

1

00:00:00,000 --> 00:00:05,660

In this episode of Mythbusters...

2

00:00:05,660 --> 00:00:10,920

It's a barrel of bricks and the world's unluckiest builder.

3

00:00:10,920 --> 00:00:15,740

We gotta go now.

4

00:00:15,740 --> 00:00:17,740

Answering nature's call...

5

00:00:17,740 --> 00:00:20,960

Oh man, warm.

6

00:00:20,960 --> 00:00:22,960

On an electrified third rail...

7

00:00:22,960 --> 00:00:25,640

You've got the lights almost pulled.

8

00:00:25,640 --> 00:00:27,140

It's a total disaster.

9

00:00:27,440 --> 00:00:29,440

The eel and the credit card.

10

00:00:29,440 --> 00:00:31,440

The ultimate smackdown.

11

00:00:31,440 --> 00:00:33,440

Electric eel is looking at me right in the eye.

12

00:00:33,440 --> 00:00:34,440

He goes ZAP!

13

00:00:34,440 --> 00:00:36,440

Knocked backwards off the rail.

14

00:00:36,440 --> 00:00:38,440

Oh, that's disgusting.

15

00:00:38,440 --> 00:00:40,440

Who are the Mythbusters?

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00:00:40,440 --> 00:00:42,440

Is my missing an eyebrow?

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00:00:42,440 --> 00:00:44,440

Adam Savage.

18

00:00:44,440 --> 00:00:47,440

I always enjoyed seeing Adam in pain.

19

00:00:47,440 --> 00:00:49,440

Oh!

20

00:00:49,440 --> 00:00:51,440

And Jamie Heineman.

21

00:00:51,440 --> 00:00:53,440

Jamie wants big bones.

22

00:00:53,440 --> 00:00:56,440

30 years of special effects experience.

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00:00:56,440 --> 00:00:58,440

Feel kind of sexy.

24

00:00:58,440 --> 00:01:00,440

They don't just tell the Myth.

25

00:01:00,440 --> 00:01:02,440

They put them to the test.

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00:01:14,440 --> 00:01:16,440

This one is the barrel of bricks myth.

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00:01:16,440 --> 00:01:17,440

Oh!

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00:01:17,440 --> 00:01:19,440

This is the one the guy is trying to take bricks off of a roof.

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00:01:19,440 --> 00:01:23,440

And the barrel's too heavy and it drags him up, hits him on the way up.

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00:01:23,440 --> 00:01:25,440

Cracks his skull, injures his collarbone.

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00:01:25,440 --> 00:01:31,440

Keeps shooting straight up until he's about two knuckles deep into the pulley.

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00:01:31,440 --> 00:01:34,440

Of course the barrel exploded when it hit the ground, losing the load.

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00:01:34,440 --> 00:01:37,440

Then his weight was obviously heavier than the barrel's weight.

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00:01:37,440 --> 00:01:41,440

The barrel goes back up and this guy goes back down.

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00:01:41,440 --> 00:01:43,440

He hits the barrel about halfway down.

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00:01:43,440 --> 00:01:49,440

I'd even heard that he then let go of the rope and what was remaining of the barrel came down and hit him.

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00:01:49,440 --> 00:01:50,440

But he survives.

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00:01:50,440 --> 00:01:51,440

Yes.

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00:01:51,440 --> 00:01:52,440

So we're going to replicate this.

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00:01:52,440 --> 00:01:54,440

Yeah, it's going to be tricky.

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00:01:54,440 --> 00:01:58,440

This is a study in physics and bad luck.

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00:01:58,440 --> 00:02:01,440

Victim holds rope, heavy barrel pulls him up.

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00:02:01,440 --> 00:02:04,440

The barrel breaks and loses its load so the victim falls.

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00:02:04,440 --> 00:02:07,440

Victim lets go the rope, gravity does the rest.

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00:02:09,440 --> 00:02:15,440

To test this myth, the guys will have to create a building site scaffold 30 feet high.

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00:02:15,440 --> 00:02:23,440

They'll run a rope through a pulley at the top with a 500 pound barrel of bricks on one side and the victim on the other.

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00:02:25,440 --> 00:02:34,440

The boys are negotiating the tricky question of who holds the rope.

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00:02:34,440 --> 00:02:35,440

No, stop spinning like this.

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00:02:35,440 --> 00:02:37,440

Throw me into the shop.

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00:02:39,440 --> 00:02:40,440

Oh, God.

51

00:02:40,440 --> 00:02:42,440

I'm going to spew.

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00:02:42,440 --> 00:02:43,440

That was evil.

53

00:02:46,440 --> 00:02:50,440

Looks like another job for Buster, the crash test dummy.

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00:02:50,440 --> 00:02:54,440

With that problem solved, Jamie and Adam have some serious shopping to do.

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00:03:01,440 --> 00:03:06,440

First, they need a rope and pulley capable of lifting 500 pounds.

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00:03:06,440 --> 00:03:07,440

This is a rougher's block.

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00:03:07,440 --> 00:03:14,440

So if you have a 500 pound load of bricks and you're pulling that load of bricks 500 pounds on the opposite side,

58

00:03:14,440 --> 00:03:18,440

but with the rope, you'll be putting a thousand pounds of capacity on the block.

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00:03:18,440 --> 00:03:19,440

This is a more traditional rope.

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00:03:19,440 --> 00:03:20,440

It's manila.

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00:03:20,440 --> 00:03:21,440

It's made out of tree fiber.

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00:03:21,440 --> 00:03:23,440

Of course, it's a little rougher on the hand.

63

00:03:24,440 --> 00:03:25,440

Manila rope.

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00:03:25,440 --> 00:03:30,440

That'll hogtie this myth, which just might have some truth to it.

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00:03:31,440 --> 00:03:33,440

So is the myth widely known in the rigging industry?

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00:03:33,440 --> 00:03:35,440

I mean, a lot of people know about this one.

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00:03:35,440 --> 00:03:36,440

I think so.

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00:03:36,440 --> 00:03:37,440

I think that's, yeah, I recall it.

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00:03:37,440 --> 00:03:39,440

I remember hearing the story a couple of times.

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00:03:39,440 --> 00:03:41,440

It's quite a calamity.

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00:03:42,440 --> 00:03:46,440

Over at the brickyard, Kevin's heard about this one too.

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00:03:47,440 --> 00:03:55,440

I think I may have seen it in a trade magazine where somebody, he had put in a claim to a worker's comp or something like that.

73

00:03:55,440 --> 00:03:57,440

Truth is stranger than fiction.

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00:03:59,440 --> 00:04:04,440

According to folklorist Heather Joseph Witham, this story regularly pops up in print.

75

00:04:06,440 --> 00:04:12,440

Reports to be an accident report or a worker's compensation claim or something like that.

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00:04:12,440 --> 00:04:17,440

So it's by showing the written form of it, it has more veracity and seems more truthful.

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00:04:17,440 --> 00:04:24,440

It's almost like Wild Lee Coyote on one of his adventures, getting hit here, getting hit there, dying here, dying there.

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00:04:25,440 --> 00:04:28,440

For some reason, we think that's funny or interesting.

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00:04:31,440 --> 00:04:35,440

It's interesting enough to have the guys testing the rig back at the workshop.

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00:04:36,440 --> 00:04:37,440

Nothing is left to chance.

81

00:04:38,440 --> 00:04:39,440

This is serious business.

82

00:04:43,440 --> 00:04:44,440

Excellent!

83

00:04:53,440 --> 00:04:59,440

Buster has been fitted with a quick release hand, so the guys can make him let go of the rope at the right moment.

84

00:05:00,440 --> 00:05:03,440

In this myth, precision is everything.

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00:05:05,440 --> 00:05:08,440

We get to see what happens when you fall from eight feet.

86

00:05:08,440 --> 00:05:09,440

Okay, go ahead.

87

00:05:10,440 --> 00:05:15,440

The quick release failed its first test.

88

00:05:16,440 --> 00:05:21,440

Adam, it's a good thing to figure all this out before we get down there with 500 pounds of bricks on the end of that line.

89

00:05:22,440 --> 00:05:25,440

I have some ideas about how to fix that.

90

00:05:30,440 --> 00:05:31,440

I gotta say that looks like it hurt.

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00:05:32,440 --> 00:05:35,440

Unfortunately for Buster, there's more to come.

92

00:05:40,440 --> 00:05:41,440

Oh!

93

00:05:47,440 --> 00:05:48,440

The quick releases are fine.

94

00:05:49,440 --> 00:05:50,440

How's that feel, Sport?

95

00:05:51,440 --> 00:05:52,440

Huh?

96

00:05:52,440 --> 00:05:54,440

It's time to raise the stakes.

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00:05:55,440 --> 00:05:56,440

Raise them by 30 feet.

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00:05:57,440 --> 00:05:58,440

All right.

99

00:05:59,440 --> 00:06:03,440

Jamie and Adam will use their theater rigging experience to help build a scaffold.

100

00:06:10,440 --> 00:06:13,440

You got any idea what these are for?

101

00:06:17,440 --> 00:06:18,440

Oh, oh, okay.

102

00:06:19,440 --> 00:06:21,440

Am I about to feel really, really stupid?

103

00:06:21,440 --> 00:06:22,440

Probably.

104

00:06:27,440 --> 00:06:28,440

Now that's a floor.

105

00:06:29,440 --> 00:06:31,440

Both of them know the risks.

106

00:06:32,440 --> 00:06:34,440

More than 10 feet, you can break limbs.

107

00:06:34,440 --> 00:06:39,440

At where we are at about 30 feet, you could easily die falling that high.

108

00:06:39,440 --> 00:06:42,440

The pulley is attached to a crossbar at the top of the scaffold.

109

00:06:43,440 --> 00:06:50,440

With 500 pounds in the barrel, plus the counterbalance on the other side, there'll be a thousand pounds of pressure on the rig.

110

00:06:51,440 --> 00:06:56,440

Where the pulley is, is actually pulling on the backside of the scaffolding.

111

00:06:57,440 --> 00:07:02,440

So in fact, a tremendous amount of force is on two little bolts that are holding the back of the scaffolding up.

112

00:07:03,440 --> 00:07:06,440

The guys are also worried about the strength of the barrels.

113

00:07:07,440 --> 00:07:09,440

Here's perhaps the critical question.

114

00:07:09,440 --> 00:07:14,440

When the barrel supposedly falls, it breaks and lets go of its bricks.

115

00:07:14,440 --> 00:07:16,440

Do you think these barrels will do that?

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00:07:16,440 --> 00:07:17,440

Personally, I doubt it.

117

00:07:17,440 --> 00:07:19,440

See, I think they'll fall out on the first try.

118

00:07:19,440 --> 00:07:20,440

I think it'll shatter.

119

00:07:20,440 --> 00:07:21,440

You want a bet?

120

00:07:21,440 --> 00:07:23,440

Oh no, here we go again.

121

00:07:23,440 --> 00:07:24,440

Come on, I got a dollar.

122

00:07:24,440 --> 00:07:25,440

Here we go.

123

00:07:27,440 --> 00:07:28,440

You want to drop some bricks?

124

00:07:28,440 --> 00:07:29,440

Yeah.

125

00:07:29,440 --> 00:07:30,440

Okay, let's go.

126

00:07:31,440 --> 00:07:32,440

Wait a second.

127

00:07:36,440 --> 00:07:42,440

The empty barrel is raised into position on the pulley and tied onto the fender of Jamie's truck.

128

00:07:42,440 --> 00:07:43,440

Latching on.

129

00:07:44,440 --> 00:07:45,440

Got it?

130

00:07:45,440 --> 00:07:47,440

Buster's quick release hand is attached.

131

00:07:47,440 --> 00:07:48,440

Okay.

132

00:07:49,440 --> 00:07:51,440

And things start to get dangerous.

133

00:07:52,440 --> 00:07:56,440

500 pounds of bricks will be loaded into the barrel.

134

00:07:56,440 --> 00:07:59,440

Everybody keep their eyes on the barrel and keep yourself out of its path.

135

00:08:01,440 --> 00:08:04,440

A lot of creaking going on up here.

136

00:08:05,440 --> 00:08:08,440

Our main pipe is bending a little bit.

137

00:08:09,440 --> 00:08:13,440

If that pipe bends anymore, the whole rig could crash.

138

00:08:13,440 --> 00:08:16,440

Back me away from this a little bit.

139

00:08:18,440 --> 00:08:23,440

Jamie's got the last bricks in, but they don't know how long the rig will hold.

140

00:08:24,440 --> 00:08:26,440

Our rope stretched about maybe five feet.

141

00:08:26,440 --> 00:08:27,440

We're down about 20 feet.

142

00:08:27,440 --> 00:08:31,440

I'm not even sure actually that the pulley is going to stay on that pipe.

143

00:08:31,440 --> 00:08:32,440

The pipe's bending.

144

00:08:32,440 --> 00:08:33,440

We got to go now.

145

00:08:33,440 --> 00:08:34,440

Yeah.

146

00:08:34,440 --> 00:08:35,440

Okay.

147

00:08:35,440 --> 00:08:41,440

In five, four, three, two, one.

148

00:08:49,440 --> 00:08:51,440

The barrel didn't fail.

149

00:08:53,440 --> 00:08:54,440

All right, I owe you a dollar.

150

00:08:54,440 --> 00:08:55,440

Here you go.

151

00:08:55,440 --> 00:08:56,440

No, that's a five.

152

00:08:56,440 --> 00:08:57,440

I'll take that.

153

00:08:58,440 --> 00:09:03,440

Even with 500 pounds of bricks falling from 20 feet, the barrel stays intact.

154

00:09:06,440 --> 00:09:12,440

The barrel is supposed to spill the bricks, fly back up to the pulley, then fall when the rope is released.

155

00:09:13,440 --> 00:09:16,440

Instead, Buster is left hanging.

156

00:09:16,440 --> 00:09:19,440

So far, everything seems to be spot on.

157

00:09:19,440 --> 00:09:23,440

The amount of weight in the barrel is certainly enough to really launch this guy.

158

00:09:23,440 --> 00:09:24,440

It was violent.

159

00:09:24,440 --> 00:09:28,440

It made him sling into the barrel and whip them around all over the place.

160

00:09:28,440 --> 00:09:32,440

And, you know, we just need to get the whole thing timed just right.

161

00:09:33,440 --> 00:09:34,440

It's not only timing.

162

00:09:34,440 --> 00:09:39,440

They have to strengthen the rig by putting in a second pipe to share the load.

163

00:09:40,440 --> 00:09:42,440

I think we should just try it again with this barrel.

164

00:09:42,440 --> 00:09:44,440

I'm not even sure it'll hold 500 pounds.

165

00:09:45,440 --> 00:09:48,440

Jamie's gambling that it's still pretty strong.

166

00:09:48,440 --> 00:09:52,440

In fact, he's taking off some of the steel reinforcing bands.

167

00:09:52,440 --> 00:09:59,440

He's not convinced that even if the bottom falls out, that the bricks would come out because the

barrel has got a shape like this.

168

00:09:59,440 --> 00:10:01,440

And he thinks the bricks would wedge in.

169

00:10:01,440 --> 00:10:03,440

He's totally wrong.

170

00:10:03,440 --> 00:10:04,440

He's on.

171

00:10:04,440 --> 00:10:06,440

They'll soon know who's right.

172

00:10:06,440 --> 00:10:09,440

The rig is holding and ready to go.

173

00:10:09,440 --> 00:10:12,440

Three, two, one.

174

00:10:16,440 --> 00:10:19,440

Damn, barrel.

175

00:10:19,440 --> 00:10:21,440

It didn't do squat.

176

00:10:21,440 --> 00:10:23,440

I'm not even sure what to do with this guy.

177

00:10:23,440 --> 00:10:25,440

I'm not even sure what to do with this guy.

178

00:10:25,440 --> 00:10:27,440

I'm not even sure what to do with this guy.

179

00:10:27,440 --> 00:10:29,440

Damn, barrel.

180

00:10:29,440 --> 00:10:31,440

It didn't do squat.

181

00:10:31,440 --> 00:10:33,440

What is this?

182

00:10:33,440 --> 00:10:36,440

This barrel is too damn strong.

183

00:10:36,440 --> 00:10:38,440

I, I, you know what?

184

00:10:38,440 --> 00:10:39,440

I was right.

185

00:10:39,440 --> 00:10:41,440

Oh right. You were right.

186

00:10:41,440 --> 00:10:46,440

This 2,000 year old technology is proving a tough nut to crack.

187

00:10:46,440 --> 00:10:50,440

Unexpectedly, the problem isn't the bottom, but the sides.

188

00:10:51,440 --> 00:10:57,440

You know, I'm starting to believe that the myth didn't happen because the nature of the taper and the steel bands that are on it,

189

00:10:57,440 --> 00:11:00,440

it just doesn't want to let go of those bricks.

190

00:11:10,440 --> 00:11:14,440

A board in the drop zone will make for a rougher landing.

191

00:11:14,440 --> 00:11:17,440

But Adam's confidence is shot.

192

00:11:17,440 --> 00:11:22,440

I've been wrong every other time, so I don't know what the hell is going to happen.

193

00:11:22,440 --> 00:11:27,440

They've taken off so many rings, they're not even sure it will hold the bricks away.

194

00:11:27,440 --> 00:11:31,440

Okay, remember Adam, there may be bricks everywhere.

195

00:11:34,440 --> 00:11:36,440

So far so good.

196

00:11:36,440 --> 00:11:41,440

You've got that knife blade of a board down there, I don't know what that's going to do.

197

00:11:41,440 --> 00:11:43,440

You don't know what it's going to do?

198

00:11:43,440 --> 00:11:50,440

It's going to wreck the barrel for us in 5, 4, 3, 2...

199

00:12:03,440 --> 00:12:06,440

It worked perfectly!

200

00:12:07,440 --> 00:12:09,440

That was fun. That was really cool.

201

00:12:09,440 --> 00:12:12,440

I mean, it went up, it went down, it went up, it went down.

202

00:12:12,440 --> 00:12:18,440

It's like dummy getting beaten every which way on the whole process. That was hysterical.

203

00:12:19,440 --> 00:12:24,440

Best of all, they finally managed to break the barrel. The board did the trick.

204

00:12:25,440 --> 00:12:28,440

But what does it mean for the myth?

205

00:12:29,440 --> 00:12:38,440

If you were dumb enough to load a barrel that had already been modified to fail, I'd see that the sequence of events is definitely possible.

206

00:12:38,440 --> 00:12:46,440

Just the fact that we were able to get what we got is, I believe, very strong proof that it was conceivable.

207

00:12:46,440 --> 00:12:49,440

But, alas, not true.

208

00:12:49,440 --> 00:12:54,440

Well, in the case of this particular story, it was printed in a 1918 joke book.

209

00:12:54,440 --> 00:12:58,440

So it seems that it may have started as the brainchild of one person.

210

00:12:58,440 --> 00:13:03,440

A joke may be, but Adam and Jamie have proved the barrel of bricks myth is possible.

211

00:13:04,440 --> 00:13:08,440

And if it's funny once, twice should be hilarious.

212

00:13:08,440 --> 00:13:12,440

Have a seat there, buddy. Your life's about to get really hard.

213

00:13:12,440 --> 00:13:15,440

3...2...1...

214

00:13:28,440 --> 00:13:30,440

Buster is busted.

215

00:13:30,440 --> 00:13:34,440

He was designed for testing inside a car with seatbelts.

216

00:13:34,440 --> 00:13:38,440

Smashing unprotected into the barrel was just too much.

217

00:13:39,440 --> 00:13:43,440

We broke a crash test dummy, man. I think that's a red letter today.

218

00:13:51,440 --> 00:13:54,440

It's late. You've had a few drinks.

219

00:13:54,440 --> 00:13:58,440

There's no train expected. Nature's calling.

220

00:13:59,440 --> 00:14:02,440

What could possibly go wrong?

221

00:14:13,440 --> 00:14:15,440

Where are we?

222

00:14:15,440 --> 00:14:22,440

We're here at the Golden Gate Railway Museum in San Francisco, and we're testing the myth about peeing on the third rail.

223

00:14:22,440 --> 00:14:26,440

This is the one guy found himself late at night in a train yard peed on the third rail.

224

00:14:26,440 --> 00:14:29,440

The electrified rail got electrocuted and died.

225

00:14:29,440 --> 00:14:31,440

That's the one.

226

00:14:31,440 --> 00:14:35,440

Some subway systems are powered by an electrified rail on the track.

227

00:14:37,440 --> 00:14:44,440

A steel paddle slides along the top of that third rail, arcing as it draws current.

228

00:14:46,440 --> 00:14:51,440

There's enough power in the New York subway to light the whole state of Vermont.

229

00:14:53,440 --> 00:14:55,440

Attention, feeder board.

230

00:14:55,440 --> 00:15:00,440

Rob Lobenstein is the superintendent of that system. He's well aware of this myth.

231

00:15:00,440 --> 00:15:07,440

My first day on the job, they give you all the safety tips and the warnings, and that's the very first thing they tell you not to do.

232

00:15:07,440 --> 00:15:14,440

After 34 years, Rob still has a healthy caution about electricity jumping up urine streams.

233

00:15:14,440 --> 00:15:16,440

Do you want to pee on that, Jamie?

234

00:15:16,440 --> 00:15:18,440

I don't want to pee on that.

235

00:15:19,440 --> 00:15:22,440

Come on, do you feel lucky?

236

00:15:24,440 --> 00:15:30,440

To test this myth, they'll need to make a stunt dummy with the same electrical properties as a human body.

237

00:15:30,440 --> 00:15:34,440

They'll have to come up with a system to make it pee.

238

00:15:36,440 --> 00:15:38,440

Electrify a track.

239

00:15:38,440 --> 00:15:43,440

And finally, test urine's ability to conduct a challenge.

240

00:15:44,440 --> 00:15:48,440

So the boys need a dummy that can answer nature's call.

241

00:15:48,440 --> 00:15:50,440

They'll start with a skeleton.

242

00:15:53,440 --> 00:15:56,440

Okay, this is actually a nice one.

243

00:15:56,440 --> 00:15:59,440

Did it come with a body bag?

244

00:16:07,440 --> 00:16:08,440

Stop.

245

00:16:08,440 --> 00:16:11,440

I'll always miss my old skeleton. It's too bad.

246

00:16:11,440 --> 00:16:15,440

He got his head blown off with a Mannlicher-Carcano rifle.

247

00:16:17,440 --> 00:16:24,440

In the past, they've encased a skeleton in a product called Ballistics Gel, which is used to test bullets.

248

00:16:24,440 --> 00:16:28,440

The guys think it might work well here, too.

249

00:16:28,440 --> 00:16:33,440

It has nearly exactly the same electrical resistance as the human body.

250

00:16:33,440 --> 00:16:36,440

They just need to mold it into shape.

251

00:16:37,440 --> 00:16:44,440

We use the vacuum form for all sorts of things. We use it all the time here in the shop.

252

00:16:44,440 --> 00:16:46,440

Let's carry this over and cut it out.

253

00:16:46,440 --> 00:16:51,440

We use it for toy prototypes, when we're inventing something.

254

00:16:51,440 --> 00:16:54,440

The same plastic is used in soda bottles.

255

00:16:54,440 --> 00:16:58,440

They'll mold the dummies front and back and join the shells together.

256

00:16:58,440 --> 00:17:02,440

Normally, they'd use glue to do that.

257

00:17:03,440 --> 00:17:09,440

But Adam's made an executive decision. He thinks it'll be quicker just to use tape.

258

00:17:13,440 --> 00:17:17,440

He's looking pretty healthy. I've always wanted my own full-sized, visible human.

259

00:17:17,440 --> 00:17:25,440

The same speed that Adam has when he goes through and does a job will elicit an occasional mistake,

260

00:17:25,440 --> 00:17:28,440

because he doesn't think before he does something.

261

00:17:29,440 --> 00:17:33,440

The next step is to fill the legs with gel, crucial for the experiment

262

00:17:33,440 --> 00:17:37,440

that will give them the same electrical properties as humans.

263

00:17:37,440 --> 00:17:43,440

They make this stuff out of boiled-down animal products, like cow hooves.

264

00:17:45,440 --> 00:17:47,440

It's really pile.

265

00:17:49,440 --> 00:17:53,440

Stop. Stop.

266

00:17:54,440 --> 00:17:57,440

Adam's tape is not holding.

267

00:17:57,440 --> 00:17:59,440

Damn it.

268

00:18:04,440 --> 00:18:07,440

It's leaking from everywhere.

269

00:18:07,440 --> 00:18:09,440

We didn't glue that at all, huh?

270

00:18:09,440 --> 00:18:11,440

No, I didn't.

271

00:18:11,440 --> 00:18:12,440

Adam.

272

00:18:12,440 --> 00:18:13,440

Yup.

273

00:18:13,440 --> 00:18:16,440

Oh, stop playing. Let's do this.

274

00:18:16,440 --> 00:18:18,440

That's such a good sound.

275

00:18:18,440 --> 00:18:20,440

There we go.

276

00:18:20,440 --> 00:18:23,440

Hey, look at that. It's filling up.

277

00:18:23,440 --> 00:18:26,440

Not for long. Now both feet are leaking.

278

00:18:26,440 --> 00:18:29,440

Come on. Come on.

279

00:18:29,440 --> 00:18:32,440

Slanted. The flightway's... oh.

280

00:18:32,440 --> 00:18:34,440

I'm gonna go get my own.

281

00:18:34,440 --> 00:18:36,440

I'm gonna get my own.

282

00:18:36,440 --> 00:18:38,440

I'm gonna get my own.

283

00:18:38,440 --> 00:18:40,440

I'm gonna get my own.

284

00:18:40,440 --> 00:18:42,440

Slanted. The flightway's... oh.

285

00:18:42,440 --> 00:18:47,440

If we get lots of ice in here really fast, we'll be okay.

286

00:18:47,440 --> 00:18:54,440

Ballistics gel sets solid when cooled, but they only have four bags of ice.

287

00:18:54,440 --> 00:18:56,440

I kind of think you're...

288

00:18:56,440 --> 00:18:58,440

There we go.

289

00:18:58,440 --> 00:19:00,440

That's fast enough.

290

00:19:02,440 --> 00:19:04,440

Is there a spigot on this garbage can?

291

00:19:04,440 --> 00:19:06,440

No.

292

00:19:10,440 --> 00:19:12,440

Total crapola.

293

00:19:12,440 --> 00:19:15,440

This is a complete and utter disaster.

294

00:19:15,440 --> 00:19:18,440

It is not. You've got the legs almost full.

295

00:19:18,440 --> 00:19:20,440

It's a total disaster.

296

00:19:20,440 --> 00:19:29,440

I mean, the tape not only didn't hold, but the gelatin acts in a completely negative way upon the tape to render it like useless.

297

00:19:29,440 --> 00:19:35,440

He just kind of forged ahead because, you know, he wants to get the job done and I normally applaud that,

298

00:19:35,440 --> 00:19:40,440

but it's clearly a situation where we need more speed, less haste.

299

00:19:40,440 --> 00:19:42,440

At last, a break.

300

00:19:42,440 --> 00:19:47,440

More ice means they'll get the legs set for the experiment.

301

00:19:53,440 --> 00:20:01,440

One thing that keeps bothering me about this is that, you know, urine itself is probably not gonna conduct all that much.

302

00:20:01,440 --> 00:20:07,440

I mean, we don't really know, but I can't imagine that you're gonna be able to conduct current like you would with a wire.

303

00:20:07,440 --> 00:20:10,440

And so the dirty work begins.

304

00:20:10,440 --> 00:20:12,440

Oh, it's warm.

305

00:20:14,440 --> 00:20:21,440

What this boils down to is how much current can we actually carry through about a quarter inch diameter stream of urine?

306

00:20:21,440 --> 00:20:23,440

And is it enough to kill you?

307

00:20:23,440 --> 00:20:27,440

The guys know it's not just the number of volts in a shark that hurts you,

308

00:20:27,440 --> 00:20:33,440

but rather the amount of electricity that actually flows through you, called the current.

309

00:20:33,440 --> 00:20:39,440

They can work out how much current will zap a third rail victim if they know two other facts.

310

00:20:39,440 --> 00:20:44,440

They need to find out the electrical resistance of urine.

311

00:20:44,440 --> 00:20:49,440

So it's about 10,000 ohms, which is just what we expected.

312

00:20:50,440 --> 00:20:54,440

And they know a subway train runs on about 650 volts.

313

00:20:54,440 --> 00:20:57,440

Your home sockets are 110.

314

00:20:57,440 --> 00:21:01,440

They'll match the subway with a transformer from a fluorescent light.

315

00:21:01,440 --> 00:21:09,440

If you had a rather robust stream of urine and you were able to spray it up on the ceiling into a fluorescent lamp,

316

00:21:09,440 --> 00:21:13,440

you would probably receive the same effect as peeing on the third rail.

317

00:21:13,440 --> 00:21:20,440

A famous electrical formula called Ohm's Law says the current equals voltage divided by resistance.

318

00:21:20,440 --> 00:21:30,440

So 650 volts passing through urine at 10,000 ohms resistance means there'll be a current of 65 milliamps.

319

00:21:30,440 --> 00:21:34,440

Just 30 milliamps is enough to paralyze your breathing.

320

00:21:34,440 --> 00:21:37,440

65 can give you a heart attack.

321

00:21:37,440 --> 00:21:40,440

So that part of the myth is true.

322

00:21:40,440 --> 00:21:43,440

Urine can carry a shock big enough to kill you.

323

00:21:43,440 --> 00:21:49,440

In this dry run, they'll try to pass that current through a tube of donated urine,

324

00:21:49,440 --> 00:21:54,440

through ballistics gel and into a relay switch triggered at 65 milliamps.

325

00:21:54,440 --> 00:21:56,440

We'll be cooking with gas!

326

00:21:56,440 --> 00:22:04,440

And I think we should hear the thing click if it's going to work, if I plug it in right now.

327

00:22:05,440 --> 00:22:08,440

There you go.

328

00:22:08,440 --> 00:22:10,440

That's fantastic!

329

00:22:10,440 --> 00:22:12,440

Something actually worked for a change.

330

00:22:14,440 --> 00:22:20,440

So they've got the body built, tested the urine, now for the bionic bladder.

331

00:22:22,440 --> 00:22:26,440

Well here on MythBusters it seems we'll do just about anything for science.

332

00:22:26,440 --> 00:22:28,440

We've got 250 milliliters there.

333

00:22:28,440 --> 00:22:31,440

It took about 18 and a half seconds.

334

00:22:31,440 --> 00:22:35,440

And that's what we're going to try to replicate with our rail rig.

335

00:22:35,440 --> 00:22:37,440

Here I go.

336

00:22:45,440 --> 00:22:47,440

Start in...

337

00:22:47,440 --> 00:22:49,440

now.

338

00:22:52,440 --> 00:22:54,440

10 seconds.

339

00:22:54,440 --> 00:22:56,440

10 seconds.

340

00:22:56,440 --> 00:22:58,440

19 seconds, that's perfect.

341

00:22:59,440 --> 00:23:01,440

That's a relief.

342

00:23:02,440 --> 00:23:05,440

But Adam's still got bladder problems.

343

00:23:05,440 --> 00:23:09,440

So the question is pressure, I think.

344

00:23:09,440 --> 00:23:12,440

Personally I don't let gravity do my trick.

345

00:23:12,440 --> 00:23:15,440

You know there's some pressure involved.

346

00:23:15,440 --> 00:23:20,440

So the question is, how to add pressure to the system?

347

00:23:20,440 --> 00:23:25,440

What better way to pressurize a fake bladder than with a whoopee cushion?

348

00:23:25,440 --> 00:23:28,440

Yeah, that's holding pressure.

349

00:23:28,440 --> 00:23:31,440

Better still, it fits perfectly.

350

00:23:36,440 --> 00:23:39,440

But of course that's only half the equipment.

351

00:23:39,440 --> 00:23:42,440

If you make the stream really small and narrow,

352

00:23:42,440 --> 00:23:46,440

the surface tension is going to tend to make it go into a sprayer.

353

00:23:46,440 --> 00:23:50,440

Yeah, I've gone as close as I can to the real thing.

354

00:23:50,440 --> 00:23:52,440

You had to fill it up?

355

00:23:52,440 --> 00:23:54,440

Yeah.

356

00:23:54,440 --> 00:23:55,440

Are you ready?

357

00:23:55,440 --> 00:23:56,440

Ready.

358

00:23:56,440 --> 00:23:57,440

Commencing.

359

00:23:57,440 --> 00:23:59,440

Wee-wee.

360

00:24:04,440 --> 00:24:06,440

Looks like a pretty convincing stream to me.

361

00:24:06,440 --> 00:24:07,440

Yeah.

362

00:24:07,440 --> 00:24:09,440

Getting urine everywhere.

363

00:24:09,440 --> 00:24:11,440

It looks okay.

364

00:24:11,440 --> 00:24:13,440

It's a little bit of a shame.

365

00:24:13,440 --> 00:24:15,440

Getting urine everywhere.

366

00:24:15,440 --> 00:24:19,440

It looks okay, but how close to real is it?

367

00:24:19,440 --> 00:24:22,440

What they need is a comparison.

368

00:24:22,440 --> 00:24:26,440

Volunteers, anyone?

369

00:24:31,440 --> 00:24:37,440

Once more, Adam is forced to offer his bladder and dignity to science.

370

00:24:37,440 --> 00:24:41,440

Here on MythBusters, we're prepared to put our pants on the floor for you.

371

00:24:41,440 --> 00:24:46,440

The moment to remember will be captured on high-speed camera.

372

00:24:46,440 --> 00:24:48,440

I think I got 100 mils.

373

00:24:48,440 --> 00:24:49,440

You ready?

374

00:24:49,440 --> 00:24:51,440

All right, here we go.

375

00:24:52,440 --> 00:24:55,440

This is not our ballistics dummy that we're looking at here, right?

376

00:24:55,440 --> 00:24:57,440

It's a real live dummy.

377

00:24:57,440 --> 00:24:59,440

This is what it is.

378

00:24:59,440 --> 00:25:01,440

All right.

379

00:25:02,440 --> 00:25:04,440

We have a match.

380

00:25:06,440 --> 00:25:09,440

Finally, Adam has a leak he's happy with.

381

00:25:09,440 --> 00:25:10,440

The science is good.

382

00:25:10,440 --> 00:25:12,440

We know why things are working and why they're not working.

383

00:25:12,440 --> 00:25:14,440

And we're getting some really good results.

384

00:25:14,440 --> 00:25:17,440

I'm having a great time as dirty as the work is.

385

00:25:17,440 --> 00:25:19,440

Okay.

386

00:25:19,440 --> 00:25:20,440

There we go.

387

00:25:20,440 --> 00:25:24,440

The MythBusters are ready to ride the third round.

388

00:25:24,440 --> 00:25:25,440

That's good.

389

00:25:25,440 --> 00:25:27,440

Where's the Wee bottle I have to go?

390

00:25:27,440 --> 00:25:29,440

I guess I can hold it until we're down there.

391

00:25:29,440 --> 00:25:31,440

Oh, man.

392

00:25:39,440 --> 00:25:41,440

The MythBusters

393

00:25:52,440 --> 00:25:55,440

Jamie and Adam have rolled into the Golden Gate Railway Museum

394

00:25:55,440 --> 00:25:59,440

to test the myth about the guy who died the nastiest of deaths,

395

00:25:59,440 --> 00:26:02,440

relieving himself on an electrified third rail.

396

00:26:03,440 --> 00:26:06,440

Usually when you hear the narrative, the guy has a name.

397

00:26:06,440 --> 00:26:08,440

It's Joseph Patrick O'Malley,

398

00:26:08,440 --> 00:26:10,440

a more Irish name you couldn't get.

399

00:26:10,440 --> 00:26:13,440

So I suspicion that part of this is a stereotypical legend

400

00:26:13,440 --> 00:26:18,440

and it promoted the stereotype of the drunken, thick Irishman.

401

00:26:19,440 --> 00:26:21,440

O'Malley is in for a rough time.

402

00:26:21,440 --> 00:26:25,440

He's been built with the same electrical properties as the human body.

403

00:26:26,440 --> 00:26:30,440

The plan is to wire him up so that if the myth is true,

404

00:26:30,440 --> 00:26:34,440

current will run from the third rail, up his urine stream,

405

00:26:34,440 --> 00:26:36,440

and trigger an electric release switch,

406

00:26:36,440 --> 00:26:38,440

knocking him over backwards.

407

00:26:38,440 --> 00:26:40,440

The current by then will be exiting his feet.

408

00:26:41,440 --> 00:26:45,440

There's no third rail here, so they'll build their own,

409

00:26:46,440 --> 00:26:50,440

attaching a section of track to a 650-volt transformer.

410

00:26:52,440 --> 00:26:57,440

And once in position, there's the delicate, but most important issue.

411

00:26:58,440 --> 00:26:59,440

Perfect.

412

00:27:00,440 --> 00:27:02,440

How's the P.A.M. look?

413

00:27:02,440 --> 00:27:04,440

P.A.M. looks pretty good to me.

414

00:27:04,440 --> 00:27:06,440

I think that's going to hit handily.

415

00:27:06,440 --> 00:27:07,440

Okay.

416

00:27:07,440 --> 00:27:09,440

He looks beautiful.

417

00:27:09,440 --> 00:27:11,440

What would my having this in my house?

418

00:27:11,440 --> 00:27:13,440

Start to stink after a while.

419

00:27:14,440 --> 00:27:16,440

Yeah, I've had that problem before.

420

00:27:17,440 --> 00:27:19,440

Adam, is your bladder ready to do the real thing?

421

00:27:19,440 --> 00:27:22,440

Yeah, we've got it set up basically the way we think it would be set up in real life,

422

00:27:22,440 --> 00:27:25,440

the way someone would actually happen across the situation.

423

00:27:25,440 --> 00:27:27,440

It's a dry day, the ground is dry,

424

00:27:27,440 --> 00:27:30,440

our subject is wearing normal, rubber-soled shoes.

425

00:27:31,440 --> 00:27:35,440

He's having a wee on the rail, there's no wires around him.

426

00:27:35,440 --> 00:27:38,440

We'll electrify the rail and we'll see what happens to him.

427

00:27:40,440 --> 00:27:43,440

The guys will stand on a rubber mat to insulate them.

428

00:27:44,440 --> 00:27:47,440

O'Malley, well, he probably wishes he'd had that drink.

429

00:27:48,440 --> 00:27:50,440

The electric release is like a human heart.

430

00:27:50,440 --> 00:27:53,440

If it's triggered, he's a dead man.

431

00:27:53,440 --> 00:28:00,440

Let's make this set hot.

432

00:28:00,440 --> 00:28:02,440

Hot set?

433

00:28:02,440 --> 00:28:04,440

Three, two, one.

434

00:28:18,440 --> 00:28:19,440

Nothing.

435

00:28:19,440 --> 00:28:20,440

The release wasn't triggered.

436

00:28:20,440 --> 00:28:22,440

O'Malley lives another day.

437

00:28:23,440 --> 00:28:25,440

Adam's putting on a brave face.

438

00:28:25,440 --> 00:28:27,440

That's exactly what I expected.

439

00:28:27,440 --> 00:28:30,440

He's got rubber-soled shoes, he's on dry ground,

440

00:28:30,440 --> 00:28:34,440

there's no way a mere 600 volts is going to arc through his shoes.

441

00:28:36,440 --> 00:28:39,440

But there's life in this myth yet.

442

00:28:39,440 --> 00:28:43,440

Maybe it was a rainy night, the guy's shoes were wet.

443

00:28:43,440 --> 00:28:45,440

That would help complete the circuit with the ground.

444

00:28:47,440 --> 00:28:49,440

Bladder recharging.

445

00:28:49,440 --> 00:28:53,440

Hot set.

446

00:28:53,440 --> 00:28:55,440

We're electrified, here we go.

447

00:29:01,440 --> 00:29:02,440

Nothing.

448

00:29:03,440 --> 00:29:05,440

Not a thing.

449

00:29:05,440 --> 00:29:07,440

Damn.

450

00:29:07,440 --> 00:29:10,440

I really, he needs to see a doctor.

451

00:29:10,440 --> 00:29:11,440

Set is cool.

452

00:29:11,440 --> 00:29:15,440

Jamie, dry shoes didn't work, wet shoes, wet ground didn't work.

453

00:29:15,440 --> 00:29:16,440

What's next?

454

00:29:16,440 --> 00:29:19,440

Well I guess the only thing left is to take his shoes off

455

00:29:19,440 --> 00:29:21,440

and we'll assume he's barefoot.

456

00:29:21,440 --> 00:29:23,440

Okay.

457

00:29:23,440 --> 00:29:25,440

Okay, there's two.

458

00:29:28,440 --> 00:29:30,440

Stumbling around the train yard late at night

459

00:29:30,440 --> 00:29:32,440

looking for a place to pee barefoot.

460

00:29:32,440 --> 00:29:34,440

Alright, are we good?

461

00:29:34,440 --> 00:29:35,440

Hot set.

462

00:29:35,440 --> 00:29:37,440

Alright, here we go.

463

00:29:40,440 --> 00:29:43,440

Nope, nope, there's no connection going.

464

00:29:43,440 --> 00:29:46,440

The guys are starting to suspect the problem isn't in the feet

465

00:29:46,440 --> 00:29:48,440

but the urine stream.

466

00:29:48,440 --> 00:29:51,440

Perhaps it's not carrying the current.

467

00:29:51,440 --> 00:29:55,440

Yeah, it looks like those are not forming a solid stream.

468

00:29:55,440 --> 00:29:56,440

Yeah.

469

00:29:57,440 --> 00:30:00,440

But suddenly they've got another, more dangerous issue.

470

00:30:00,440 --> 00:30:02,440

What's that sound?

471

00:30:04,440 --> 00:30:08,440

The wet ground beneath their mat is live with electricity.

472

00:30:08,440 --> 00:30:09,440

Yeah.

473

00:30:09,440 --> 00:30:11,440

Off, turn it off.

474

00:30:12,440 --> 00:30:17,440

Again, it just shows what we knew which is that the urine is highly conductive

475

00:30:17,440 --> 00:30:21,440

and that that couldn't have been a continuous stream of urine

476

00:30:21,440 --> 00:30:24,440

because if it was we would have activated the relay, right?

477

00:30:24,440 --> 00:30:26,440

Yeah, we should see that on the high speed.

478

00:30:26,440 --> 00:30:27,440

Yeah.

479

00:30:27,440 --> 00:30:30,440

Sure enough, by the time the urine reaches the rail

480

00:30:30,440 --> 00:30:33,440

it's broken into separate drops.

481

00:30:33,440 --> 00:30:36,440

It needs to be solid to carry a current.

482

00:30:36,440 --> 00:30:39,440

The guys might have a solution for that.

483

00:30:39,440 --> 00:30:42,440

The only thing we have left is to try a larger stream of urine.

484

00:30:42,440 --> 00:30:48,440

You know, maybe that'll be more likely to create a continuous connection there with the ground.

485

00:30:48,440 --> 00:30:52,440

That's what we started out with and that's where we're going.

486

00:30:52,440 --> 00:30:56,440

This could be the best day in O'Malley's life.

487

00:30:56,440 --> 00:30:58,440

Or the worst.

488

00:31:00,440 --> 00:31:04,440

But it's not safe to power up until the ground dries a little.

489

00:31:05,440 --> 00:31:11,440

While they're waiting, there is another rail yard myth worth testing.

490

00:31:11,440 --> 00:31:16,440

Legend has it you can derail a train just by putting a penny on the tracks.

491

00:31:16,440 --> 00:31:20,440

The guys have actually graciously allowed us the use of their engine to test this.

492

00:31:20,440 --> 00:31:23,440

My guess is they don't think it's going to derail the train.

493

00:31:23,440 --> 00:31:25,440

I would agree.

494

00:31:34,440 --> 00:31:36,440

Wow!

495

00:31:41,440 --> 00:31:43,440

Oh, yeah!

496

00:31:43,440 --> 00:31:45,440

Look at this!

497

00:31:45,440 --> 00:31:47,440

Oh my god, they're really hot.

498

00:31:47,440 --> 00:31:51,440

This myth isn't just busted. It's flattened.

499

00:31:51,440 --> 00:31:55,440

It's actually very rare that you'll get more than one.

500

00:31:55,440 --> 00:31:58,440

I mean, it's just a little bit of a mess.

501

00:31:58,440 --> 00:32:01,440

I mean, it's just a little bit of a mess.

502

00:32:01,440 --> 00:32:04,440

It's actually very rare that you'll get more than one.

503

00:32:04,440 --> 00:32:06,440

Rob, the engineer is not too surprised.

504

00:32:06,440 --> 00:32:09,440

So Rob, do you think a penny can derail a train?

505

00:32:09,440 --> 00:32:13,440

Absolutely not. Unless it's lodged in the engineer's eye.

506

00:32:13,440 --> 00:32:16,440

That's good.

507

00:32:22,440 --> 00:32:25,440

The guys are hoping their luck will change.

508

00:32:25,440 --> 00:32:30,440

This is their last chance to prove the third rail myth is possible.

509

00:32:32,440 --> 00:32:37,440

We've gone with a more, perhaps, equestrian stream of urine.

510

00:32:37,440 --> 00:32:38,440

Ahekkk!

511

00:32:38,440 --> 00:32:39,440

Ahekkk!

512

00:32:39,440 --> 00:32:40,440

Ahekkk!

513

00:32:40,440 --> 00:32:41,440

Ahekkk!

514

00:32:41,440 --> 00:32:43,440

I hope we get a continuous stream.

515

00:32:43,440 --> 00:32:46,440

I'd like to see this thing work. I'd like to watch it fall over.

516

00:32:46,440 --> 00:32:49,440

To be honest, I still don't think it's quite going to work.

517

00:32:49,440 --> 00:32:53,440

The ground is dried enough to safely try again.

518

00:32:53,440 --> 00:32:58,440

The larger anatomically dubious stream will stay solid longer.

519

00:32:58,440 --> 00:33:01,440

And they've decided to give the myth another helping hand.

520

00:33:01,440 --> 00:33:03,440

Moving the rail closer.

521

00:33:03,440 --> 00:33:07,440

I always like to hold on tight to whatever I'm f***ing on.

522

00:33:07,440 --> 00:33:13,440

The bladder is full. The rail is set.

523

00:33:13,440 --> 00:33:17,440

The electrics are good. We're good for the close-up test.

524

00:33:17,440 --> 00:33:18,440

Powering up.

525

00:33:18,440 --> 00:33:19,440

Powering up.

526

00:33:19,440 --> 00:33:25,440

If this setup doesn't complete the circuit, trigger the release, and kill O'Malley,

527

00:33:25,440 --> 00:33:28,440

it will certainly kill the myth.

528

00:33:28,440 --> 00:33:33,440

Alright. And three, two, one.

529

00:33:33,440 --> 00:33:36,440

Hey!

530

00:33:36,440 --> 00:33:39,440

Psst, psst.

531

00:33:39,440 --> 00:33:41,440

It worked!

532

00:33:41,440 --> 00:33:45,440

Yeah, it's six inches away from the rail.

533

00:33:45,440 --> 00:33:50,440

It just goes to show, do not grab the third rail with both hands and f*** on it from three inches away.

534

00:33:50,440 --> 00:33:55,440

Oh man! Wait a second. I've got to take a leak.

535

00:33:55,440 --> 00:33:59,440

Woo!

536

00:33:59,440 --> 00:34:02,440

That'll never make it in the show.

537

00:34:05,440 --> 00:34:13,440

It was tricky, but they've successfully jumped a current from the third rail up a stream of urine with lethal results.

538

00:34:13,440 --> 00:34:21,440

So after all the testing we did, Jamie, do you think it's possible to electrocute yourself by peeing on the third rail?

539

00:34:21,440 --> 00:34:30,440

Maybe given the right circumstances, it's raining, it's the ground's wet, shoes are wet, or maybe he's not wearing shoes. Could happen.

540

00:34:30,440 --> 00:34:38,440

In fact, there are no recorded cases of O'Malley or anyone else dying like this in the New York subway.

541

00:34:38,440 --> 00:34:44,440

Watching it break up in every stream that we've photographed just doesn't look like you could make a solid connection.

542

00:34:44,440 --> 00:34:46,440

I'd say that's a myth busted.

543

00:34:46,440 --> 00:34:49,440

Not that I'd be peeing on the third rail anytime soon.

544

00:34:49,440 --> 00:34:52,440

Hey!

545

00:34:55,440 --> 00:34:58,440

You're watching myth busters.

546

00:34:58,440 --> 00:35:00,440

Isn't that right?

547

00:35:01,440 --> 00:35:15,440

Two million dead fish, a demagnetized credit card, more slime than the ghost busters, and Jamie and Adam have a slippery myth by the gills.

548

00:35:15,440 --> 00:35:17,440

Well that's a sight for sore eyes.

549

00:35:17,440 --> 00:35:18,440

Oh my God!

550

00:35:18,440 --> 00:35:21,440

Imagine the wallet that you can make out of this one.

551

00:35:21,440 --> 00:35:38,440

The myth here is that in 1986 reports started to surface that there were problems with credit cards due to eel skin wallets.

552

00:35:38,440 --> 00:35:50,440

Apparently the rumor was that the eel skin wallets were coming from electric eels and therefore electromagnetic currents or something were causing problems with the credit cards.

553

00:35:50,440 --> 00:35:58,440

Eel skin wallets wiping out credit cards? A fishy myth if ever there was one. There's only one place to start.

554

00:35:58,440 --> 00:36:08,440

John McOsker is Dr. Eel. He just loves them and there are plenty among the two million specimens at San Francisco's Steinhardt Aquarium.

555

00:36:08,440 --> 00:36:17,440

I was called about eel skin wallets and the fact that somebody who owned this had on more than one occasion found a credit card that didn't work.

556

00:36:17,440 --> 00:36:19,440

So she asked me, is it an electric eel?

557

00:36:19,440 --> 00:36:26,440

The eel skin myth slipped out of the deep. It was soon shocking readers coast to coast.

558

00:36:26,440 --> 00:36:30,440

Electric eels really pack a wallop.

559

00:36:30,440 --> 00:36:32,440

This is an electric eel right here.

560

00:36:32,440 --> 00:36:35,440

Yeah, it's got about 4 to 500 volts.

561

00:36:35,440 --> 00:36:37,440

I should put you on your keister.

562

00:36:37,440 --> 00:36:46,440

It turns out that there is an electrical discharge and you and me and every fish when they move a muscle mass.

563

00:36:46,440 --> 00:36:55,440

But they have concentrated this in muscle packs so that it builds and stores a very large discharge.

564

00:36:55,440 --> 00:37:03,440

And it's able to release it all at once and when it does it just stuns everything in the water around it and then it just gobbles it up.

565

00:37:03,440 --> 00:37:11,440

The guys know flowing electricity creates a magnetic field but surely leather from a dead eel can't hold a charge.

566

00:37:11,440 --> 00:37:16,440

Their mission is to put a lid on this myth once and for all.

567

00:37:21,440 --> 00:37:28,440

They'll start by making up a bunch of stunt credit cards using a magnetic rider.

568

00:37:28,440 --> 00:37:34,440

The strip on credit cards is made of magnetic particles, each about 20 millions of an inch long.

569

00:37:34,440 --> 00:37:38,440

They record information in the same way as audio cassette tape.

570

00:37:40,440 --> 00:37:45,440

They all have the same information on them and now they're ready to be abused in various ways.

571

00:37:45,440 --> 00:37:48,440

Let's see if we can take the information off.

572

00:37:48,440 --> 00:37:51,440

Where are we going to start? What are we going to test on this one?

573

00:37:51,440 --> 00:37:54,440

Well we've got to put cards in wallets, see what happens.

574

00:37:54,440 --> 00:37:58,440

We'll leave them there for a while, measure the wallets, see what they do.

575

00:38:00,440 --> 00:38:03,440

It seems our myth is quite widespread.

576

00:38:03,440 --> 00:38:10,440

Eelskin has proved to be a natural leather that is harmless to the magnetic strips on credit cards.

577

00:38:12,440 --> 00:38:14,440

They'll be the judge of that.

578

00:38:14,440 --> 00:38:18,440

First, what happens after just a few seconds' contact?

579

00:38:18,440 --> 00:38:20,440

Want a swipe? See if anything happened?

580

00:38:20,440 --> 00:38:21,440

Yeah.

581

00:38:24,440 --> 00:38:26,440

There it is. All the data.

582

00:38:28,440 --> 00:38:31,440

No surprise there. Maybe it needs some wear and tear.

583

00:38:34,440 --> 00:38:35,440

There you go.

584

00:38:38,440 --> 00:38:44,440

While it didn't do anything to it, let's leave those in there for 24 hours or something and see

what happens to them after that.

585

00:38:44,440 --> 00:38:59,440

Another theory actually is that during the tanning process, a residue could get left on the wallet that gives it a small charge that could demagnetize a card.

586

00:38:59,440 --> 00:39:05,440

Something like that might have iron particles or something in it that they've impregnated the leather with.

587

00:39:05,440 --> 00:39:08,440

Yeah, and if such a thing is possible, we should be able to test for it.

588

00:39:10,440 --> 00:39:12,440

I can't help myself. I need some satisfaction.

589

00:39:15,440 --> 00:39:23,440

It's like a bad television effect, but it's happening right in my microwave.

590

00:39:23,440 --> 00:39:25,440

Oh, that's the best.

591

00:39:26,440 --> 00:39:29,440

The microwave arcs the metal in the disk.

592

00:39:31,440 --> 00:39:36,440

If the tanning process leaves metal in the wallet, it should do the same thing.

593

00:39:36,440 --> 00:39:40,440

Well, normally we'd see some kind of sparking going on, wouldn't we?

594

00:39:40,440 --> 00:39:43,440

Normally we would. You think it's hot?

595

00:39:44,440 --> 00:39:46,440

It might be warming up a little bit.

596

00:39:46,440 --> 00:39:51,440

No sparks, no metal. The guys need to find another explanation.

597

00:39:51,440 --> 00:39:53,440

It's warm.

598

00:39:53,440 --> 00:39:55,440

That's about it.

599

00:39:55,440 --> 00:39:59,440

You know, Adam, there's a common theme to all this. You're putting it in and out of your pocket.

600

00:39:59,440 --> 00:40:04,440

You're creating a static charge, maybe, that the wallet's retaining and then it's messing with the credit cards.

601

00:40:04,440 --> 00:40:05,440

Yeah.

602

00:40:05,440 --> 00:40:08,440

You know, I don't know, but it's a common theme with all of the stores.

603

00:40:09,440 --> 00:40:16,440

So can Adam use eelskin to generate enough static electricity to wipe out a credit card?

604

00:40:18,440 --> 00:40:21,440

The charge is stored in this capacitor.

605

00:40:21,440 --> 00:40:25,440

Well, okay, I am able to generate a very small amount of static this way.

606

00:40:26,440 --> 00:40:29,440

Maybe some nylon underwear will do the trick.

607

00:40:33,440 --> 00:40:35,440

Let's see what we get.

608

00:40:36,440 --> 00:40:38,440

It works just fine.

609

00:40:41,440 --> 00:40:45,440

They just can't seem to get a grip on this eelskin myth.

610

00:40:45,440 --> 00:40:48,440

Maybe that's because there's a twist in the tail.

611

00:40:48,440 --> 00:40:52,440

So eelskin wallets aren't actually made of eelskin at all, right?

612

00:40:52,440 --> 00:40:56,440

Well, not electric eels, not mori eels, or any other kind of eel.

613

00:40:56,440 --> 00:41:03,440

Actually, made from a disgusting fish called a hagfish called the slime eel.

614

00:41:04,440 --> 00:41:07,440

Now this is a slime eel.

615

00:41:09,440 --> 00:41:11,440

You've got to be a little odd to like slime eels.

616

00:41:11,440 --> 00:41:16,440

Somewhere, somehow, a fisherman discovered this skin makes great leather.

617

00:41:17,440 --> 00:41:20,440

You know, I wouldn't look at this and think, wallet. No.

618

00:41:22,440 --> 00:41:27,440

This is Adam and Jamie's lucky day. The aquarium has live hagfish.

619

00:41:28,440 --> 00:41:31,440

They just look like snot in the bottom of the tank.

620

00:41:32,440 --> 00:41:34,440

Look at this. Wow.

621

00:41:35,440 --> 00:41:37,440

Look at this thing. Looks like the mummy.

622

00:41:39,440 --> 00:41:40,440

Isn't that great?

623

00:41:40,440 --> 00:41:44,440

I'd rather put my hands in formalde than I'd been in a tank full of hagfish.

624

00:41:46,440 --> 00:41:52,440

The slime is a defense mechanism in the wild, which seems to work pretty well in captivity too.

625

00:41:52,440 --> 00:41:54,440

Oh, that's disgusting.

626

00:41:55,440 --> 00:41:57,440

That's really spectacular.

627

00:41:57,440 --> 00:41:59,440

There we go.

628

00:41:59,440 --> 00:42:01,440

There we go.

629

00:42:01,440 --> 00:42:03,440

Guys are hired.

630

00:42:03,440 --> 00:42:05,440

I warned you.

631

00:42:05,440 --> 00:42:07,440

Yeah, no, I know.

632

00:42:07,440 --> 00:42:10,440

They are no closer to busting this myth.

633

00:42:10,440 --> 00:42:13,440

The slime eel left them empty-handed.

634

00:42:13,440 --> 00:42:15,440

Or did it?

635

00:42:20,440 --> 00:42:25,440

In the eel skin wallet myth, John McCosker did some myth-busting of his own.

636

00:42:25,440 --> 00:42:28,440

He's convinced the fish have been framed.

637

00:42:28,440 --> 00:42:36,440

It wasn't until we finally obtained a wallet that had been used that we then realized what the problem was.

638

00:42:36,440 --> 00:42:38,440

What turned out to be the problem?

639

00:42:38,440 --> 00:42:47,440

The problem was geography. There was a magnet right over the band of the card where the signature was located.

640

00:42:49,440 --> 00:42:54,440

Could it be true? Could a small magnetic class be erasing bank details?

641

00:42:54,440 --> 00:42:57,440

How hard is it to wipe out a credit card anyway?

642

00:42:57,440 --> 00:43:00,440

Jamie and Adam vow to find out.

643

00:43:00,440 --> 00:43:04,440

We should point out that the way this holds the bills together is magnetic.

644

00:43:04,440 --> 00:43:06,440

Yeah.

645

00:43:08,440 --> 00:43:10,440

Shall we try and read it?

646

00:43:13,440 --> 00:43:14,440

I read it just fine.

647

00:43:14,440 --> 00:43:17,440

I'm actually really surprised how robust these cards are.

648

00:43:17,440 --> 00:43:22,440

So am I. I would have bet money that they would have messed with them.

649

00:43:22,440 --> 00:43:27,440

So why don't we leave this one for 24 hours as well along with the other eel skins?

650

00:43:27,440 --> 00:43:32,440

There's also a theory you can strip cards by rubbing two together.

651

00:43:34,440 --> 00:43:36,440

That one's good.

652

00:43:36,440 --> 00:43:38,440

Yeah, they're both good.

653

00:43:38,440 --> 00:43:41,440

Rubbing them up and down against each other didn't do anything.

654

00:43:44,440 --> 00:43:47,440

The guys are desperate to erase a card.

655

00:43:47,440 --> 00:43:53,440

They've built an electromagnet so they can find out exactly how much magnetism it takes.

656

00:43:53,440 --> 00:43:55,440

Here, hold still.

657

00:43:55,440 --> 00:44:00,440

By varying the electrical current, they can control the strength of the magnetic field.

658

00:44:00,440 --> 00:44:02,440

That's about eight volts.

659

00:44:06,440 --> 00:44:08,440

That's a magnet all right.

660

00:44:08,440 --> 00:44:12,440

Gauss is the measurement for magnetic strength.

661

00:44:12,440 --> 00:44:14,440

That's the core civility, I believe.

662

00:44:14,440 --> 00:44:19,440

And so we have this little nifty device that reads that.

663

00:44:21,440 --> 00:44:24,440

The Earth's magnetic pull is about one gauss.

664

00:44:24,440 --> 00:44:27,440

They'll be testing well beyond that.

665

00:44:27,440 --> 00:44:29,440

So this is 650 gauss.

666

00:44:29,440 --> 00:44:31,440

Yeah.

667

00:44:33,440 --> 00:44:35,440

One, one thousand.

668

00:44:35,440 --> 00:44:38,440

Okay, let's see.

669

00:44:38,440 --> 00:44:40,440

Card number one is good.

670

00:44:40,440 --> 00:44:42,440

It'll go into 700?

671

00:44:42,440 --> 00:44:43,440

Yeah.

672

00:44:43,440 --> 00:44:47,440

They'll step up the magnetic field until they get a failure.

673

00:44:47,440 --> 00:44:48,440

Fine.

674

00:44:48,440 --> 00:44:51,440

800 gauss, man, are you crazy?

675

00:44:51,440 --> 00:44:53,440

Nothing.

676

00:44:53,440 --> 00:44:58,440

Looks like the everyday credit card is tougher than they thought.

677

00:44:58,440 --> 00:45:01,440

Time to step on that gauss.

678

00:45:01,440 --> 00:45:03,440

Okay, 1600 gauss.

679

00:45:03,440 --> 00:45:09,440

Something tells me that nothing's gonna happen.

680

00:45:09,440 --> 00:45:11,440

It's good.

681

00:45:11,440 --> 00:45:16,440

Now, wave this card like half a centimeter above the magnet.

682

00:45:20,440 --> 00:45:22,440

Let's see what that did.

683

00:45:24,440 --> 00:45:25,440

Hey, we got a read error.

684

00:45:25,440 --> 00:45:26,440

Read error.

685

00:45:26,440 --> 00:45:28,440

We got a read error.

686

00:45:28,440 --> 00:45:31,440

Swiping the card has proved the key.

687

00:45:31,440 --> 00:45:37,440

By moving it through the field, the tiny magnetic particles in the strip are dragged out of

alignment.

688

00:45:37,440 --> 00:45:39,440

A thousand gauss.

689

00:45:41,440 --> 00:45:44,440

Number four is totally screwed.

690

00:45:44,440 --> 00:45:46,440

Number four is bad.

691

00:45:46,440 --> 00:45:51,440

I would say that we could call a thousand gauss the point at which the cards regularly start to fail.

692

00:45:51,440 --> 00:45:55,440

There's nowhere near that much magnetism in the water.

693

00:45:55,440 --> 00:45:59,440

So could the person in the myth have come into contact with it some other way?

694

00:45:59,440 --> 00:46:04,440

Calling this cell phone, I didn't get anything above 30 gauss.

695

00:46:04,440 --> 00:46:06,440

No, nothing.

696

00:46:06,440 --> 00:46:10,440

It's going up to around 16 at most.

697

00:46:10,440 --> 00:46:11,440

That's a speaker.

698

00:46:11,440 --> 00:46:13,440

That's about 70 gauss.

699

00:46:13,440 --> 00:46:16,440

Nothing comes close to a thousand gauss.

700

00:46:18,440 --> 00:46:20,440

That's a wallet with a class?

701

00:46:20,440 --> 00:46:25,440

Even after a day's exposure, it's doubtful a wallet could generate that sort of feel.

702

00:46:26,440 --> 00:46:29,440

Fine, all the information's still there.

703

00:46:29,440 --> 00:46:31,440

Try this one.

704

00:46:31,440 --> 00:46:33,440

Go.

705

00:46:33,440 --> 00:46:35,440

Nope, all the information's still there.

706

00:46:35,440 --> 00:46:37,440

No ill effects at all.

707

00:46:37,440 --> 00:46:41,440

Let's try the eel skin money clip that has magnets in it.

708

00:46:44,440 --> 00:46:46,440

Nope, all the information's still there.

709

00:46:46,440 --> 00:46:52,440

All right, Jamie, so yeah, there's no effect on these cards after 24 hours in a genuine eel skin wallet.

710

00:46:52,440 --> 00:46:55,440

This myth is all but busted.

711

00:46:55,440 --> 00:46:59,440

But there's one challenge left.

712

00:46:59,440 --> 00:47:02,440

John, do you have an electric eel we can go visit?

713

00:47:02,440 --> 00:47:03,440

A live one?

714

00:47:03,440 --> 00:47:07,440

And a hungry one and it's storing its charge waiting for you.

715

00:47:07,440 --> 00:47:12,440

We have some live electric eels that have caused some workers' cop injuries.

716

00:47:12,440 --> 00:47:18,440

The guys feeding the fish got shocked, knocked backwards off the rail and banged their head.

717

00:47:19,440 --> 00:47:22,440

But you can see it really hurts the fish.

718

00:47:22,440 --> 00:47:23,440

They kind of wince.

719

00:47:23,440 --> 00:47:25,440

They go zap.

720

00:47:26,440 --> 00:47:31,440

There's enough power swimming around the bottom of that tank to stun a horse.

721

00:47:31,440 --> 00:47:35,440

Let's put this card in the tank with the electric eel who's right inside here.

722

00:47:35,440 --> 00:47:38,440

Got the gauss meter set up all the way at the end.

723

00:47:38,440 --> 00:47:41,440

So if he gives a jolt, you should be able to read it.

724

00:47:48,440 --> 00:47:50,440

Electric eel's looking at me right in the eye.

725

00:47:51,440 --> 00:47:55,440

Are you getting any kind of reading at all?

726

00:47:55,440 --> 00:47:56,440

No.

727

00:47:56,440 --> 00:47:58,440

I'm just getting minuscule variations.

728

00:47:58,440 --> 00:47:59,440

Nothing at all really.

729

00:48:05,440 --> 00:48:06,440

Whoop!

730

00:48:06,440 --> 00:48:08,440

He just flinched.

731

00:48:08,440 --> 00:48:09,440

Oh!

732

00:48:09,440 --> 00:48:11,440

He just bit the card.

733

00:48:11,440 --> 00:48:13,440

You didn't see any sparks fly or anything?

734

00:48:13,440 --> 00:48:18,440

I didn't see any sparks fly and thank goodness I didn't feel anything.

735

00:48:18,440 --> 00:48:20,440

Now he swung by it again.

736

00:48:20,440 --> 00:48:21,440

He's really very confused.

737

00:48:21,440 --> 00:48:22,440

You not getting anything?

738

00:48:22,440 --> 00:48:23,440

Not a thing.

739

00:48:23,440 --> 00:48:25,440

Maybe one gauss.

740

00:48:25,440 --> 00:48:26,440

One gauss?

741

00:48:26,440 --> 00:48:27,440

That's nothing.

742

00:48:27,440 --> 00:48:29,440

You have more gausses than that.

743

00:48:29,440 --> 00:48:31,440

I have more gausses walking into a room than that.

744

00:48:31,440 --> 00:48:33,440

Now he's just resting at the bottom of the tank.

745

00:48:33,440 --> 00:48:35,440

I'd say definitively he's sulking.

746

00:48:35,440 --> 00:48:40,440

Look if people think eel skin wallets can erase a card, stick it in a card in a tank with an electric eel,

747

00:48:40,440 --> 00:48:42,440

this ought to prove this once and for all.

748

00:48:42,440 --> 00:48:43,440

I mean this is the ultimate test.

749

00:48:43,440 --> 00:48:44,440

Yeah.

750

00:48:44,440 --> 00:48:45,440

Okay.

751

00:48:46,440 --> 00:48:48,440

Myth busted.

752

00:48:48,440 --> 00:48:51,440

All the evidence is still in the card, completely not demagnetized at all.

753

00:48:51,440 --> 00:48:52,440

Myth busted.

754

00:48:52,440 --> 00:48:54,440

I'd say yeah, myth busted.

755

00:49:15,440 --> 00:49:17,440

Myth busted.