THRILL RIDE - THE SCIENCE OF FUN
a *SONY PICTURES CLASSICS* release
Running time: 40 minutes

Synopsis

Sony Pictures Classics release of THRILL RIDE-THE SCIENCE OF FUN is a white-knuckle adventure that takes full advantage of the power of large format films. Filmed in the 70mm, 15-perforation format developed by the IMAX Corporation, and projected on a screen more than six stories tall, the film puts every member of the audience in the front seat of some of the wildest rides ever created. The ultimate ride film, "THRILL RIDE" not only traces the history of rides, past and present but also details how the development of the motion simulator ride has become one of the most exciting innovations in recent film history.

Directed by Ben Stassen and produced by Charlotte Huggins in conjunction with New Wave International, "THRILL RIDE" takes the audience on rides that some viewers would never dare to attempt, including trips on Big Shot at the Stratosphere, Las Vegas and the rollercoasters Kumba and Montu, located at Busch Gardens, Tampa, Florida. New Wave International was founded by Stassen, who is also a renowned expert in the field of computer graphics imagery (CGI). The film shows that the possibilities for thrill making are endless and only limited by the imagination or the capabilities of a computer workstation.

"THRILL RIDE-THE SCIENCE OF FUN" shows how ride film animators use CGI by first "constructing" a wire frame or skeleton version of the ride on a computer screen. Higher resolution textures and colors are added to the environment along with lighting and other atmospheric effects to heighten the illusion of reality.

Horror film personality Elvira, "Mistress of the Dark," makes a guest appearance to explain the technological challenges of adding "real people" to a computer-generated environment. After shooting live-action footage of Elvira in front of a large green screen, her image is digitally transmitted into a computer where animators create a hyper-environment around her.

THRILL RIDE-THE SCIENCE OF FUN also shows how technology for motion-simulators originally developed by the military and NASA as a flight-training device evolved into the ride simulators of today. The ride film designer's ultimate challenge is to combine this technology with the excitement of the roller coaster and the latest in computer graphics imaging and filmmaking. Using footage from some of the most popular ride films ever created, including "The Devil's Mine Ride," "Asteroid Adventure," and "Secrets of the Lost Temple," THRILL RIDE shows the capability of large format films to completely immerse an audience into the action on screen while producing one of the most exciting experiences on film.

THRILL RIDE - THE SCIENCE OF FUN

Production Notes

For centuries, people have been seeking thrills. As science and technology have increased, so has the state-of-the-art of thrill seeking. SONY PICTURES CLASSICS' release of the large format film "THRILL RIDE-THE SCIENCE OF FUN" traces the evolution of thrill rides from 17th century ice slides to realistic ride simulators of today. Shot in the 15-perforation, 70 mm film format invented by the IMAX Corporation, THRILL RIDE-THE SCIENCE OF FUN, takes advantage of the large Imax format screen by not only presenting breath-taking visuals but taking the audience along for the ride as well.

THRILL RIDE-THE SCIENCE OF FUN takes a fun and scientific look at the history of thrill rides. One of the most popular rides in amusement parks; today's technologically advanced roller coasters have their roots in 17th century Russia. In 1750, a Russian showman constructed wood-framed ice slides for sledding in St. Petersburg. This primitive ride, later became the inspiration for the creation of the roller coaster.

A Frenchman who was intrigued by the popularity of the wooden ice-slides that he saw in Russia created the world's first roller coaster upon his return to Paris in 1804. Inspired to create an ice slide more receptive to the weather in Paris, he built a large wooden hill with tracks instead of ice and designed a vehicle with wheels rather than sled runners to roll down the incline. In honor of the first Russian ice slides, this first version of the roller coaster was dubbed "The Russian Mountains." In fact, in other languages and across Europe, roller coasters are known as Russian Mountains to this day.

Roller coasters in the United States have their beginnings in coal mines. An inclined railway used to haul coal down a mountain in Mauch Chunk, Pennsylvania was converted in 1870 to carry people to the top of Mt. Pisgah and then drop them at a mild rate of speed. Once again, an entrepreneur saw a unique moneymaking opportunity. In 1884, LaMarcus A.Thompson built the first roller coaster in the United States at Coney Island. Thompson's roller coaster, called the Switchback Gravity Pleasure Railway, was only 450 feet long and featured cars that traveled 6 miles per hour over small hills.

Over the past 100 years science and technology have become more advanced and so has the art of thrill making. Roller coasters have developed from simple, mild rides to high-tech thrill machines. THRILL RIDE-THE SCIENCE OF FUN contains rare footage of vintage thrill rides from the turn-of-the-century to some of the wildest rides in existence today. From the multiple vertical loops of Kumba and Montu at Busch Gardens in Tampa, Florida, to the thrust of being shot up into space aboard The Big Shot (located over one thousand feet in the air atop the Stratosphere Hotel in Las Vegas) the film literally takes the audience for many such rides.

Despite advances in technology over time, the one thing that has remained the same for centuries is what makes thrill rides produce their greatest thrills. What makes roller coasters work is the result of Sir Isaac Newton's research, GRAVITY! A popular subject for many science classrooms, roller coasters are very simple gravity machines and offer a fun study in physics. Even Albert Einstein recognized "the science of fun" in his 1961 work "Evolution of Physics." He noted how the roller coaster is a perfect example of energy conservation in a mechanical system. From the potential energy that exist at the top of the first hill to its conversion into kinetic energy as it plunges down the big drop, rollercoasters use only gravity and momentum to perform their feats of terror.

Besides gravity, there are other tricks that a roller coaster designer can use to heighten the sense of danger. Much of thrill making involves the sense of illusion and the psychology of fear. Many of the same tricks that are used to make roller coasters thrilling are the same that a good storyteller uses to make a movie plot scary or exciting. One problem that plagues thrill ride designers is that once a roller coaster drops down its first big hill, the ride continues to lose momentum until its final finish. Just as a writer can make plot turns thicker to keep a movie audience on the edge of their seats, a roller coaster designer can enhance the illusion of speed at the end of the ride by making the turns tighter.

For years, filmmakers have been trying to capture the excitement of thrill rides on the big screen. To realistically simulate breath-taking experiences onto film, filmmakers had to create a format that would literally immerse the audience into the film itself. The standard size of feature film stock is 35 millimeters wide (about the size of a postage stamp). However, using a bigger stock of film can have a better image on screen.

Filmmakers soon came up with a variety of new ideas, including Vista-Vision that was an 8-perforation version of 35 mm film. With the notion that bigger is better, even larger formats began to appear such as Wide-Screen 5-perforation 70mm and 8-perforation 70mm. But moviemakers still were not satisfied. They wondered what if the image was placed sideways so that the size of the image would quadruple. The result of which is the15-perforation, 70mm film format created more than twenty-five years ago by the Imax Corporation. This film format is the standard used for most large format films, including THRILL RIDE-THE SCIENCE OF FUN. Other companies using this system today include IWERKS and Showscan.

The larger film format allows the filmmaker to surround the audience's peripheral vision and make it feel as though it is a part of the experience. Projected onto a screen more than 60 feet high, large format films give an all-new dimension to the term "The Big Screen!" Some thrills such as a roller coaster are created simply for fun or entertainment, but some thrill rides do serve a practical purpose as well. The military recreates or simulates several thrilling sensations as a way to test and train pilots to become accustomed to flying an airplane.

Unlike learning to drive a car, it is more practical to teach a new pilot how to fly a plane in a flight simulator than to risk crashing an airplane in mid-air. Designed like a cockpit, the

flight simulator can rise, tilt, rotate and fall just like a real airplane or helicopter. "THRILL RIDE" shows how commercial airline pilots in training can learn how to fly without risk to anyone, simply by monitoring the video screens of their cockpit windows, which recreate every detail of the airport and its surroundings. Using a virtual reality version of the San Diego Airport, everything from the width of the runway to the height of nearby buildings and location of telephone poles, has been recreated and is exactly where they would be if the pilot were flying a real plane into the airport.

NASA uses a motion simulator to train astronauts for the Space Shuttle missions. The device resembles a giant metal spider and offers invaluable experience to would be astronauts. A capsule pitched atop several metal legs is able to rock back and forth, perform roll maneuvers, and shake violently as trainees are put to the test to prepare for an actual launch. NASA also uses a spinning machine called a centrifuge to test astronauts to extreme forces of gravity. Located on top of a gigantic motor, the centrifuge is simply a large, spinning metal arm with a cabin suspended at one end. As the arm spins, the astronauts inside the cabin are subjected to immense g-forces.

As science has helped thrill-rides to become more technologically advanced, thrill ride makers have combined the simulated thrills of flight simulators with the pure excitement of the roller coaster and the art of moviemaking into ride films or ride simulators.

THRILL RIDE-THE SCIENCE OF FUN was created by a team of some of the leading experts in the field of ride films. New Wave International is one of the leaders in the large format and simulator ride film industry. In one year alone, New Wave International has released more films than all of its competitors combined.

Ben Stassen, a world-renowned expert in Computer Graphics Imagery (CGI) who produced the highly successful and precedent-setting ride film "Devil's Mine Ride", founded New Wave International. Roller coaster designers are limited by what is only physically possible; however, ride film moviemakers like Stassen have discovered that they are only limited by their own imagination.

Charlotte Huggins, producer of THRILL RIDE-THE SCIENCE OF FUN, has extensive knowledge of the large format film arena. Huggins produced the breakthrough ride film "Journey to Technopia." She also served as sequence and visual effects producer for Sony Pictures Classics "Wings of Courage" and several other notable large format films including "Honey, I Shrunk the Theatre" for Disney and "Special Effects" for WGBH/NOVA.

The white-knuckle action of THRILL RIDE owes its look to production designer Ray Spencer. Spencer is noted for his experience in designing dozens of thrilling ride films. He is responsible for the popular ride films "The Devil's Mine Ride," "Cosmic Pinball," "Asteroid Adventure," and "Secrets of the Lost Temple."

Ride simulators not only feature a ride film but also take advantage of technology used by the military in creating flight simulators and other types of simulators. There are several different versions of ride simulators. Unlike a ride film in which the audience members in a theater remain motionless in a stationary theater, the ride simulator theater or the seat themselves are actually designed to rock, rattle, and roll in complete sync with the action that is taking place on screen.

As with many Hollywood blockbuster action films, the computer has taken studios from the backlot to the desktop. For a filmmaker working at a computer graphics workstation, the sound stage, set construction workshop, art department, wardrobe, camera and lighting departments are simply a mouse click away. With Computer Graphics Imagery (CGI), filmmakers can take audiences to places never before deemed possible.

THRILL RIDE shows in depth how CGI is used with painstakingly concern for detail to achieve an incredible sense of realism. A five-minute computer generated ride film could take years to create. The entire process begins with a map that serves as a guide for the action that will take place on screen and how the audience will react with the environment.

The animator first begins to "construct" the computerized set by drawing a wire frame or skeleton version of the ride on a computer screen. The skeleton drawings are then covered with a "skin" known as fast-rendering textures, which give the objects shape and shadow. Higher resolution colors are added to the environment along with lighting and other atmospheric effects to heighten the illusion of reality with the ultimate goal of giving the audience a sense of "hyper-reality."

The combination of live-action with computer graphics makes CGI even more credible. THRILL RIDE features a guest appearance by horror film personality Elvira, "Mistress of the Dark," in an excerpt from the ride film "Superstition" to explain the technological challenges of adding the "human touch" to a computer generated environment. Live-action footage with Elvira is filmed in front of a large green screen; her image is then photographed and digitally transmitted into a computer. Animators are then able to construct a hyper-environment around her.

In one incredibly realistic CGI scene, the filmmakers devised a plot in which the film appears to have come abruptly to a halt. The work lights seem to come on from behind the screen and the miner from the ride film "Devil's Mine Ride" comes out on a catwalk, however, the entire backstage area in view is computer generated. Interacting with himself on an imaginary set, the actor playing the miner also portrays the miner's twin brother simultaneously. With the sole exception of the miners, the entire set is computer generated and an extraordinary example of the possibilities of CGI computer graphics.

With so much technology available for the creation of more breath-taking thrill rides, one question still remains. Why has such an effort been made to make thrills more challenging than ever before? Thrill rides serve no real purpose in life other than to entertain. What has attracted people to thrill seeking for centuries? Psychologists note that the motivation

for thrill seeking is based on a person's need for physiological arousal and the act of taking risks provides the necessary physical or mental stimulation. Psychologist Frank Farley has made a career out of studying thrill-seeking personalities.   He calls this personality TYPE-T; these people take risks and seek thrills while at the same time try to avoid them. Analyzing a risk-taking behavior involves studying one's tendency for thrill seeking on a scale from risk-taking to risk-avoidance. If you are a person who likes to try new experiences on a regular basis, you can think of yourself as a Big-T. If you are a person who feels more comfortable with the constants of a routine, consider yourself a Small-T.

Legions of thrill-seekers have begun to unite over the past twenty years, forming clubs in which people can share their appreciation for thrill rides. Formed in 1978, The American Coaster Enthusiasts (ACE) is an organization devoted to the preservation of roller coasters, expressing an objective viewpoint of their place in history as architectural and engineering landmarks. With over 5,000 members worldwide to date, ACE also hopes to educate the public by creating an understanding and awareness of roller coasters.

At the turn-of-the-century there were over 2,000 roller coasters in the United States. However, the popularity of television in the 1950's made Americans less interested to seek thrills at the local amusement park than in their own living rooms. Attendance suffered at many parks. Following the economic boom of the 1950's, urban and suburban development brought the wrecking ball to many amusement parks as developers found more profitable uses for the land.

The number of roller coasters reached an all time low of approximately 180 in the 1950's. A resurgence of interest in roller coasters created a building boom in the 80's and 90's. Today, there are presently about 300 rollercoasters in existence in the U.S., each offering its own creation of a one-of-a-kind thrill ride made by science but created for fun.

Conversations with the Filmmakers

Questions for the director Ben Stassen

1) *How did you become involved in making ride films? What personal interests did you have that made you want to make ride films versus theatrical?*

I had just finished producing two feature length films in Croatia when I was Offered a job at a high-end computer animation company called Little Big One in Brussels. When I got there, I was amazed by what I saw; Little Big One was like a Hollywood Studio located in miniature on a desktop computer. They wanted to get involved in producing high-end films, so after one week on the job I made a proposal to Showscan to do a computer animated ride film. We got started three weeks later and completed the project in one year.

Our first computer graphics ride film was called "Devil's Mine Ride." The film became very popular. After the success of "Devil's Mine Ride," I received contracts to do five more ride films. At first I wanted to create ride films simply as a promotional vehicle that would create a work-for-hire. I never realized at the time that it could be profitable and that there was such a huge market. About 200,000 people a day see one of our films somewhere around the world.

2) *Why did you decide to produce large format films?*

Working in large format feature length films seemed to be the next logical step. We had an opportunity last March to do some scenes for "Special Effects: Anything Can Happen." It was a commercial film with an educational twist. That film gave me the idea to branch out into large format films. It happened a lot quicker than I expected.

3) *Having directed many ride films, how did the idea come about to make a film tracing the development of the ride film as a form of entertainment?*

It was a commercial and creative decision. Large format is as close to frameless film immersive entertainment as there is today.   We make people forget that they are looking at a film but that they are actually experiencing an event. "THRILL RIDE" is a showcase of our computer animation talents and what we **are doing in the digital arena.   This film is the most sophisticated large format film ever made. The film uses the most digital film sequences ever.**

4) *How much time was involved from conception to final shooting?*

The idea to do "THRILL RIDE" started in June 1996 with a one-page concept. Then we signed with Sony Pictures Classics in August and started shooting that fall. We just wrapped shooting the live-action photography in March 1997 and continued with

post production until just a few weeks ago.

The postproduction takes longer on a large format film than a standard film. Just to find time available to screen the film for dailies in Los Angeles is very complicated. We can only screen at an IMAX theater and we have to screen between regularly scheduled screenings or early in the morning before the theater opens to the public.

It's still a very small industry. There is only one lab in the world that processes 70 mm negatives. Also, there are only about 10 IMAX cameras in existence, three or four of which are the new generation of IMAX cameras. The cameras are very hard to locate to start a production. They are gone for such a long time--directors take them everywhere from Mt. Everest to the jungle.

5) *What technical challenges were brought forth by filming on an actual rollercoaster?*

I thought the possibility to get a really smooth shot on a rollercoaster was going to be challenge. I never thought that the camera was going to hold up. Busch Gardens Theme Park in Tampa, Florida built the rigs for the camera mount. It was a major effort that took five months of engineering. Busch Gardens was very friendly and very cooperative. When the camera rigging was completed, we tested the rollercoaster five times without passengers. The camera weighs 60 lbs and was anchored with a steady mount. At first, we were worried if it would fly off but after the first run we saw that it worked out beautifully. I had enough confidence that when we ran it with people, they would not get hurt. We did not use stunt doubles or extras in the shot.

6) *How is the motion in a ride simulator made to move in complete sync with the action in the ride film itself?*

There are pistons that are controlled by a computer to rock the ride simulator back and forth. A computer programmer designs the motion while watching the film. The most archaic way to do it is on a keyboard using motion command keys. Other companies use a joystick to program the motion.

Basically it's all a matter of trial and error. Experience tells you what you can and can not do. There are certain tricks of the trade that one can use. If you were showing a ride film of a rollercoaster with a loop, obviously you cannot turn the theater upside-down, but there are ways to get around that to simulate the same feeling.

7) *How are the computer generated images created with such realism. What steps are involved in the process and how much time does it take?*

It's the state-of-the-art, the skill of the people and the technology that allows us to create computer generated images that look real. It helps if the scenes are moody and dark

which adds to the realism. You cannot do bright, broad daylight scenes with the same effect.

A lot of time is involved. Ride films take an average of six months to one year. There is five steps to making a computer generated ride film: modeling, animation, textures, lighting, and effects. The first step is modeling, which involves creating a wire frame blueprint of physical objects on a computer screen and an environment around it. Then second we animate the scene and move the camera by selecting in the computer the camera angle and position.   Third, texture or a "skin" is added to the wire frame to give shape and definition. Fourth, lighting is added just like on a real movie set. In some scenes we have 50 light sources. Then fifth, for a final touch we add effects such as smoke, explosions or dust.

8) *What do you see as the future for motion-based entertainment? What are the possibilities for combining large format films with 3D sight & sound and motion simulators?*

There is a big potential for ride films. A number of IMAX theaters have already purchased motion simulators to be placed next door. Most of these new motion simulators will be built next to IMAX theaters in the U.S. and some will be built in Europe.   The ride film industry is booming.

Questions for Producer Charlotte Huggins

1) *What did you learn from working on ride films for theme park attractions and theatrical large format films that helped you produce "THRILL RIDE-THE SCIENCE OF FUN?"*

I produced my first ride film, "Journey to Technopia," without any prior ride film experience. "Journey to Technopia" was the centerpiece of the Lucky Goldstar Pavilion at the '93 World Expo in Korea. The world's fair has since become a theme park and "Journey to Technopia" has also become the most popular attraction at the park.

I learned a lot from producing sequences for "Honey I Shrunk the Theatre" for Disney because it was Disney and 3-D. They do things right at Disney with a lot of input from everyone. They know how to play to an audience, and they really get it. I learned a lot about audiences and what audiences are looking for.

When you are doing a special venue attraction or large format film you are always thinking about audience perception and audience response. What's going to make them laugh and have fun, that's what THRILL RIDE is all about--perception.

There is a sensation of movement that we try to recreate with THRILL RIDE. When people ride a rollercoaster, many throw their hands in the air and scream because it is moving very fast. We have found that the preview screenings of THRILL RIDE also have the audience screaming and putting their hands in the air in the rollercoaster segments because it seems as though you're moving! The perception of movement truly can be just as exciting as actually moving.

2) *With almost every action film being labeled "the thrill ride of the season" and amusement park rides being created based on movies, do you see an increasing potential for the ride film market?*

Absolutely!!! People are interested in thrills. What we talk about in the movie is that people want danger without the real risks. People have always wanted thrills. It's the adrenaline, people love the adrenaline.

At New Wave International, we see an increasing potential for the ride film market. We see it in our bottom line and we experience it on a daily basis. We are a small company and have 6 films this year. As fast as we can make them, we sell them. At any given time, we have 2 ride films in production. Besides THRILL RIDE we currently have three ride films in production--"Dolphins: The Ride," "Aquaride," and "Virtual Time Machine."

3) *Do you know what the first ride film was that was produced? How far has ride film technology come since the first film?*

Believe it or not, the first actual ride film was made almost 90 years ago in 1904 or 1911 for the World's Fair in Kansas City. Fire Chief Hale of the Kansas City Fire Department was asked to do something special for the Expo. Chief Hale came up with the idea to simulate a wild cable car ride down city streets.

He took a cable car attached to boards placed in front of a movie screen. While guys would jump on the boards to make the cable car move back and forth, a movie of a cable car going up and down the streets was shown on screen in front of the riders. This primitive ride film was so successful at the fair that he took it on tour around the country. Hale made himself a very wealthy man. He made $500,000 by producing the world's first ride film.

The first modern day ride films were released in 1987, "Star Tours" at Disneyland and "Journey to Jupiter" (now called "Tour of the Universe") by Doug Trumbull at CN Tower in Toronto. The first ride film that popularized this medium and made these films highly visible to the public was the debut of Universal Studios Florida "Back to the Future-The Ride" in 1990.

Technology has come a long way since the first ride films. If you watch any of the first ride films you can see that there is now a lot more motion and the action on film is much faster. The CG (Computer Generated) ride films are taking over. Almost all ride films are now done on a computer compared to the first films which were done with live-action and miniature models. In general, people don't respond as well to live action ride films as they do with the CG films. They want to experience things that they normally would not have the chance to do or to go someplace they can't go, like outer space or the center of the earth.

4) *What was the most problematic or technologically challenging factor in producing "THRILL RIDE."*

THRILL RIDE is the most technologically complex large format film ever made!
 Every shot in the movie is technically challenging. Most of what normally would be done optically on film is done digitally. There are two types of film in THRILL RIDE--live action and digital. With a digital camera, there is no film. The image goes direct from the camera to the computer. Currently, it can only be done with time lapse photography because we can only shoot 6 frames per second. For live action, it depends upon how fast the data can be scanned into the computer as the computer can only read the information so fast.

There are 23 minutes of digital film images in THRILL RIDE. Our goal is to shoot an entire film digitally! Shooting digitally, the camera can be smaller and more compact. And to get to our goal of shooting 24 frames per second, we had to start somewhere!

5) *What was your overall goal for "THRILL RIDE?" What did you hope to achieve and what would you like audiences to understand or learn from the film?*

Our overall goal was to have fun. We want the audience to learn and have fun. We wanted to push the limits of IMAX filmmaking technology and the medium itself. Ben Stassen wanted to keep the camera moving. We hope that audiences will learn how immersive film experiences work, why they works and why they love thrill rides. The film analyzes why rollercoasters are fun and what makes them work. The next time an audience member hops on board a rollercoaster, not only will it be fun but they will have an understanding of it as well.

6) *What science lessons are taught in the film?*

Besides some basic lessons about how motion pictures are made, there is a lot about the physics of rollercoasters; that a rollercoaster seems to go faster and faster but it is actually losing momentum and speed as it goes along--slowing down from the first drop. This is why the turns get tighter towards the end of a ride, giving the perception that the speed is increasing.   We talk about gravity and momentum and then let the audience experience the science of it all on a real rollercoaster.

We also show how computer graphics (CG) are created. We strip away everything down to the wire frame structures designed on the computer used to create the images. You are learning how CG works not just by watching it but you are moving through the construction process of the film in one single four-minute take.

7) *What research did you do on the history of movies, thrill rides and motion simulators to produce the film? You even consulted with a world-renowned rollercoaster historian, Robert Cartmell. What was the extent of his involvement in "THRILL RIDE?"*

We have seen every rollercoaster film made. We even have actual footage from the 1950's film "This is Cinerama" which was shot in 5-perforation 35 mm with 3 film strands projected simultaneously. We used the rollercoaster sequence from "This is Cinerama" in THRILL RIDE .

We have lots of research material. After reading the book "The Incredible Scream Machine," we contacted the author, Robert Cartmell, the world's foremost rollercoaster historian. He has a wealth of archival material. He talked to us and told us which are the best rollercoasters and why. All of the rollercoaster archival footage came from Cartmell's library. He has over 60,000 images in his collection.

About the filmmakers...

BEN STASSEN
(Director)

A graduate of USC's School of Cinema and Television, Ben Stassen began his career in the film industry by producing "My Uncle's Legacy" a film that earned him a Golden Globe nomination for Best Foreign Language Film in 1990.

It was during the making of his second feature film that the Belgium native was introduced to the Brussels-based company Little Big One. A high-end computer graphics company, Little Big One enlists Stassen's talent as a filmmaker to help get their work more acknowledged by the international film community. Stassen welcomed the challenge and suggested that the company use CGI (Computer Generated Imagery) technology to make a simulator ride film as a way to showcase their work in high-end venues around the world. He met with Showscan and got them interested in tackling the challenge of producing "Devil's Mine Ride" one of the first high-resolution computer graphics film s in the large screen format. "Devil's Mine Ride" achieved huge success and set the precedent for all other ride films to come.

Stassen went on to co-found New Wave International with D&D Media Group, the largest television production company in Belgium. As a content producer, D&D Media Group welcomed the idea of setting up New Wave International not as a service company doing production for third parties, but a fully integrated digital studio developing, financing, producing and distributing products for the location-based entertainment market. In less than four years Stassen has produced 17 ride films and has built the largest independent library of motion simulation rides available in all formats.

New Wave International had the privilege of producing three CGI sequences for "Special Effects: Anything Can Happen" a WGBH/Nova large screen production directed by Ben Burtt. Under Stassen's leadership, the next logical step for New Wave International was to venture into large screen production on their own. The company's first feature length large format film is "THRILL RIDE - THE SCIENCE OF FUN", co-financed with and distributed by Sony Pictures Classics.

CHARLOTTE HUGGINS
(Producer)

Charlotte Huggins experienced many facets of the entertainment industry before realizing her passion for special venue production. As a first time writer/producer she made "Interview 15". A docudrama made with one roll of film, several film festivals honored "Interview 15", including the New York and Berlin Film Festivals, as the best Educational Film of the Year. Huggins sharpened her marketing skills in order to raise funds to do three more docudramas before taking a job as head of public relations with Stephen J. Cannell Productions.

At Cannell, Huggins got a job in story development with television legend Roy Huggins, who later became her father-in-law and went on to write for the hit show "Hunter". She was soon offered a position at Boss Film Studios where she produced several Clio Award winning Magnavox television campaigns. Although success to Huggins was practically a constant, her career really came together when Boss won the contract for the World Expo 93's "Journey to Technopia", was received with rave reviews and proved to be a breakthrough in ride film technology.

Huggins went to work on a number of highly successful large format films including serving as visual effects producer for both Disney's "Honey I Shrunk the Theatre" and Sony Pictures Classics' "Wings of Courage" which starred Val Kilmer. She also acted as visual effects producer for LG Group's "Ahead of Time" and executive producer for the King Kong sequence in WGBH/Nova's "Special Effects: Anything Can Happen" At New Wave, Huggins serves as head of production and operations of the Los Angeles office

KURT FREY
(Writer)

An award-winning documentarist, humorist and screenwriter as well as being an excellent writer of the beginnings of novels. Frey's finished works have ranged from a remarkable 14-hour interactive computer and videodisc "textbook" of natural science sponsored by the National Science Foundation and recognized by Smithsonian Magazine as an "outstanding example of interactive applications" to original feature films under development with Fine Line Features and Original Films. Frey's work has been recognized by the New York Film and Television Awards and ACE. He is working with New Wave International, bringing his creative talents and technical acumen to bare in writing and developing the next generation of large format films.

SEAN PHILLIPS
(Director of Photography)

As comfortable in a digital studio as he is on stage or location, Phillips has experience in virtually every motion picture format - from national television commercials to IMAX films to large format stereoscopic projects. Recent credits include Second Unit Director and Director of Photography for the Kong sequence for the WGBH/NOVA IMAX film "Special Effects." Phillips served as Visual Effects Supervisor on the Sony Pictures Classics film "Wings of Courage," a 3-D IMAX film, and as Director on "Ahead of Time," a 3-D 35mm film. He also directed and photographed "Journey to Technocopia" a motion-based adventure film in 8/70 for the Lucky Goldstar pavillion at the '93 World Expo. His past work in commercial has earned him numerous CLIO Awards as well as New York Film and Television Awards, a BPA Silver Award and an ACE Award.

RAY SPENCER
(Production Designer)

As production designer for New Wave International. Raymond F. Spencer creates the vision for the special venue productions for the company from "blue sky" concepts through design and implementation of the visual "look" and continuity for each project. Educated in the field of industrial design, Spencer has been a consultant for the past 18 years to the film, theme park and entertainment-oriented industries specializing in large format films. He has been involved in concept, art direction and design, continuity storyboard and set design for a variety of film, television commercial and special effects projects. His work has taken him from initial research to final concept for such companies as Walt Disney Imagineering, Iwerks Entertainment, Showscan Entertainment, BRC Imagination Arts as well as many others.

In 1992, Spencer was introduced to Ben Stassen, for whom he served as production designer on the motion simulation film "Devil's Mine Ride". "Devil's Mine Ride" opened to rave reviews and as a result of the great success of this project, Spencer joined Stassen and New Wave International and has since served as production designer on virtually all of New Wave's releases, designing over a dozen motion simulation films including "Cosmic Pinball". Besides THRILL RIDE-THE SCIENCE OF FUN, he is also involved in the production of a half-dozen high-end ride films: "Virtual Time Machine", "Dolphins: The Ride", "Aquaride", "Kid Coaster", "Superstition" and "Grand Prix Raceway".

MICHAEL STEARNS
(Composer)

Composer and Soundtrack Designer/Producer, Stearns lives in Santa Fe, New Mexico. His works include music for television, theme parks, fifteen IMAX films and fourteen solo albums. Previous credits include music for Disney Films, HBO, ABC's "The World of Explores," 20/20, Ripley's Believe It or Not, and Ron Fricke's non-verbal global film masterpieces "Chornos," "Sacred Site" and "Baraka." He has also produced the soundtracks to the Universal Studios Theme Parks' attractions Earthquake and Back To The Future: The Ride. His music has been used by NASA, Laserium and choreogrpahed by the Berkshire Ballet.

THRILL RIDE: The Science of Fun
FUN FACTS

THRILL RIDE: The Science of Fun takes its audiences on some of the wildest thrill rides ever created- all from the safety of their seat.

Did you know....

⤷ *In THRILL RIDE: The Science of Fun, the audience spends over 12 minutes riding thrill rides and experiences seven (7) 360 degree loops*

⤷ *THRILL RIDE features 13 different ride films, including Back to the Future: The Ride*

⤷ *The creators of THRILL RIDE devised a new technology to aid in the filmmaking process. 2 and ½ minutes of film was created in a format called "live action digital" which was pioneered by nWave Productions. The process involved the shooting of a live action sequence with a digital camera in Brussels, Belgium, using motion control. Each frame of live action was recorded directly into the SGI computer and, without any digital enhancement, was sent via the Internet (!!) to the film recorder in Los Angeles where it was sent to the film lab and screened the next day!*

⤷ *The average length of a roller coaster is between 3,000 and 4,000 feet.*

⤷ *The average time of a roller coaster ride is 2 1/2 minutes*

⤷ *Over 290 million people visit amusement parks every year world wide*

Read on for more fun and interesting information about other roller coasters and thrill rides-

ROLLER COASTER HIGHLIGHTS

Oldest Coasters
The first roller coaster in the U.S. actually started its existence as a coal train in 1829 and it was called the "Mauch Chunck Switchback Railway: near Mauch Chunck, Pennsylvania.
⤷ *In 1872 it ran coal in the morning and people in the afternoon.*

- *By 1873 it was running people all the time and was serving 35,000 tourists a year at $1 a ride.*
- *While it took one hour to go up the hill and 20 minutes to come down, it reached speeds of up to 100 mph and had a perfect safety record!*

1884: The site of the first U.S. roller coaster built as a coaster is La Marcus Thompson's Switchback Railway at Coney Island in Brooklyn, NY
1902: Leap the Dips- Lakemont Park, Altoona, PA
1912: Scenic Railway- Luna Park, Melbourne, Australia
1915: Tivoli Rutchbanen, Copenhagen, Denmark
1920: Jack Rabbit, Kennywood, West Mifflin, PA

Tallest
wood: "The Rattler" (179.5 feet) Fiesta Texas, San Antonio, TX
steel: "Fujiyama" (259 feet) Fujikyu Highland Park, Japan

Fastest
wood: "Mean Streak" --65mph. Cedar Point, Sandusky, OH
steel: "Fujiyama"--86mph. Fujikyu Highland Park, Japan

Longest
wood: "The Beast" --7,400 ft. Paramount King's Island, Kings Mills, OH
steel: "The Ultimate" --7,450 ft. Lightwater Valley, United Kingdom

Longest Drop
wood: "Mean Streak" --155 ft., Cedar Point, Sandusky, OH
steel: "Fujiyama" -- 239 ft., Fujikyu Highland Park, Japan

Tallest Looping Coaster
steel: "Viper" -- 188 ft., San Francisco Magic Mountain, Valencia, CA

Most Inversions (8)
"Dragon Kahn" , Port Aventura, Salou, Spain

Most Famous
1927 Cyclone- Astroland/Coney Island, Brooklyn, NY
1927 Cyclone Racer- The Pike, Long Beach, CA
1924 Bobs- Riverview, Chicago, Ill

POPULAR SIMULATOR RIDES

Back to the Future: The Ride- Universal Studios Theme Parks, Orlando, FL and Universal City, CA
Star Tours- Disneyland, Anaheim, CA and Walt Disney World, Orlando, FL
Body Wars- EPCOT at Walt Disney World, Orlando, FL
Questor- Busch Gardens Williamsburg, VA and Tampa, FL
The Right Stuff- Six Flags Great Adventure, Jackson, NJ
CN Tower, Toronto Ontario, Canada

THRILL RIDE SEEKERS

AMERICAN COASTER ENTHUSIASTS
PO BOX 8226
CHICAGO, IL 60680
E-Mail Address: coasterfun@aol.com

GREAT OHIO COASTER CLUB
P.O. BOX 91954
CLEVELAND, OH 44101

COASTER ENTHUSIASTS OF CANADA
BOX 1162
DARTMOUTH, NOVA SCOTIA
B2Y 4B8

COASTER SITES

Coasters   **www.coasters.net**
-listing of all roller coasters, location, opening date
-listing of amusement parks around the world (maybe not the most complete list available)
-listing of books relating to coasters, thrill rides etc.

World Wide Guide to Parks and Rides   **www.arvism.demon.co.uk**
-**a reference site dedicated to all aspects of amusement and theme parks, roller coasters and major rides, world wide listing of parks and rides, current events, history, technology **USE THIS SITE TO FIND PARKS IN YOUR AREA THAT YOU CAN DO CROSS PROMOTIONS WITH, DISCOUNT COUPONS TRADES, ETC...**

European Coaster Club   **www.coasterclub.org**
                            www.eurocoaster.com
-*Official website of the European coaster club, park info, coaster news etc.*

Thrill Rides   **www.thrillride.com**
-    **details new rides and attractions**

COMPUTER GRAPHIC SITES

Silicon Graphics   **www.sgi.com**
-**All the computer generated imagery created in *THRILL RIDE* (and in virtually every other special effects movie or ride film) was made using SGI technology and workstations. Find out everything you wanted to know and more about this technology, and company.**

Industrial Light and Magic   **www.ilm.com**
-**info about George Lucas's company, "how do they do that" about special effects (like those used in Terminator 2, Jurassic Park etc.)**

Pixar   **www.pixar.com**
-**learn more about the computer animation process and the company behind the groundbreaking film, TOY STORY.**

RIDE FILM SITES

Universal Studios Florida **www.usf.com**
-**learn more about "Back to the Future: The Ride" at Universal Studios, Florida--the ride featured in *THRILL RIDE*!**

nWAVE Pictures   **www.nwave.com**
- **the producers of *THRILL RIDE* have their own site- check it out for up to the minute information about many of the ride films they have**

created. This company has produced more ride films than all of their competitors combined!!

MOTION SIMULATION SITES

NASA Flight Simulation at Langley Research Center
        www.larc.nasa.gov
-**information about the most extensive flight simulation research labs in the country.   Covers virtually all manner of flight including military and civilian aircraft, conventional and unconventional aircraft, helicopters and more! Without NASA, there would be no recreational motion simulator rides.**

Advanced Simulation Systems www.advancedsimulation.com/
-**Hardware and how-to for the home builder. High quality flight simulation is now within the financial grasp of anyone who wants it! Descriptions and pictures of several flight simulators including the "ThunderSeat" (simulator for the F-16D) and the "ThrustMaster (simulator for the F-16)**