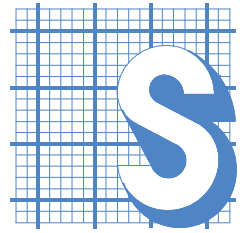


**INGENIEURBÜRO
STENGEL GmbH**

**Stahlbau
Baustatik
Maschinenbau
Fliegende Bauten
Custom Software**



Ing.-Büro Stengel GmbH · Nesselwanger Straße 24 · 81476 München

Nesselwanger Straße 24
D- 81476 München
Telefon (089) 74 55 17 - 0
Telefax (089) 74 55 17 - 44
e-mail RCStengel@aol.com

Ihr Zeichen

Ihre Nachricht

Unser Zeichen

Datum
December 31, 1999

CURRICULUM VITAE AND PROFESSIONAL CAREER

Born 22nd August 1936

1959 - 1962 Engineer student at the University of Kassel, Germany.

1962 - 1966 Diploma Engineer student at the University of Munich, Germany.

1965 Foundation of this consulting engineer office, which at this time employs 10 people with emphasis in the field of amusement-rides.

1967 - 1968 Lecturer for static and steel construction at the University of Munich (8 hours weekly).

1974 Member of the german standards committee, "DIN-Deutsches Institut für Normung e.V.", DIN 4112, specifically for: Temporary structures, fair-ground amusements; directives for dimensioning and construction. Also regarding DIN 1055 - Part 4 - Windloads on structures.

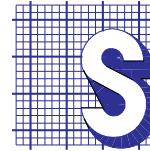
1983 Foundation of a second company with a partner, Dipl.-Ing. Paul Morsbach. The activity of "Amusement Park Safety Consultants" was exclusively for safety inspections at Amusement-Parks in the Netherlands, England, France and Belgium and was terminated in the year 1992.

1988 Member of a research group "Strain on Passengers Limit Values for Roller Coasters", Germany

1992 Appreciation of Engineer Award, Germany, "Quintuple Loop –



© Andreas Fechner



Roller Coaster"

12.9.93-25.9.93 Expert Witness, Edmonton, Canada,
"Triple Five - Roller Coaster Accident"

1995 Member of CEN/TC 152/WG1 (European Committee for
Standardization) "Fairground and Amusement Park Machinery and
Structures - Safety"

We provide any or all of the following professional services for all rides (portable or permanent installations), i.e. Roller-Coasters, Loops, Carousels, Giant-Wheels, Bumper-Cars and interlay all others existing or in the concept/development stage.

Design

Computation of all forces react on the passenger

Determination of all units including drives and brakes

Stress analysis, structural analysis and fatigue analysis

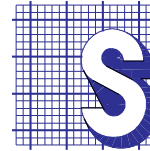
Drawings for rail-pipe, track bending and tube-development.

Most of our projects are checked by TÜV "Technischer Überwachungs-Verein Bayern-Sachsen e.V., Abt. G2-BTS", Postfach 21 04 20, 80674 Munich, Germany.

We developed special computer programs so we are able to design tracks or flight-paths of roller coasters and all types of amusement-rides, to check and optimize them to get all forces reacting on the passengers for each motion even for swinging gondolas.

After more than 35 years of experience in this highly specialized field of amusement rides the procedure we feel is best for everyone if a manufacturer or designer of the amusement-ride provides us with the concept and preliminary drawings, then we compute all the forces reacting on the passenger, then we do the stress-, the structural- and the fatigue analysis.

The manufacturer of the amusement-ride will do the electric-, pneumatic-, hydraulic- and shop drawings from the statical data we provide.



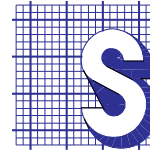
Partial list of manufacturers we provided services for:

Germany:

| | | |
|---------------------------|----------------------|----------------------|
| Firm of A. Schwarzkopf | Industriestr. 2 | 86505 Münsterhausen |
| Firm of Zierer GmbH | Moosgasse 4 | 94560 Offenberg |
| Firm of Mack GmbH + Co | Mauermattenstr. 4 | 79183 Waldkirch |
| Firm of Fähtz | Industriestr. 1 | 35796 Edelsberg |
| Firm of Weber | Am Dammacker 9-12 | 28201 Bremen |
| Firm of BHS | | 82380 Peissenberg |
| Firm of Ihle | Industriestr. 52 | 76646 Bruchsal |
| Firm of Becher | Königstr. 35 | 51645 Dieringhausen |
| Firm of Stein Anlagenbau | Industriestr. 17/19 | 86505 Münsterhausen |
| Firm of Magnet-Motor GmbH | Moosstr. 14 | 82319 Starnberg |
| Phantasialand | Berggeiststr. 31 | 50321 Brühl |
| Hansaland | | 23730 Neustadt |
| Firm of Maurer Söhne | Frankfurter Ring 193 | 80807 München |
| Konstruktion Bruch | Hauptstr. 30 | 86505 Münsterhausen |
| LHS Lastaufnahmemittel | Rhinstr. 46 | 12681 Berlin |
| Wieland Schwarzkopf | Reischenaustraße 4 | 86473 Ziemetshausen |
| Gerstlauer Elektro GmbH | Hirschfelder Weg 4 | 86476 Neuburg/Kammel |

Netherlands:

| | | |
|---------------------|--------------|-----------------|
| Firm of Vekoma B.V. | Schaapweg 18 | 6063 BA Vlodrop |
|---------------------|--------------|-----------------|



Switzerland:

| | | |
|------------------------------|----------------------|---------------|
| Firm of Bolliger & Mabillard | Chemin d. Dailles 31 | 1870 Monthey |
| Firm of Giovanola Freres SA | Case Postale 271 | 1870 Monthey |
| Firm of Intamin | P.O. Box 95 | 8833 Wollerau |
| Firm of Sarna | | 6060 Sarnen |

Italy:

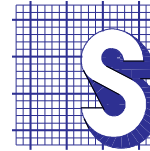
| | | |
|------------------------|---------------------------|----------------------------|
| Firm of S.D.C. s.r.l. | Via E. Lazzaretti 2A | 42100 Reggio Emilia |
| Firm of Cosmont s.r.l. | Via Sacco e Vanzetti | 42021 Ghiardo di Bibbiani |
| Firm of Zamperla | Via M. Grappa 7 | 36077 Altavilla -Vicantina |
| Firm of Ceti | Via F. Santi 5 | 42025 Cavriago |
| Firm of Sirio | Via F. Santi 5 | 42025 Cavriago |
| Firm of Barbieri | Via Cocci 11 | 42100 Reggio Emilia |
| Firm of 3B-Bertazzon | Sernaglia della Battaglia | Provinz Treviso |
| Firm of S&MC | | 42100 Reggio Emilia |
| Firm of Eurorides | Via Colombano 70 | 45030 Castelnovo |
| Firm of Interpark | Via Marconi 34 A/B | 41057 Spilamberto |

U.S.A.:

| | | |
|------------------------------|---------------------|-----------------------------|
| Firm of Premier Rides | 412 Headquarters Dr | Millersville 21108 Maryland |
| Firm of Roller Coaster Corp. | P.O. Box 888506 | Atlanta 30356-0506 Georgia |

Canada:

| | | |
|----------------|--------------------|-----------------|
| Firm of Forrec | 441 Ellesmere Road | Toronto M1R 4E5 |
|----------------|--------------------|-----------------|



Projects completed:

Roller Coasters:

217 different roller coaster types designed

(Wild Cat, Speed-Racers, Shuttle-Loops, Screws, Loopings, Double-Loopings, Triple-Loopings, Quadruple-Looping, Quintuple-Looping, Standup Coaster, Suspended Coasters, Spherical vault-coaster, Wooden Coaster, Inverted Coaster, Wild Mouse, Roller Coaster with spinning cars, Euro Star, Stratosphere Coaster, Dueling Coasters, Launch Coasters (LIM Linear Induction Motors), Powered Coaster, Liquid Coaster, etc.)

402 pieces have been built

206 additional roller coasters layouts (not built)

Carrousel:

90 different carrousel types designed

(Bobsled, Calypso, Octopus, Cyclon, Twist, Chair-o-plane, Waltzerfahrt, Round-Up, Paratrooper, Buggy Swing, Twister, Apollo, All-Round, Alpenblitz, Raupe, Enterprise, Hollywood-Star, Katapult, Wave Swinger, Helios, Musik Express, Pirate-Boat, Shuttle-Boat, Condor, Galaxy, Polyp, Taumler, Horse Carousel, Double-Tagada, Water Carousel, Moonraker, Spider, Flying Carpet, Tokaido, Dschunke, Columbia, Flying Saucer, Joker, Canyon Trip, Matterhorn, Mistral, Biplane, Metroliner, Windglider, Waikiki Wave, Speedy Gonzales, Super- Flip, Super-Wellenflieger, Krinoline, etc.)

584 pieces have been built

54 additional involved (improvement and modification)

Ferries Wheels:

22 Ferris Wheels types designed

33 pieces have been built

15 additional involved (improvement and modification)

Water Rides:

8 Flume Ride (Water ride) types designed

9 pieces have been built

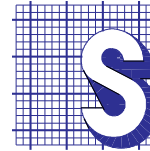
6 additional involved (improvement and modification)

Monorails:

7 Monorails types designed

7 pieces have been built

7 additional layouts (not built)



Bumper Cars:

**6 Bumper Cars (skooter) types designed
33 pieces have been built**

Dark Rides:

**14 Dark Rides types designed
14 pieces have been built
2 additional involved (improvement and modification)**

Cinemas:

**5 Portable Cinemas types designed
31 pieces have been built
6 additional cinema layouts (not built)**

Partial list of locations where projects we worked on are operating:

ADVENTURE WORLD, USA

ALTON TOWERS LEISURE PARK, NORTH STAFFORDSHIRE, ENGLAND

ALTWEIBERMÜHLE, TRIPSDRILL, GERMANY

AMUSEMENT PARK DE EFTELING, KAATSHEUVEL, THE NETHERLANDS

AMUSEMENT PARK, ARGENTINA

AMUSEMENT PARK, BRAZIL

AMUSEMENT PARK, BRISBANE, AUSTRALIA

AMUSEMENT PARK, CHINA

AMUSEMENT PARK, DOMINICAN REPUBLIC

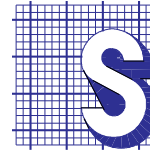
AMUSEMENT PARKS, ALGERIA

AMUSEMENT PARKS, SAUDI ARABIA

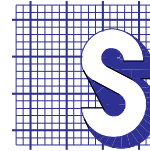
ASTROWORLD, HOUSTON, TEXAS, USA

BAKKEN PARK, COPENHAGEN, DENMARK

BATTERSEA PARK, LONDON, ENGLAND



BELLEWAERDE-PARK, IEPER, BELGIUM
BERJAY STAR CITY, MALAYSIA
BOBBEJAANLAND, LICHTAART, BELGIUM
BUSCH GARDENS, TAMPA, FLORIDA, USA
BUSCH GARDENS, WILLIAMSBURG, VIRGINIA; USA
CANADAS WONDERLAND, MAPLE, ONTARIO, CANADA
CEDAR POINT AMUSEMENT PARK, SANDUSKY, OHIO, USA
CHURPFALZPARK, LOIFLING, GERMANY
DIUNRELL ATTRACTIEPARK, WASSENAAR, THE NETHERLANDS
DRAYTON MANOR, GREAT BRITAIN
DREAMLAND AMUSEMENT PARK, MARGATE, KENT, ENGLAND
DREAMLAND, YOKOHAMA, JAPAN
EKELUND PARK, HELSINKI, FINLAND
EMPIRE AMUSEMENT PARK, JOHANNESBURG, SOUTH AFRICA
ENTERTAINMENT CITY OF KUWAIT, KUWAIT
EURODISNEY, PARIS, FRANCE
EUROPA PARK, RUST, GERMANY
FANTASYLAND, ANCOL, JAKARTA, INDONESIA
FORT FUN, BESTWIG-WASSERFALL, GERMANY
FREIZEITPARK KIRCHHORST, HANNOVER, GERMANY
FREIZEITPARK NIEDERSACHSEN, VERDEN, GERMANY
FUNTASTIC AMUSEMENTS, PUYALLUP, WASHINGTON, USA
GATESHEAD CENTER, NEWCASTLE, ENGLAND
GORKY PARK, MOSCOW, RUSSIA
GOLD REEF CITY, JOHANNESBURG, SOUTH AFRICA



HANSALAND, SIERKSDORF, GERMANY

HEIDEPARK, SOLTAU, GERMANY

HERSHEY PARK, HERSHEY, PENNSYLVANIA, USA

HOLIDAY PARK, HASSLOCH, GERMANY

HOLLYWOOD PARK, STUKENBROCK, GERMANY

INTERAMA AMUSEMENT PARK, BUENOS AIRES, ARGENTINA

KENNYWOOD PARK, WEST MIFFLIN, PENNSYLVANIA, USA

KNOTT'S BERRY FARM, BUENA PARK, CALIFORNIA, USA

KREEKEL PARK, APELDOORN, THE NETHERLANDS

KULTURPARK, BERLIN-TREPTOW, GERMANY

JANFUSUN FANCYWORLD, TAIWAN

LAGOON PARK, SALT LAKE CITY, UTAH, USA

LEGOLAND, BILLUND, DENMARK

LINNANMÄKI AMUSEMENT PARK, FINLAND

LISEBERG TIVOLI, GOTEBOG, SWEDEN

LUNA PARK, SYDNEY, AUSTRALIA

MÄRCHENPARK WOLFRATSHAUSEN, WOLFRATSHAUSEN, GERMANY

MANILA, PHILIPPINES

MARINELAND PARK, NIAGARA FALLS, ONTARIO, CANADA

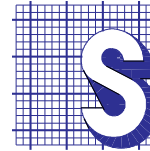
MCA, UNIVERSAL STUDIOS, USA

MELI-PARK, ADINKERKE, BELGIUM

MIRABILANDIA, RAVENNA, ITALY

MIRACLE STRIP AMUSEMENTS, PANAMA CITY, FLORIDA, USA

MOREY'S PIER, NORTH WILDWOOD, NEW JERSEY, USA



MURATA KOEKI AMUSEMENTS, TOKYO, JAPAN
NAGASHIMA KANKO KAIHATSU CO., MIE PREFIX, JAPAN
NAGASHIMA SPALAND PARK, NAGOYA, JAPAN
NAVELLAND, JAPAN
O.K. CORRAL, CUGES LES PINS, FRANCE
OAKWOOD LEISURE LTD., OAKWOOD, ENGLAND
PARAMOUNT'S CAROWINDS, CHARLOTTE, NORTH CAROLINA, USA
PARAMOUNT'S GREAT AMERICA, SANTA CLARA, CALIFORNIA, USA
PARAMOUNT'S KINGS DOMINION, RICHMOND, VIRGINIA, USA
PARAMOUNT'S KINGS ISLAND, CINCINNATI, OHIO, USA
PARC ASTERIX , PARIS, FRANCE
PARQUE DE ATTRACTIONS CASA DE CAMPO, MADRID, SPAIN
PERINORTE, MEXICO
PETER PAN'S PLAYGROUND, ENGLAND
PHANTASIALAND, BRÜHL, GERMANY
PLAYCENTER AMUSEMENT PARK, SAO PAULO, BRAZIL
PLAYLAND PARK, VANCOUVER, B.C., CANADA
PLEASURE BEACH AMUSEMENTS, BLACKPOOL, ENGLAND
PLEASURE WOOD HILLS, LOWESTOFT, ENGLAND
PONY PARK, SLAGHAREN, THE NETHERLANDS
PORTOPIALAND AMUSEMENT PARK, KOBE, JAPAN
PRATER, VIENNA, AUSTRIA
PURI MALL, THAILAND
REINO AVENTURA, MEXICO CITY, MEXICO
SAHARA HOTEL, LAS VEGAS, NEVADA, USA



SAMSON PARK TIVOLI, NIJMWEGEN, THE NETHERLANDS

SEACON, BANGKOK

SERENGETI PARK, HODENHAGEN, GERMANY

SILVER DOLLAR CITY, BRANSON, MISSOURI, USA

SIX FLAGS AMERICA, LARGO, MARYLAND, USA

SIX FLAGS DARIEN LAKE, DARIEN CENTER, NEW YORK, USA

SIX FLAGS FIESTA TEXAS, SAN ANTONIO, TEXAS, USA

SIX FLAGS OVER GEORGIA, GEORGIA, USA

SIX FLAGS GREAT ADVENTURE, LARGO, NEW JERSEY, USA

SIX FLAGS GREAT AMERICA, GURNEE, ILLINOIS, USA

SIX FLAGS KENTUCKY KINGDOM, LOUISVILLE, KENTUCKY, USA

SIX FLAGS MAGIC MOUNTAIN, VALENCIA, CALIFORNIA, USA

SIX FLAGS MARINE WORLD, VALLEJO, CALIFORNIA, USA

SIX FLAGS OVER MID AMERICA, EUREKA, MISSOURI, USA

SIX FLAGS NEW ENGLAND, AGAWAM, MASSACHUSETTS, USA

SIX FLAGS OHIO, AURORA, OHIO, USA

SIX FLAGS ST. LOUIS, ST. LOUIS, MISSOURI, USA

SIX FLAGS OVER TEXAS, ARLINGTON, TEXAS, USA

SLUG PLAZA, KOREA

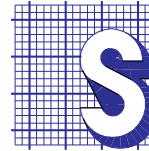
SPACE WORLD, JAPAN

SUZUKA CIRCUITLAND, JAPAN

TAJIAT ISLAND, BAGHDAD, IRAQ

TAMPEEREN SARKENNIEMI OY, TAMPERE, FINLAND

TERRA ENCANTADA, BRASIL



TERRA MITICA, BENIDORM, SPAIN

TIBI GARDENS, SALOU, SPAIN

TIVOLI FRIHEDEN, AARHUS, DENMARK

TIVOLI GARDENS, COPENHAGEN, DENMARK

TOSHIMAEN AMUSEMENT PARK, TOKYO, JAPAN

UNIVERSAL STUDIO'S ISLAND OF ADVENTURE, ORLANDO, FLORIDA, USA

V.D. BERG PARK, HELLENDORRN, THE NETHERLANDS

VENICE AMUSEMENTS, SEASIDE HEIGHTS, NEW JERSEY, USA

WALIBI-PARK, LIMAL, BELGIUM

WARNER BROS. MOVIE WORLD, KIRCHHELLEN, GERMANY

WEST EDMONTON MALL, EDMONTON, ALBERTA, CANADA

WHIMSYS, HONG KONG

WILLIAMS GROVE PARK, MECHANICSBURG, PENNSYLVANIA, USA

WORLDS OF FUN, KANSAS CITY, MISSOURI, USA

ZYGOFOLIS, NICE, FRANCE

Concluding we can say, based on the large number of amusement-rides we worked on, the experience of safety inspections in amusement-parks, combined with contact of amusement-rides-manufacturers and experience with the "Technischer Überwachungs-verein" (TÜV) in Germany, plus contact with amusement-ride-owners, the membership of the German-Standard-Committee DIN 4112, there is a high level of knowledge, you cannot find anywhere else.

Munich, December 31, 1999

Werner Stengel