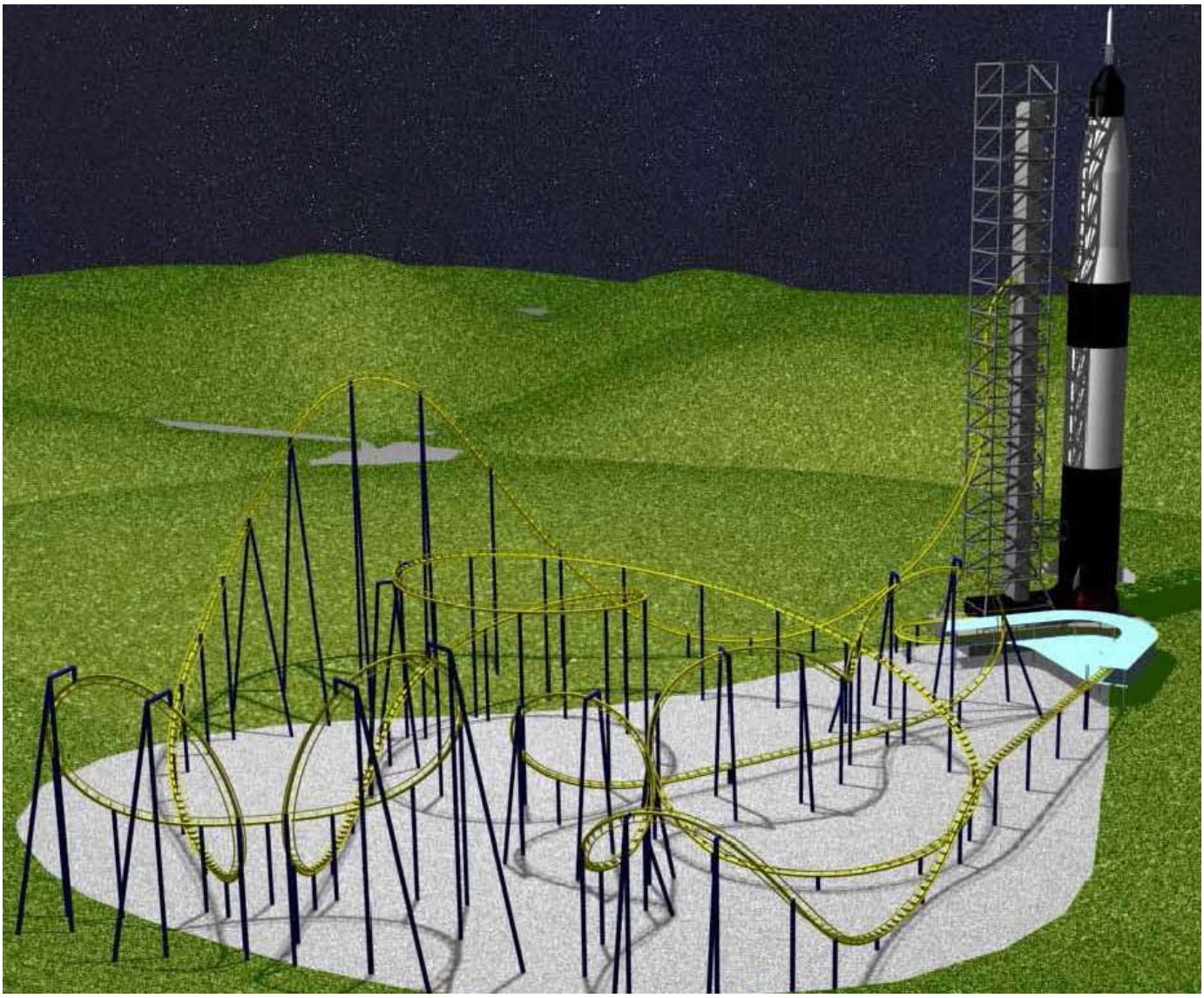
Apollo Project

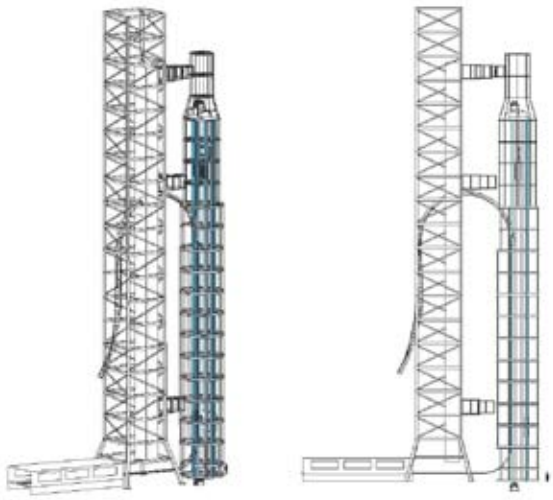


Technical data

The technical data refer only to the launching system. The track layout can be customised according to the park requirements.
The dimensions of the launching system itself can be completely modified to suit the layout and the park.

Footprint:	18 m x 30 m (60ft x 98 ft) *
Max tower height:	90 m (295 ft) *
Max launching system height:	70 m (230 ft) *
Upper looping height:	53 m (174 ft) *
Vertical trust duration:	3 s *
Max speed	18 m/s *
Ge - force:	0,7 g*
Installed power:	180 Kw *
Trains:	4 seats
Capacity:	28 passengers

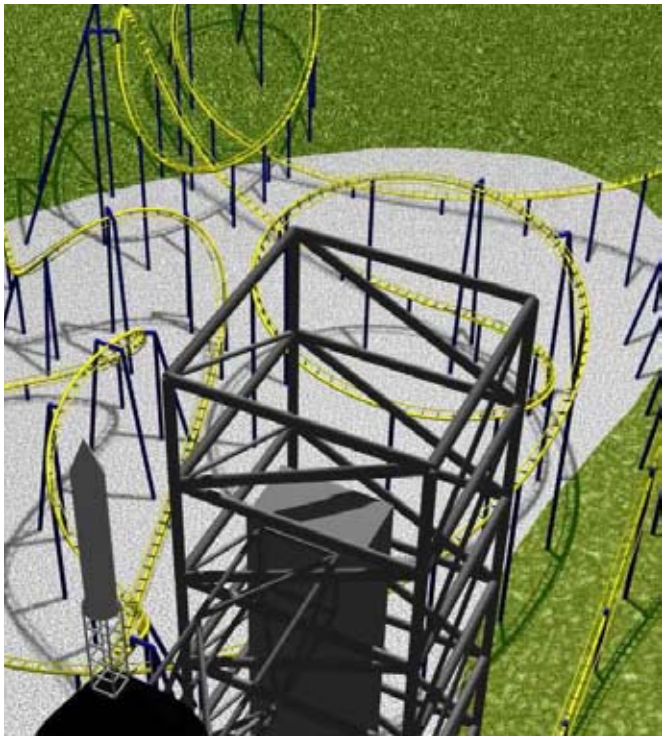
* approximative



Description

01_Foreward

"*Apollo Project*" represents the last frontier of the unconventional launching systems. After the traditional lift chains, the winch systems, the linear motors, "*Apollo Project*" takes up a new challenge: the vertical launching of the trains. By means of an ingenious counterweights system, the trains is catapulted in a vertical way, simulating the departure of a carrier rocket. "*Apollo Project*" marks a turning point in the amusement parks world.



02_Description of the operation

The following description is taken directly from the patent: "*Launching system for passenger units in entertainment parks, such as roller coasters or the like*" held by Ride Tek Engineering S.r.l..

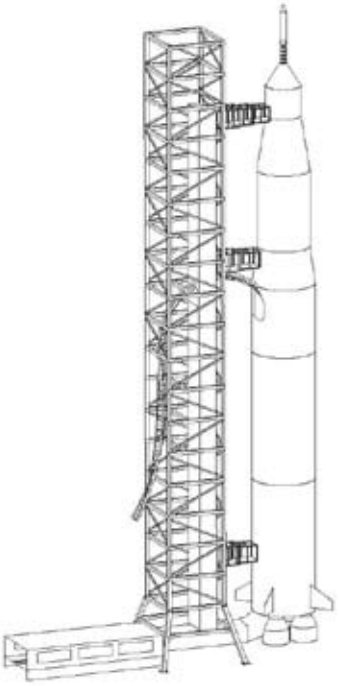
"*The object of this invention is a launching system for carriages running on a path in features for entertainment parks, such as roller coasters or the like, including a mechanical launching device where a falling counterweight moves a cable to pull a train of carriages with the needed force, and wherein the counterweight is slowly lifted back up at the end of the launch, while the carriages complete their path, thus only requiring some low-powered equipment. The system according to the invention is far cheaper to produce than known systems, and offers far lower operating costs....*

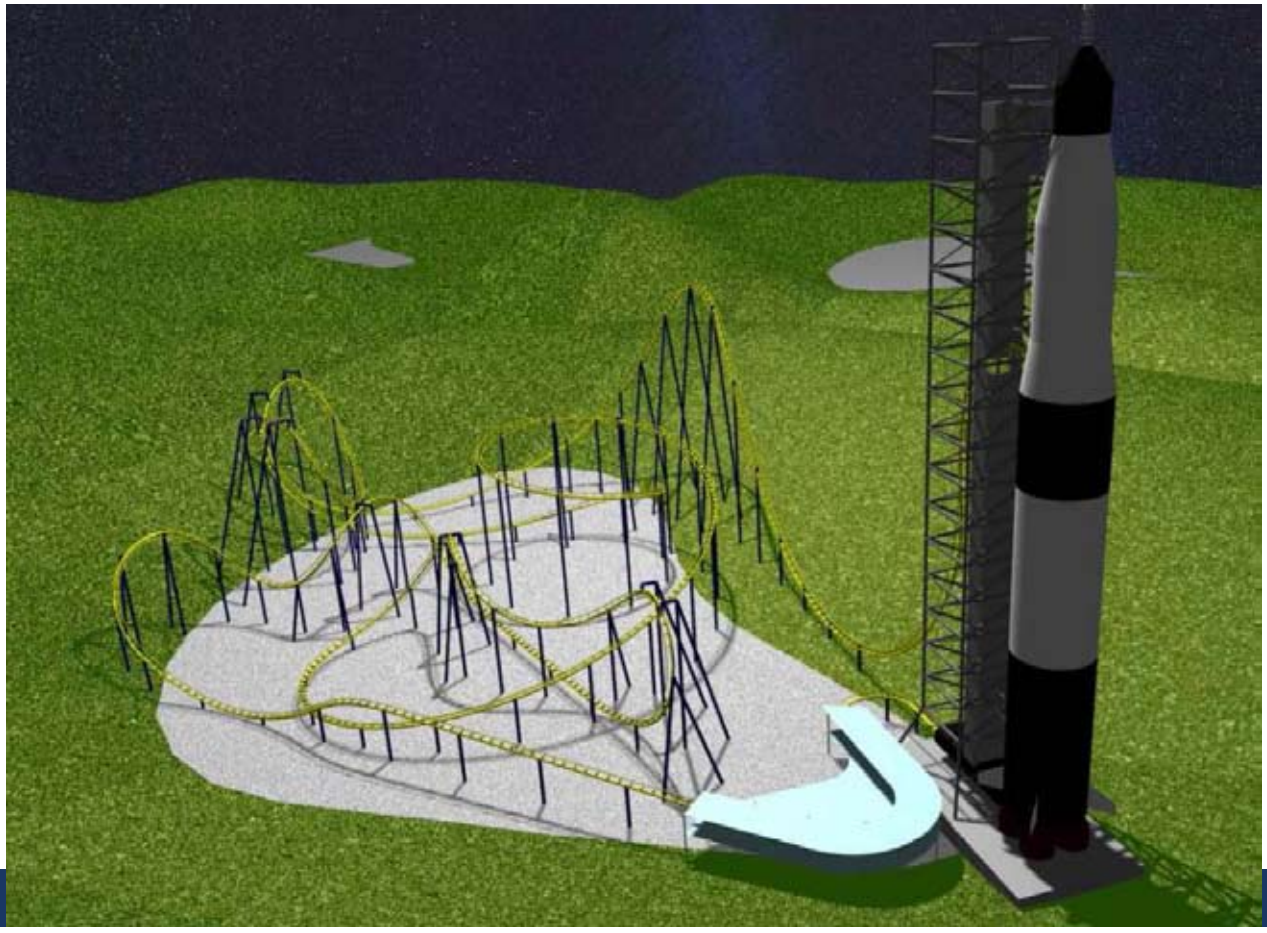
... The operation is as follows. At the end of each run, the train of carriages returns to its starting position, and awaits a new run. In this phase the counterweight (2) is in a totally lifted position. The half motors (19) pulling the cable are then actuated to move the trolley (15). As the train of carriages approaches, the trolley also moves upward, causing the hooking-up device to proect above the rails and hook up to the last carriage of the train. The carriages are then pushed forward, until the first carriage arrives at the vertical starting section, near the main cables (10) [loading phase]. While the train of carriages is in this position, with one or more carriages arranged in a vertical line-up near the cable (10), the main counterweight (2) is released, causing it to fall down [ready-to-launch phase]. The counterweight pulls along the cable (10) which rotates over the primary pulleys (17) and causes the trolley (1) to hook up to one of the first carriages of the train, which are thus dragged upward at a considerable acceleration and speed [launching phase].

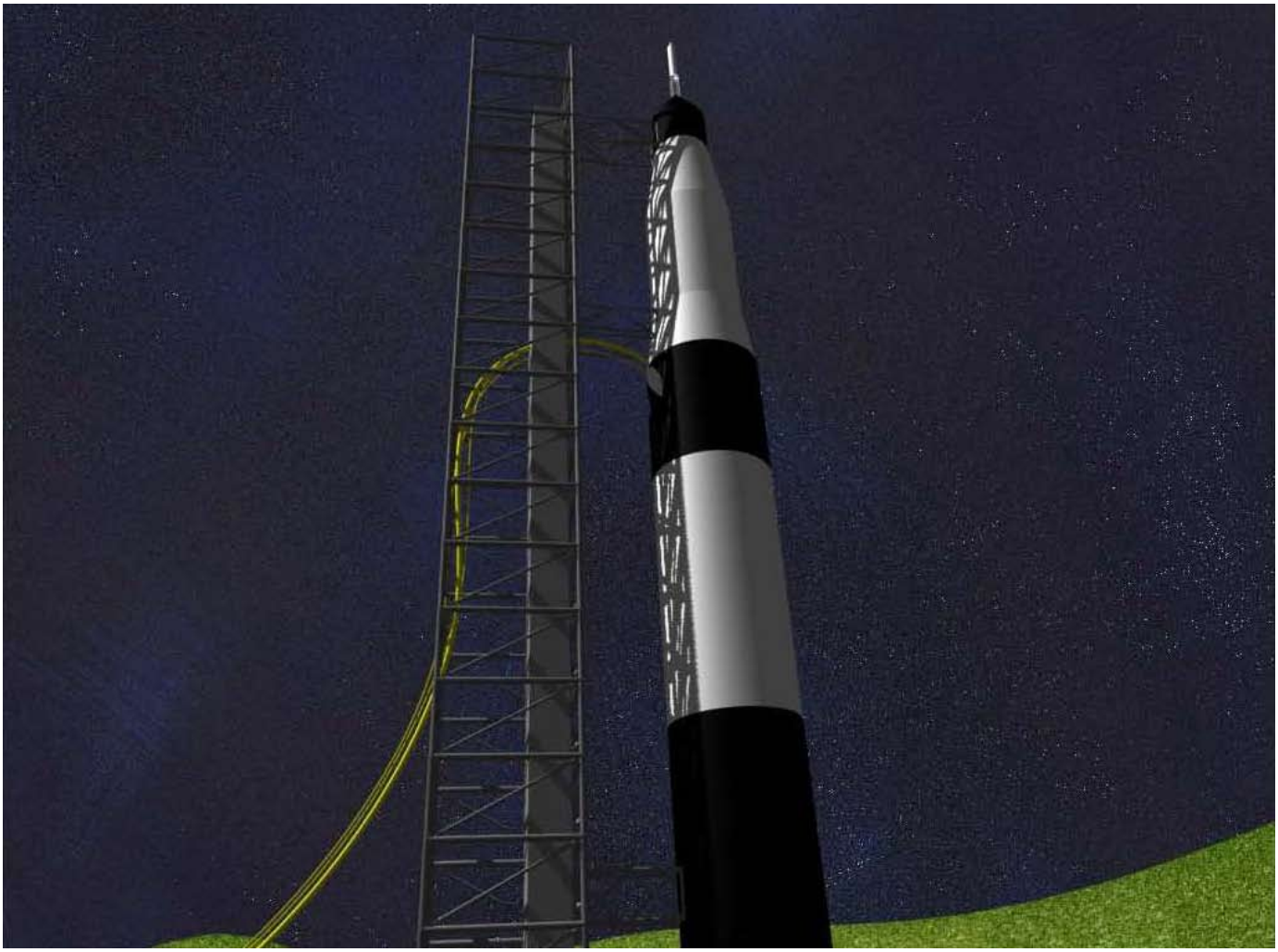
Description of the supply

The length of the launching section is such that when the carriages attain the end of the rise they have already reached a speed sufficient to insert them into the final path and move them on by inertia [after launch]....

...The lengths of the main cables (10) are considerably greater than that of the carriages launching path, so as to make it possible to unhook the trolley at the end of the launching phase. An induction braking device (13) is provided for braking the counterweight and trolley, coupled with mechanical braking devices and shock absorbers (16). While the train completes its course, there's sufficient time to re-lift the counterweight (2) to return it to its originally raised starting position, ready to push on a new train of carriages. For this purpose, the free extremity of the cable (11) hooks up with counterweight (2), to which the secondary weight (4) is attached, after having meantime been lifted up by the motor (5). Because the mass of the secondary counterweight is less than that of the main counterweight (about half), the ob of lifting the latter back up will require a motor of only about half the power needed if the counterweight (4) were lacking. The counterweight is then picked up again while the carriages complete the path. The system thus described makes it possible to reduce the needed power to a minimum, without sacrificing the characteristics of acceleration to be imparted to the carriages, because the counterweighting system allows providing all the necessary power in a few instants, only to restore it over a much longer period and therefore resorting to equipment and motors of a much lesser size, while the carriages pursue their motion by inertia and move independently to the end of their run. ..."







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