 2010 with the SkyLoop.

The SkyLoop's distinguishing features include the X-Car, Humpty Bump Lift, inverted loop, 360° loop screw, and 105-km/h (65-mph) vertical drop. Simply listing these features fails to do justice to the feelings aroused by the slow vertical climb to a dizzying height of nearly 50 m (152 ft) upside down, with an unsecured upper body and the sense of being pulled out of your seat – it's simply breathtaking.

But the decisive criterion for park investors is really the straightforward investment costs. SkyLoop offers a high level of attractiveness, both optically and in terms of ride experience, with minimal space requirements and investment. SkyLoop is also upgradeable.

Technical Data

- Track length: approx. 150 m (490 ft)
- Surface area: 55 x 4 m (180 x 12 ft) (without station)
- Max. height (track middle): 46.20 m (152 ft) (world's highest inversion)
- Overall height: 52 m (170 ft)
- Cars: 1 tandem X-Car (2 x 6 individuals)
- Ride time (without entry/exit): approx. 1 min.
- Capacity: approx. 550 pph
- Max. speed: approx. 105 km/h (65 mph)
- Min./max. vertical acceleration: -1 g/5 g
- Number of inversions: 2

Response

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

- MAURER XV 2000
- MAURER Loop-Launch
- MAURER Spinning with Loop
- MAURER X-Car Music
- MAURER X-Train
- MAURER SkyLoop
- Maurer Customer Support
- Other _____
- Please contact me

_____ Last name, first name

_____ Company

_____ Department

_____ Address

_____ Address

_____ Phone

_____ Fax

_____ E-mail

Fax: +49 (89)32394-355

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

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