Year 12 physics extended experimental Investigation

An experimental analysis of Dreamworld’s “Tower of Terror 2”.

Contents

# Abstract

# Introduction

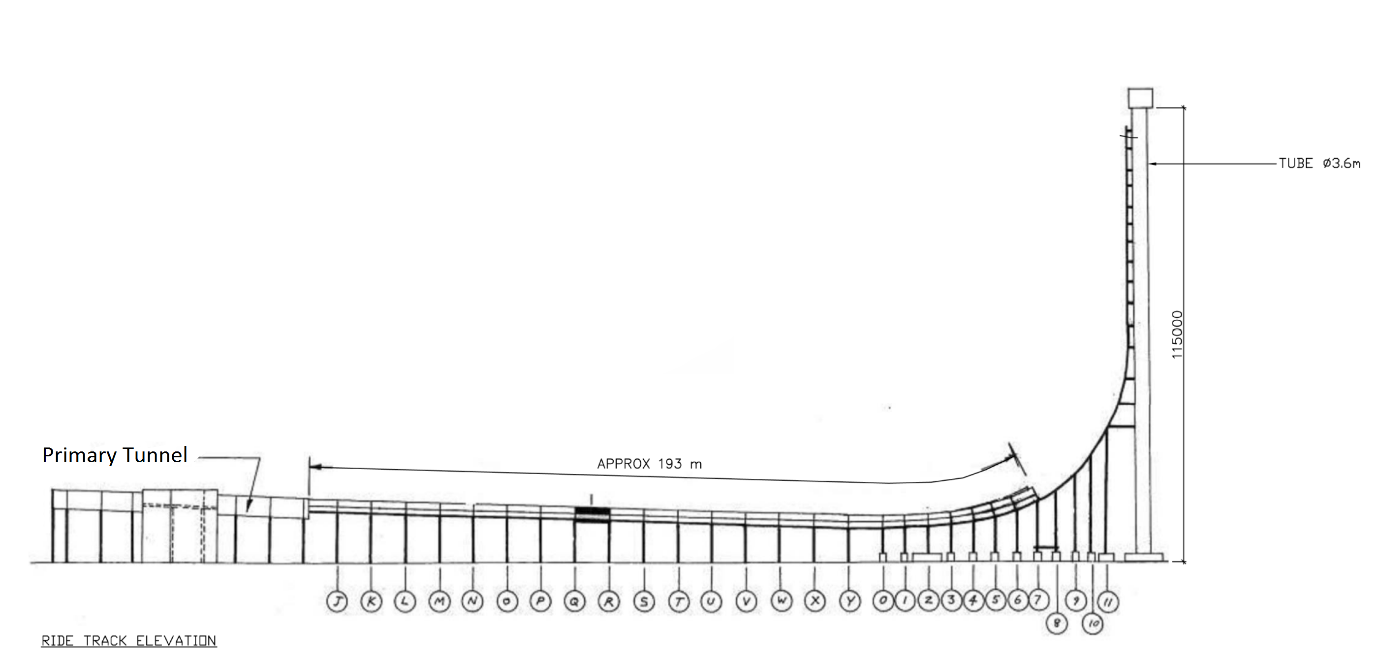


Figure 1: Tower of Terror 2 Schematics

The *Tower of Terror II* is a reverse free-fall ride, residing in the Dreamworld Theme park in the Gold Coast, Australia. Although there are a number of physics concepts that can be examined on this ride, the focus of the following investigation will be drag and energy. The investigation will focus on the kinetic and gravitational potential energy of the ride’s cart at various points, but will further evaluate the kinetic energy of the cart when it leaves and re-enters the primary tunnel (See Figure 1).

Kinetic energy is energy possessed by an object in motion, and is defined as the work required to obtain a stated velocity through acceleration. In the Tower of Terror, the cart possesses kinetic energy at every point except for when the cart is momentarily paused at its maximum height.

An object that possesses motion or a position also possesses mechanical energy. Mechanical energy is defined as the sum of potential and kinetic energy.