

Thailand's gravity-defying 'Magic Hill'

The mysterious road in Mae Sot where cars and trucks inexplicably roll up slopes when they should be going down them. It is real or just an illusion?

Maxmilian Wechsler checks out this amazing phenomenon

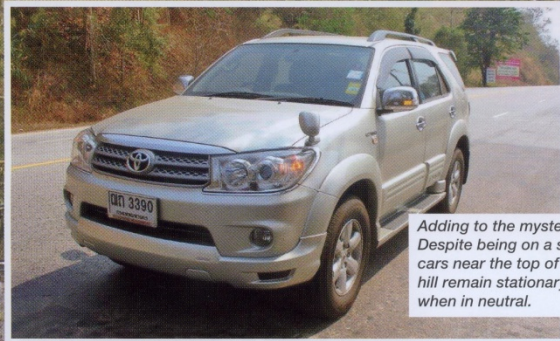


THE world has its share of unexplained mysteries: the Bermuda Triangle, where countless airplanes and ships have disappeared under mysterious circumstances; the Loch Ness Monster, said to be living in a deep lake in the Scottish Highlands; the construction of Egypt's ancient pyramids; and the Nazca Lines, etched shapes of animals covering more than 190 square miles in the southern Peruvian desert.

In northern Thailand, we have the perplexing, gravity-flouting 'Magic Hill.'

We're talking about a 130-meter stretch of four-lane asphalt on Highway 105, about 12 kilometers from Mae Sot in Tak province. What transpires there is a phenomenon that many people won't believe is real until they actually visit the slope identified by the kilometer 68 highway marker, and see for themselves this country's very own mystery.

Here any vehicle – car, minivan, pickup truck or 18-wheeler – that stops at the apparent bottom of the incline (marked by a



Adding to the mystery: Despite being on a slope, cars near the top of the hill remain stationary when in neutral.



Totally flummoxed: My eyes told me one thing; the spirit level, another. It's no surprise many drivers stop to experience the hill's magic.

distinctive yellow line across the road) with engine turned off and in neutral gear, will apparently defy gravity and roll uphill at a speed that gradually increases to about 10 kilometers an hour before reaching the top.

Drivers in the other lane experience the even more bizarre sensation of rolling uphill backwards.

This funhouse-like effect doesn't apply only to motor vehicles but also to objects like soccer and tennis balls. I have witnessed this myself. Despite heavy traffic and strong winds, and with help from a tenacious assistant, I conducted a series of tests at various spots along the Magic Hill. And every passing motorist who watched us in action was similarly amazed.

Road tests

The fact that the effect applied to non-metal objects ruled out any explanation involving magnetic fields. Balls repeatedly thrown onto the road at various points near the 68km marker invariably stopped in their tracks and began to roll uphill.

Because the road is cambered, they often ran sideways to the edge of the road, but never downhill. When I threw the balls at points toward the yellow line from within the "magic" area, the balls stopped on the line and rolled backward.

What the spirit level did reveal is that the stretch of road is losing elevation when it clearly appeared to me and everyone I talked to that it is going up.

Then there's another puzzling feature: After stopping my Toyota Fortune near the top of the hill and releasing the brake with the engine switched off, the car wouldn't move in either direction. It just stood still as if it was pinned down, or on an

absolutely level surface. Even at a car park the car will move backward or forward if the surface is little uneven.

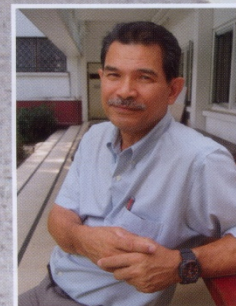
In the end the tests provided more questions than answers. An internet search revealed that around the world there are over 30 countries – from Australia to the United States – that have places similar to the Magic Hill. These have names like Magnetic Hill, Gravity Hill or Mystery Hill, and most have been attributed to optical illusions. However, after looking at photos and video clips of these places, I have to say that none appeared as steep and gravity-defying as the hill outside of Mae Sot.

The scientific explanation

I asked a prominent Thai geologist, Associate Professor Punya Charusiri PhD, Head of Research Unit for Earthquake and Tectonic Geology at Chulalongkorn University in Bangkok, what exactly is going on along this stretch of mountain road. He said it was an optical illusion, as the spirit level also indicated.

"You are not the first to ask me about this phenomena," said Professor Punya, smiling.

"Villagers and even Forest Department officials have come to me as well. People from a Thai TV station wanted to do a feature on the Magic Hill. They were hoping to make a big splash by revealing this magic spot to



From this viewpoint, Magic Hill appears to be on an incline. But the spirit level, placed on the yellow line which marks the start of the 'magic,' tells a different story.



The woman pictured here appears to be walking downhill. However, she's actually walking uphill - according to the spirit level.



the world. They came to me for an explanation, and after I gave it to them they weren't much interested in doing the show. I will tell you what I told them.

"There's nothing magic about it, and we have proved it," he said. "What is going on there is caused by the slope, which seems to be, I would say, unreal from your eyes. The slope looks like it is going up but actually it is going down.

"The car is really going down, not up. The judgment based on what you see is wrong. Geologists call such stretches of terrain a false landscape.

"It has nothing to do with magnetic forces."

The professor said that he and some of his colleagues and students had carried out a detailed survey of the hill to look for iron or other magnetic deposits, and they are quite certain the phenomenon has nothing to do with an aberrant magnetic field or anything that can't be explained by the laws of physics. It is a kind of illusion of perspective that occurs because of the natural topography at that location, he explained.

"Several outstanding geologists, including myself, went there to check out the hill where it appears a car can go uphill without power. I thought that there might be some magnetite deposit in that area causing the phenomenon.

"But when we came with a magnetometer we couldn't see anything to indicate that there's any magnetite or iron oxide deposit in the ground at that location," said Professor Punya, whose primary research involves seismic fault lines in Thailand.

"In fact, it is now very easy to prove that the Magic Hill is an optical illusion. A colleague who was curious about what was going on suggested the use of the Global Positioning System (GPS), which will tell you even very slight differences in the elevation. The GPS gave us a very good clue that the topography is, in fact, a false topography.

"What one sees is an illusion," he reiterated. "You may believe you are standing on top of the hill, but you are not." He added, however, that he is interested in conducting a more

detailed investigation of the topography and intends to do so next year. "What we've done so far is only preliminary because we didn't spend much time there. I want to go back and take some students with me and stay for one or two weeks with more instruments. For instance, a more sophisticated magnetometer and other instruments to perform a proper geodetic analysis [a branch of applied mathematics that deals with the measurement and representation of the Earth, including its gravitational field, in a three-dimensional time-varying space], so we can get some control lines which represent elevations of equal height. If I can do that then I can prove what is really going on there."

"This phenomenon is a rare case because not only a few people can see the illusion, pretty much everyone does. Therefore it interests me from a scientific standpoint," said Professor Punya. In the end, however, he has little doubt that it is an illusion.

"As far as I know there's no other place in Thailand like the Magic Hill, but there could be," he added.

Magical mystery tourism

Locals in Mae Sot who have been travelling on this road for decades, even before it was widened, all said that they don't accept the official explanation that the road is actually sloping down, not up, and that it is simply an optical illusion. They wonder what is really going on there. I must admit that, as someone who tends to believe his own eyes, I wasn't quite convinced by the official explanation either, even after checking the slope with the spirit level.

On the day I was there many Thai motorists were testing the magic for themselves. They couldn't believe their eyes. Some said that there may be something under the ground, possibly a spirit. One motorist suggested there was some sort of supernatural conveyor belt that pulls objects up.

"It defies gravity. If you can see you are looking down or up the hill, how could it be the other way around?" asked a truck driver who said he enjoyed being pushed up the hill. He wished this kind of road could be found all over Thailand. "It would save a lot of money for fuel," he joked.

It has been suggested that the Magic Hill should be developed into a tourist attraction by the Tourism Authority of Thailand, and I second the motion.

Whatever the secret of the Magic Hill is, it won't go away. I intend to go back, and I'm sure it would attract many Thai and foreign visitors as well.