

= Millennium Force =

Millennium Force is a steel roller coaster built by Intamin at Cedar Point amusement park in Sandusky , Ohio , United States . It was the fourteenth roller coaster to be built at the park since the Blue Streak opened in 1964 . Upon completion in 2000 , Millennium broke six world records and was the world 's first Giga Coaster , a roller coaster that exceeds 300 feet (91 m) in height . It was briefly the tallest and fastest in the world until Steel Dragon 2000 opened later the same year . The ride is also the third @-@ longest roller coaster in North America after The Beast at Kings Island and Fury 325 at Carowinds . It was the first roller coaster to use a cable lift system rather than a traditional chain lift . The coaster has a 310 ft (94 m) , 45 @-@ degree lift hill with a 300 ft (91 m) drop and features two tunnels , three overbanked turns , and four hills . It has a top speed of 93 mph (150 km / h) .

Since its debut , Millennium Force has been voted the number one steel roller coaster ten times in Amusement Today 's Golden Ticket Awards . Its lowest ranking in the poll has been two , a position that it has swapped with Superman the Ride (formerly Bizarro) numerous times since 2001 . Although Millennium Force has been surpassed in height and speed , it remains one of the tallest and fastest in the world .

= = History = =

The planning , design and development phases of Millennium took place over five years . The first rumors that a new record @-@ breaking roller coaster would be built at Cedar Point , which included speculation about a ten inversion roller coaster from Bolliger & Mabillard and an Arrow Dynamics MegaLooper , began circulating in early 1998 . A roller coaster from D. H. Morgan Manufacturing was also rumored . On July 2 , 1999 , Cedar Fair Entertainment Company filed a trademark for the name Millennium Force , which raised more speculation about what the ride would be like . About a week later , the first track pieces were seen at the park , which confirmed that the ride would be manufactured by Intamin . Cedar Point officials also confirmed that it would not have inversions .

= = = Announcement = = =

Millennium Force was announced on July 22 , 1999 , as the tallest roller coaster in the world , taking the record from Fujiyama at Fuji @-@ Q Highland in Japan . Don Miears , General Manager of Cedar Point said , " Millennium Force introduces the world to a whole new level of roller coaster riding . " The ride cost \$ 25 million to design and build . Millennium Force was built in the Frontier Trail section of the park and the Giant Wheel was relocated to make room for it . Cedar Point , Intamin , and Werner Stengel designed the layout of the ride . After the ride was announced , several disputes about whether Millennium Force or Superman : The Escape was the tallest and fastest roller coaster in the world arose between Cedar Point and Six Flags Magic Mountain . Superman : The Escape is 415 feet (126 m) high and its speed is 100 miles per hour (160 km / h) ; however , it is a shuttle roller coaster , not a complete @-@ circuit roller coaster .

= = = Construction and opening = = =

Construction started in August 1999 when the site was cleared . The removal and relocation of the Giant Wheel began in October on closing day ; the first of 226 supports were installed on October 11 , starting at the brake run . Two hundred twenty @-@ six footers , each about 5 feet (1 @. 5 m) deep were dug ; the largest ones were 56 by 56 feet (17 by 17 m) . The concrete construction was done by Mosser Construction . The lift hill was topped off in early January 2000 .

The ride 's construction took seven months , and 120 construction workers and project managers participated . Testing took two months . The park conducted a " pull @-@ through " by pulling a train along the course to ensure proper clearance . The ride was inspected and tested with water @-@ dummies on the trains . The first media event was held on May 11 , 2000 , and the ride opened to

the public on May 13 . When it opened , it broke six world records . It was the first Giga Coaster and was the world 's fastest complete @-@ circuit roller coaster , but was later overtaken by other rides . About a month after Millennium 's debut , Cedar Point introduced a new queuing system called " Ticket to Ride " to reduce the waiting times , which allowed visitors to buy a ticket then return later and wait in a shorter line . In August , Cedar Point engaged John Hancock and Associates and Stalker Radar of Indianapolis to measure the height and speed of Millennium Force . The height was measured at 310 feet 11 inches (94 @.@ 77 m) , and the speed was measured at 93 miles per hour (150 km / h) , slightly faster than what the park had been advertising (92 mph) .

Before the start of the 2004 season , Millennium Force 's seat belts were modified because of an incident on the Bizarro roller coaster at Six Flags New England . The new seat belts were shorter and some riders had difficulties with them . The roller coaster 's layout was repainted over a three @-@ year period of time , before the 2011 , 2012 and 2013 season . In 2012 , the park added a new LED lighting system .

= = Ride experience = =

= = = Queue = = =

Millennium Force 's entrance is located behind the Cedar Point & Lake Erie Railroad 's Celebration Plaza station . The queue is situated between the ride 's last overbanked turn and the station . A DJ booth is provided to entertain waiting visitors ; the park 's " Jamming DJ 's " take requests for family friendly songs from people in the queue . It was then replaced by Cedar Point 's FUNtv , which plays music videos of popular songs , the Gatekeeper / Maverick shuffle , park trivia , sports news , park advertisements , weather forecasts , and popular news headlines . About a month after Millennium 's debut , Cedar Point introduced a new queue system known as " Ticket to Ride " (later FreeWay) to reduce the wait time . Visitors could buy tickets then return later and wait in a shorter line . This system was discontinued in 2004 after several people complained it was unfair that others were going ahead of them in line . In 2012 , Cedar Point introduced its Fast Lane queue system on the ride ; visitors can buy a wristband which enables them to wait in a shorter line . The system was tested at Kings Island the previous year , where it received positive reviews .

= = = Layout = = =

Millennium Force covers 13 acres (5 @.@ 3 ha) ; it runs parallel to the shoreline of Lake Erie then travels to an island located inside the park , that also houses the former Shoot the Rapids log flume and the Dinosaurs Alive ! attractions . There are two tunnels , three overbanked turns and four hills . One cycle of the ride takes approximately 2 minutes and 20 seconds .

While the train is being loaded with passengers , the catch car for the cable lift descends the lift hill and latches onto the middle car underneath the train . Once the train is cleared , the cable lift immediately pulls the train up the 45 degree lift hill at 15 miles per hour (24 km / h) to a height of 310 feet (94 m) . The train drops 300 feet (91 m) at an 80 degree angle and reaches a top speed of 93 miles per hour (150 km / h) at the bottom of the hill . It then climbs 169 feet (52 m) through a right overbanked turn at 122 degrees from the horizontal axis , then travels through a tunnel as it passes over the Frontier Trail . It then travels over a 182 @-@ foot (55 m) parabolic hill , which provides a moment of zero gravity as it passes over a lagoon and down onto Adventure Island . While on Adventure Island , the train passes by the Dinosaurs Alive ! attraction several times . It completes a 105 @-@ foot (32 m) , 360 @-@ degree right @-@ handed helix , followed by a left overbanked turn , passing the Shoot the Rapids water ride . It then completes a small right @-@ hand turn before traveling over another hill to leave the island . The train then travels left through a second tunnel where the on @-@ ride photo is taken , followed by a left turn and a small hill , passing by the queue . Finally , the train travels 68 feet (21 m) high through another right overbanked turn over the queue and is stopped by magnetic brakes . Passengers disembark the

ride at an unloading station and the train moves to a second station where it is loaded .

== Characteristics ==

=== Manufacturer ===

Millennium Force is a Giga Coaster model designed by Werner Stengel and built by Swiss manufacturer Intamin . It was the first of a series of roller coasters , including Top Thrill Dragster ? the tallest and fastest roller coaster in the world in 2003 ? that Intamin built at Cedar Point . As of 2015 , Millennium Force is one of only two Giga Coasters built by Intamin .

=== Trains ===

Millennium Force operates with three stainless steel , stadium @-@ style seating trains colored red , blue , and yellow . Each train has nine cars that seat four passengers , allowing a maximum capacity of 36 people per train and 1 @,@ 300 riders an hour . Each seat has an individual , hydraulic , T @-@ shaped lap bar and seat belt which rests across the rider 's lap . Each train weighs 19 tons .

=== Station ===

The station has two platforms , one for unloading and one for loading . Two trains are loaded and unloaded while the third train is running the course . There is also a separate line in the station where riders can wait for the first seat . The loading platform has red overhead lights , which are located above the train . Millennium Force 's theme song is played in the station while riders are boarding .

=== Track ===

The steel tubular track is 6 @,@ 595 feet (2 @,@ 010 m) long and the lift is approximately 310 feet (94 m) high . The track is blue and the supports are silver , and consists of 229 pieces of track , each weighing between 11 @,@ 000 and 17 @,@ 000 pounds (5 @,@ 000 and 7 @,@ 700 kg) . Intamin supplied the track with hollow structural sections (HSS) , which is used in all the track pieces , supports and towers . Millennium uses three different track shapes . The simplest sections are two @-@ pipe track , made with two running rails connected by 6 @-@ inch (15 cm) square HSS cross @-@ members . The ride also uses three @-@ pipe track , which has two running rails with a backbone of round HSS , which forms a triangle . The third type of track forms a square and is considered the strongest . It has two running rails with two backbone tubes .

== Lighting ==

When the ride opened in 2000 , Cedar Point chose High End Systems , headquartered in Austin , Texas , to light the ride . Rob Decker , Cedar Point ? s Corporate Director of Planning & Design , said that they thought they would have to mount multiple floodlights on the tower . However , they were able to install thirty EC @-@ 1 floodlights at the base of the lift hill structure which provided lighting throughout the ride 's structure . Of the six main support towers , three had six EC @-@ 1s , and three towers had four EC @-@ 1s . The three tallest towers had another unit in the middle .

Over the years , the lights were not maintained and grew noticeably dimmer . In 2012 , Cedar Point introduced a new nighttime show , Luminosity ? Ignite the Night ! , to " re @-@ energize " the park at the end of the day . New LED lights from Sunrise , Florida @-@ based Chauvet Professional were installed to illuminate the ride . Twenty COLORado Range and ten COLORado Ridge wash lights were installed at the base of the lift hill structure .

== Records ==

When it opened in May 2000 , Millennium Force broke six world records and used a new magnetic braking system instead of friction brakes found on most roller coasters . This new system enabled a shorter brake run , which slows the train from 65 miles per hour (105 km / h) down to a standstill in six seconds , to be built .

Millennium Force held the records for tallest and fastest complete @-@ circuit roller coaster until August 2000 , when Steel Dragon 2000 opened . Millennium Force held the record for tallest and fastest roller coaster at Cedar Point until 2003 , when Cedar Point debuted Top Thrill Dragster , which at the time was the tallest and fastest roller coaster in the world .

As of 2015 , Millennium Force has the seventh tallest lift , the seventh fastest speed , the fifth @-@ longest track , and the seventh @-@ highest drop among steel roller coasters in the world . It is the second longest steel roller coaster in North America , and the third @-@ longest roller coaster behind The Beast at Kings Island and Fury 325 at Carowinds .

=== Coaster records ===

Millennium Force has held records for the following :

First ever complete @-@ circuit roller coaster to top 300 feet (91 m)

Tallest complete @-@ circuit roller coaster (310 feet (94 m))

Longest drop on a complete @-@ circuit roller coaster (300 feet (91 m))

Fastest complete @-@ circuit roller coaster (93 miles per hour (150 km / h))

Steepest non @-@ inversion banked turn on a roller coaster (122 °) (Half Corkscrew)

First roller coaster to utilize a cable lift system

=== Park records ===

Cedar Point has held records for the following (May 2000 statistic on left and May 2013 statistic on right) :

Most rides at an amusement park (68 / 73)

Most roller coasters at an amusement park (14 / 16)

Most steel roller coasters at an amusement park (12 / 14)

Most feet of roller coaster track at an amusement park (44 @, @ 013 ft / 54 @, @ 358 ft)

== Operation ==

As both a high altitude and high velocity ride , Millennium Force is affected by unfavorable weather conditions such as rain , lightning or strong winds ; under these conditions the ride is closed , but in light rain it can remain open . There is no minimum age requirement , but passengers must be between 48 and 78 inches (120 and 200 cm) to ride . Persons over a certain weight or waist size are not allowed to ride if the seat and lapbar harness cannot accommodate them . Passengers on Millennium Force may not take loose articles onto the train and are required to wear shirts and footwear . Headphones must be removed before boarding . Passengers are advised not to ride Millennium Force if they have recently had surgery , heart trouble , high blood pressure , neck or back trouble , or any medical condition that may be aggravated by riding , or are pregnant .

== Influence ==

Millennium Force changed the way roller coasters were built . More rides were built with cable lifts , which require less maintenance , can support more weight , and can run faster than a traditional chain lift . Millennium Force also led to more coasters over 300 feet (91 m) tall being built . Top Thrill Dragster opened three years later , breaking the 400 @-@ foot (120 m) height record .

Dragster was also built by Intamin , which did not build another " Giga Coaster " until 2010 , when it built Intimidator 305 at Kings Dominion . Intimidator 305 is similar to Millennium Force ; it has a cable lift and a similar layout , but has shoulder harnesses instead of the lap bars on Millennium Force . Leviathan opened at Canada 's Wonderland in May 2012 ; it is over 300 feet (91 m) . Leviathan is a Hyper Coaster manufactured by Bolliger & Mabillard , and uses a chain lift , not a cable lift .

= = Reception = =

Millennium Force has one of the longest lines in the park , with passengers waiting over four hours when the ride debuted . The ride received positive reactions from visitors , many of whom said it was smooth and very comfortable . Others said , " It 'll scare the daylights out of you " . In its first six years of operation , Millennium Force had over 10 million riders . By August 2012 , Millennium had given more than 21 million rides . Several television shows , including the Travel Channel 's Extreme Terror Rides , Bert the Conqueror , Off Limits , the Discovery Channel 's Extreme Rides , and the National Geographic Channel 's Super Coasters have featured Millennium Force . Out of over 500 roller coasters that Werner Stengel has engineered , he stated that Millennium Force is his favorite . Robb Alvey , a notable roller coaster enthusiast , called it a " milestone in roller coaster history " .

= = = Rankings = = =

Millennium Force has consistently ranked high in coaster polls and has won numerous awards . Millennium Force and Superman the Ride (formerly Bizarro) at Six Flags New England have held the top two places in the Golden Ticket Awards since 2001 . In the Travel Channel 's Insane Coaster Wars , Millennium Force was voted the " fan favorite " in the Extreme Heights and The Top 10 categories . In 2013 , Time ranked Millennium Force as the top roller coaster in the United States .