1

00:00:00,000 --> 00:00:02,000

Don't try anything you've seen on the show at home.

2

00:00:02,000 --> 00:00:04,000

We are what you call experts.

3

00:00:30,000 --> 00:00:35,000

Hail hijinks as Kari, Tori and Grant break the ice.

4

00:00:38,000 --> 00:00:44,000

Finding out if the mother of all hail storms can ever sink a ship.

5

00:00:50,000 --> 00:00:52,000

Who are the Mythbusters?

6

00:00:53,000 --> 00:00:54,000

Adam Savage

7

00:00:56,000 --> 00:00:57,000

and Jamie Heineman

8

00:00:57,000 --> 00:00:59,000

I'll be darned.

9

00:00:59,000 --> 00:01:05,000

Between them more than 30 years of special effects experience, together with Kari Byron

10

00:01:05,000 --> 00:01:07,000

Grant is messed up!

11

00:01:07,000 --> 00:01:08,000

Grant Imahara

12

00:01:08,000 --> 00:01:09,000

Somebody ordering explosion

13

00:01:09,000 --> 00:01:10,000

and Tori Bellachy

14

00:01:10,000 --> 00:01:12,000

Let's chop this car up!

15

00:01:13,000 --> 00:01:18,000

They don't just tell the Myths, they put them to the test.

16

00:01:28,000 --> 00:01:32,000

Jamie, you did a fair amount of mountain climbing in your youth, didn't you?

17

00:01:32,000 --> 00:01:33,000

I did.

18

00:01:33,000 --> 00:01:38,000

Alright, this story comes from the movie Cliffhanger about a mountain climber played by Sylvester Stallone.

19

00:01:38,000 --> 00:01:45,000

At the end of the movie, he is running across a suspension cable bridge on which the bad guys have put a bomb.

20

00:01:45,000 --> 00:01:53,000

They set off the bomb blowing up one of the moorings of the bridge and after the explosion, Sly, who's already running, takes two further steps and a final leap to safety.

21

00:01:53,000 --> 00:01:55,000

While the bridge is falling.

22

00:01:55,000 --> 00:01:56,000

That sounds dubious.

23

00:01:56,000 --> 00:01:59,000

I think the same thing and I think that's why we should tackle it.

24

00:01:59,000 --> 00:02:01,000

It's a Cliffhanger climax.

25

00:02:01,000 --> 00:02:07,000

When a blast destroys one side of his bridge, our high altitude hero hurls himself to safety.

26

00:02:07,000 --> 00:02:13,000

But can you really make a running jump on a rope bridge seconds after one side has been severed?

27

00:02:14,000 --> 00:02:21,000

Obviously, I think we have to finish this story by doing it in full scale, you and me on a bridge we built that we destroy repeatedly.

28

00:02:21,000 --> 00:02:23,000

Yeah, but you know what?

29

00:02:23,000 --> 00:02:25,000

I think we should do some bench tests first.

30

00:02:25,000 --> 00:02:26,000

I agree.

31

00:02:26,000 --> 00:02:34,000

Perhaps just after the object started falling there's some tiny period of time in which you can get a jump and maybe we can tease that out in scale.

32

00:02:34,000 --> 00:02:35,000

Sounds like a plan.

33

00:02:36,000 --> 00:02:40,000

So first up, they're scaling this mountain myth in small scale.

34

00:02:40,000 --> 00:02:42,000

Well, they'll need a baby bridge.

35

00:02:42,000 --> 00:02:44,000

That's a flexible bridge.

36

00:02:44,000 --> 00:02:46,000

A boom to bust it.

37

00:02:47,000 --> 00:02:48,000

That'll do it.

38

00:02:48,000 --> 00:02:51,000

And a gas-powered pint-sized piston.

39

00:02:51,000 --> 00:02:52,000

Hey!

40

00:02:53,000 --> 00:02:55,000

Now, to stick it all together.

41

00:02:55,000 --> 00:03:01,000

So we are trying to determine if after you've destroyed one side of a suspension bridge, could you still jump off that sucker?

42

00:03:01,000 --> 00:03:05,000

And this is the scale experiment we've built to tease this out.

43

00:03:05,000 --> 00:03:14,000

We've built a real suspension bridge, mounted hard on one side with an electrically activated solenoid on the other that allows us to precisely destroy the moorings on this side of the bridge.

44

00:03:14,000 --> 00:03:20,000

We also have a jumper built off of a pneumatic cylinder that we can also use to make a jump.

45

00:03:20,000 --> 00:03:24,000

And that's the pneumatic cylinder that we can also control precisely.

46

00:03:24,000 --> 00:03:33,000

That control comes from these two timers, which will allow us to control the destruction of the bridge and the jumping of the jumper to within one millisecond.

47

00:03:33,000 --> 00:03:38,000

If there is anything at all to this story, this rig ought to tease it out.

48

00:03:38,000 --> 00:03:41,000

Yep, it's a precision bridge drop mini-rig.

49

00:03:41,000 --> 00:03:46,000

But first up, they're going to do a control to measure the height of the jump on an unbroken bridge.

50

00:03:46,000 --> 00:03:48,000

Three, two, one.

51

00:03:51,000 --> 00:03:54,000

And with that leap reaching 22 inches, that's really nice.

52

00:03:54,000 --> 00:03:55,000

Yeah.

53

00:03:55,000 --> 00:03:57,000

Jamie jumps in with the plan.

54

00:03:57,000 --> 00:04:04,000

To figure out how long you've got to jump off the falling bridge, we're going to start by dropping the bridge 50 milliseconds before our mini-atom jumps.

55

00:04:04,000 --> 00:04:14,000

Now if he's successful at leaping away, we'll add another 50 milliseconds and try it again and keep doing that until he's just falling and not able to leap away.

56

00:04:14,000 --> 00:04:18,000

That way we'll figure out what our bugger zone is for jumping off the falling bridge.

57

00:04:18,000 --> 00:04:25,000

So it's time for test one, where Adam's mini-me will jump exactly 50 milliseconds after the bridge has been busted.

58

00:04:25,000 --> 00:04:28,000

50 millisecond delay in three, two, one.

59

00:04:30,000 --> 00:04:34,000

Adam sure shot up, but how did this leap compare with the control?

60

00:04:34,000 --> 00:04:37,000

You like the little pirouette?

61

00:04:37,000 --> 00:04:38,000

Sure.

62

00:04:38,000 --> 00:04:41,000

To find out, the guys check the high speed.

63

00:04:41,000 --> 00:04:45,000

Amazing, he really did jump off the falling bridge.

64

00:04:45,000 --> 00:04:47,000

Where the news is good and bad.

65

00:04:47,000 --> 00:04:49,000

Clearly the highest he reaches.

66

00:04:49,000 --> 00:04:56,000

While their jumper did jump, he peaked at a puny 10 inches, less than half the height of the control.

67

00:04:56,000 --> 00:04:57,000

I think we're ready.

68

00:04:57,000 --> 00:05:00,000

So what will happen with double the delay?

69

00:05:00,000 --> 00:05:01,000

You ready?

70

00:05:01,000 --> 00:05:02,000

I'm ready.

71

00:05:02,000 --> 00:05:06,000

100 millisecond delay bridge jump in three, two, one.

72

00:05:08,000 --> 00:05:11,000

It's starting to get bad at 100 milliseconds.

73

00:05:11,000 --> 00:05:13,000

Yeah, but he's still doing it.

74

00:05:13,000 --> 00:05:20,000

Jumping 100 milliseconds after the bridge gets broken, Adam did make the leap, but the height is slashed to just four and a half inches.

75

00:05:20,000 --> 00:05:22,000

And when they delay the drop again.

76

00:05:22,000 --> 00:05:23,000

There we go.

77

00:05:23,000 --> 00:05:26,000

150 millisecond jump, three, two, one.

78

00:05:30,000 --> 00:05:32,000

It really didn't look like anything.

79

00:05:32,000 --> 00:05:36,000

A fraction of a second later, there's nothing left for mini-me to jump off.

80

00:05:36,000 --> 00:05:40,000

Yet in cliffhanger, the hero seemed to have time for a running jump.

81

00:05:40,000 --> 00:05:45,000

Yeah, but you know what? In the clip, he's not jumping straight up. He's jumping forward.

82

00:05:45,000 --> 00:05:49,000

Right. Okay, so let's run these three tests again with him angled.

83

00:05:49,000 --> 00:05:55,000

So to match the cinematic scenario, they change the angle of the dangle and set a new control.

84

00:05:58,000 --> 00:06:00,000

Wow, he jumped really far.

85

00:06:00,000 --> 00:06:01,000

Yep.

86

00:06:01,000 --> 00:06:03,000

And then the delay tests can begin.

87

00:06:03,000 --> 00:06:07,000

All right, here we go. Angled bridge jump, 50 millisecond delay, three, two, one.

88

00:06:08,000 --> 00:06:12,000

He's jumping a lot farther at an angle. There might be something here.

89

00:06:12,000 --> 00:06:15,000

100 milliseconds, one tenth of a second. Here we go.

90

00:06:15,000 --> 00:06:20,000

But as the bridge plunges further into freefall, they spot the same pattern as before.

91

00:06:20,000 --> 00:06:22,000

150 milliseconds.

92

00:06:22,000 --> 00:06:32,000

As they up the delay, the leap length is slashed until, by 150 milliseconds, the miniature myth buster is barely making it to the end of the bridge.

93

00:06:32,000 --> 00:06:38,000

Well, the results from our small scale tests are interesting, but not necessarily making it look very good for this story.

94

00:06:38,000 --> 00:06:47,000

And while we found that a life-saving jump off a collapsing bridge is, in fact, possible, it's only possible within a window of about 150 milliseconds.

95

00:06:47,000 --> 00:06:53,000

Now, will that time change when we go to a full-scale 80 foot long bridge? That's what we got to find out.

96

00:06:56,000 --> 00:07:00,000

Now, backing down the hatches, because us storms are brewing.

97

00:07:01,000 --> 00:07:04,000

Alright, I love a bit of hijinks. What's the story, Torey?

98

00:07:04,000 --> 00:07:12,000

Alright, so this is an old fisherman's myth. Now, the story goes that a hail storm can be so intense that it can actually sink a boat.

99

00:07:12,000 --> 00:07:14,000

What kind of a hail storm are we talking about here?

100

00:07:14,000 --> 00:07:17,000

We're looking at hailstones around the size of a baseball.

101

00:07:17,000 --> 00:07:26,000

Okay, so does the hail penetrate the boat and make it sink because there's holes in it? Or does it fill up with hail and it sinks because it loses pointsy?

102

00:07:26,000 --> 00:07:29,000

Don't know, but that's what we're going to find out.

103

00:07:30,000 --> 00:07:33,000

There's no doubt that hail can be hostile.

104

00:07:33,000 --> 00:07:34,000

Get his ass down!

105

00:07:34,000 --> 00:07:42,000

But could a boat really go belly up by being hammered by hail? Or is this a classic fisherman's tale?

106

00:07:42,000 --> 00:07:46,000

Alright, so obviously the details of this myth are a bit cloudy.

107

00:07:46,000 --> 00:07:52,000

Yeah, I mean, we have no idea whether it was a hail fastball that punctured the boat or whether it was a sheer volume of hail that caused it to go under.

108

00:07:52,000 --> 00:07:56,000

Well, ultimately, we're going to have to test both. So why don't we start with the puncture theory?

109

00:07:56,000 --> 00:07:59,000

Alright, well we can't wait for a hail storm. Why don't we create our own?

110

00:07:59,000 --> 00:08:03,000

We'll get some hailstones traveling at storm wind speeds and we'll fire it at different types of boats.

111

00:08:03,000 --> 00:08:10,000

Oh, that's a great idea. I can build a cannon that'll fire hail that fast if you guys can find out whether baseball-sized hail even exists.

112

00:08:10,000 --> 00:08:11,000

Sounds good.

113

00:08:11,000 --> 00:08:15,000

So, first up, the guys are going to take aim at the sunk-bike puncture theory.

114

00:08:15,000 --> 00:08:18,000

And step one is to get some ice advice.

115

00:08:18,000 --> 00:08:21,000

Courtesy of Professor John Monteverdi.

116

00:08:21,000 --> 00:08:23,000

Alright, Professor, so we're talking about hail.

117

00:08:23,000 --> 00:08:24,000

What exactly is it?

118

00:08:24,000 --> 00:08:28,000

It's a glob of ice that grows in the upper parts of a thunderstorm cloud.

119

00:08:28,000 --> 00:08:33,000

When it grows too large, it will fall to the ground, usually in a large mass.

120

00:08:33,000 --> 00:08:36,000

Alright, so the myth talks about baseball-sized hail sinking a boat.

121

00:08:36,000 --> 00:08:39,000

Now, can hail grow to be that big?

122

00:08:39,000 --> 00:08:43,000

Oh, indeed. This video shows baseball hail.

123

00:08:43,000 --> 00:08:47,000

And those things are flying. Look at that. It's actually knocking down branches.

124

00:08:47,000 --> 00:08:50,000

Don't you think that hail ball that size could probably sink a ship?

125

00:08:50,000 --> 00:08:54,000

I think it's conceivable it could punch a hole in the ship.

126

00:08:54,000 --> 00:08:58,000

It depends on the material and the speed that hail gets accelerated at.

127

00:08:58,000 --> 00:09:03,000

So, according to the prof, this stormy story might be true.

128

00:09:03,000 --> 00:09:07,000

Meaning it's on to step two, nailing the hail.

129

00:09:07,000 --> 00:09:12,000

We learned from our meteorologists that hail at two, two and a half inches is not uncommon.

130

00:09:12,000 --> 00:09:15,000

So I've come to the San Francisco Ice Company to do a little carving.

131

00:09:15,000 --> 00:09:17,000

It always makes me feel dangerous.

132

00:09:18,000 --> 00:09:21,000

And she's dicing just the right ice.

133

00:09:21,000 --> 00:09:26,000

This block of ice I'm working with is completely clear because as it's frozen, air is circulating through it.

134

00:09:26,000 --> 00:09:29,000

Now that's going to make it the hardest that it can be.

135

00:09:29,000 --> 00:09:31,000

Give us the best possible chance.

136

00:09:31,000 --> 00:09:35,000

Now I've got my ice blocks. Time to press them into balls.

137

00:09:35,000 --> 00:09:42,000

The weight should slowly press this into the mold until it's a beautiful, perfect sphere.

138

00:09:42,000 --> 00:09:49,000

Yep, with her melting mold moving fast, it's not long before Carrie's box of balls are ready to get fired up.

139

00:09:49,000 --> 00:09:51,000

Hail balls!

140

00:09:51,000 --> 00:09:56,000

And while Carrie's been prepping the ammo, Tori's tracked down the target.

141

00:09:56,000 --> 00:10:00,000

A Vasque Scaliwags! We got ourselves a boat!

142

00:10:00,000 --> 00:10:02,000

Make that targets.

143

00:10:02,000 --> 00:10:05,000

To give this mid-the-fighting chance, we've opted for a single-hold boat.

144

00:10:05,000 --> 00:10:09,000

And by using all the most common materials, we've covered all our bases.

145

00:10:09,000 --> 00:10:16,000

And those common materials are wood, fiberglass and aluminum, all three of which may be tough nuts to crack.

146

00:10:16,000 --> 00:10:21,000

And that's where the cannon comes in. We've got this valve right here. It's going to go on the tank.

147

00:10:21,000 --> 00:10:24,000

We're going to run compressed air and have a super long barrel.

148

00:10:24,000 --> 00:10:28,000

Hopefully with all that, we'll get our hail to hail speed.

149

00:10:28,000 --> 00:10:31,000

And when Grant says super long, he's not exaggerating.

150

00:10:31,000 --> 00:10:33,000

We need the whole shop for this.

151

00:10:33,000 --> 00:10:38,000

Because the longer the barrel, the greater the chance their ice ball will fire intact.

152

00:10:38,000 --> 00:10:41,000

Oh my God, that is ridiculous!

153

00:10:41,000 --> 00:10:42,000

How long is this?

154

00:10:42,000 --> 00:10:43,000

40 feet.

155

00:10:43,000 --> 00:10:47,000

But to put that idea to the test, it's time for a test fire.

156

00:10:47,000 --> 00:10:50,000

We're going to be firing hail at different speeds at our boats.

157

00:10:50,000 --> 00:10:55,000

And we're going to start at 80 miles an hour, which is the terminal velocity for hailstones this size.

158

00:10:55,000 --> 00:11:03,000

And wrapped in a cloth sabote to ensure a strong seal, the question is, will the hail hang together for the steel plate test?

159

00:11:03,000 --> 00:11:06,000

Okay, ready for 80 miles per hour.

160

00:11:06,000 --> 00:11:10,000

God, I hope this doesn't pulverize the ball before it actually makes it out of the cannon.

161

00:11:10,000 --> 00:11:14,000

I know, this is either going to be a hail cannon or a snow cone maker.

162

00:11:14,000 --> 00:11:15,000

Okay, guys, ready?

163

00:11:15,000 --> 00:11:16,000

Yeah.

164

00:11:16,000 --> 00:11:20,000

Here we go. Calibration test in three, two, one.

165

00:11:21,000 --> 00:11:23,000

Oh no, that looks solid.

166

00:11:23,000 --> 00:11:24,000

It's mission accomplished.

167

00:11:24,000 --> 00:11:29,000

Their slice of ice survived the 80 mile an hour fastball without breaking out.

168

00:11:29,000 --> 00:11:30,000

But a bump.

169

00:11:30,000 --> 00:11:31,000

It's like snow glitter.

170

00:11:31,000 --> 00:11:36,000

Which means it's time to bust out the steel plate and take aim at the boats.

171

00:11:36,000 --> 00:11:37,000

What?

172

00:11:39,000 --> 00:11:40,000

Later.

173

00:11:40,000 --> 00:11:41,000

Oh gosh.

174

00:11:41,000 --> 00:11:45,000

Will the Mythbusters match Stallone's cliffhanger leap?

175

00:11:45,000 --> 00:11:46,000

One, two, three.

176

00:11:52,000 --> 00:11:59,000

In the movie Cliffhanger, our sly hero leaps up as a blown up bridge falls down.

177

00:11:59,000 --> 00:12:03,000

But back in the real world, the guys ain't jumping for joy.

178

00:12:03,000 --> 00:12:07,000

Because their mini Mythbusters bridge jump has fallen short.

179

00:12:07,000 --> 00:12:09,000

It is not looking very good for the story at this point.

180

00:12:09,000 --> 00:12:13,000

I mean, we are finding a little window where you can get some push-off, but it's a tiny window.

181

00:12:13,000 --> 00:12:17,000

And honestly, I don't think it's enough time for a human to react to the sound of an explosion.

182

00:12:17,000 --> 00:12:22,000

I think this is where we need to go full scale because as we move up in size, the mass increases,

183

00:12:22,000 --> 00:12:24,000

there's wind resistance to consider.

184

00:12:24,000 --> 00:12:26,000

A lot of the physics change.

185

00:12:26,000 --> 00:12:31,000

Alright, so shall we go on to building the full-sized bridge and launch ourselves into the abyss?

186

00:12:31,000 --> 00:12:32,000

Yep.

187

00:12:32,000 --> 00:12:33,000

Excellent.

188

00:12:33,000 --> 00:12:36,000

So it's time to launch from a full-scale rope bridge.

189

00:12:36,000 --> 00:12:38,000

But first, the guys are going to have to build it.

190

00:12:38,000 --> 00:12:39,000

So this is our bridge.

191

00:12:39,000 --> 00:12:40,000

This is it.

192

00:12:40,000 --> 00:12:41,000

They just delivered it.

193

00:12:41,000 --> 00:12:43,000

1,800 pounds of wood and cable.

194

00:12:43,000 --> 00:12:46,000

Well, let's start putting it together.

195

00:12:46,000 --> 00:12:47,000

Alright.

196

00:12:47,000 --> 00:12:48,000

The guys snap to it.

197

00:12:48,000 --> 00:12:53,000

They've got a design in mind for a classic cliffhanger rope bridge with wood planks underfoot

198

00:12:53,000 --> 00:12:56,000

and steel cables bridging the span.

199

00:12:56,000 --> 00:13:00,000

And making it all happen is Jamie's new favorite toy.

200

00:13:00,000 --> 00:13:03,000

This thing's awesome.

201

00:13:03,000 --> 00:13:05,000

I need to attach this cable to all these planks.

202

00:13:05,000 --> 00:13:10,000

Now, I don't know how this is normally done, but I've tracked down this machine here,

203

00:13:10,000 --> 00:13:14,000

which is a thing for nailing fences together.

204

00:13:14,000 --> 00:13:18,000

And it puts down really nice little staples.

205

00:13:18,000 --> 00:13:20,000

So that's what I'm going to use.

206

00:13:20,000 --> 00:13:25,000

It's going to make this happen really fast.

207

00:13:25,000 --> 00:13:28,000

And an hour later, you have a bridge.

208

00:13:28,000 --> 00:13:34,000

It's 80 foot long, heavy going, freaking hard to push that thing, and ready to roll.

209

00:13:34,000 --> 00:13:39,000

You know, I think we need to start marketing these and selling them.

210

00:13:39,000 --> 00:13:44,000

After carefully studying the footage from the film, we believe we've made our rope bridge pretty

darn accurate.

211

00:13:44,000 --> 00:13:50,000

It's comprised of two wire ropes, about 130 pine boards at weighs about 1,600 pounds.

212

00:13:50,000 --> 00:13:54,000

All that's left for us to do is to attach some railings to this, take it out to location,

213

00:13:54,000 --> 00:13:56,000

and we start running from explosions.

214

00:13:56,000 --> 00:13:57,000

Did you hear me?

215

00:13:57,000 --> 00:13:59,000

I said running from explosions.

216

00:13:59,000 --> 00:14:04,000

And for running from an exploding suspension bridge, they've got the perfect location.

217

00:14:04,000 --> 00:14:09,000

Today, we are at one of our all-time favorite locations, the Mer Island Shipyard Dry Dog.

218

00:14:09,000 --> 00:14:12,000

They used to service nuclear submarines at the bottom of this thing.

219

00:14:12,000 --> 00:14:17,000

Today, the mythbusters will be stretched to breaking point, because across this dry dog,

220

00:14:17,000 --> 00:14:22,000

they'll rig their bridge too far before they commence their cliffhanger collaborscaper.

221

00:14:22,000 --> 00:14:24,000

Our plan here is really pretty simple.

222

00:14:24,000 --> 00:14:26,000

This is the side of the bridge that doesn't get broken.

223

00:14:26,000 --> 00:14:28,000

It's the permanently attached side.

224

00:14:28,000 --> 00:14:32,000

So we're going to weld a steel structure to hold the bridge on this side,

225

00:14:32,000 --> 00:14:35,000

and then we're going to lower all of this down to the bottom of the dry dog,

226

00:14:35,000 --> 00:14:37,000

pull it up, and attach it to its permanent mooring.

227

00:14:37,000 --> 00:14:42,000

Given that the bridge weighs about 1,600 pounds, you need a solid anchoring point.

228

00:14:42,000 --> 00:14:48,000

So what we've done is drilled holes into the concrete around here, inserted these anchor bolts,

229

00:14:48,000 --> 00:14:54,000

and then we've got this sturdy steel frame that we've welded together that'll get bolted to the concrete.

230

00:14:54,000 --> 00:14:57,000

And hopefully it'll hold.

231

00:14:57,000 --> 00:15:01,000

Indeed, with Adam and Jamie trusting their lives to this bridge,

232

00:15:01,000 --> 00:15:04,000

having it hold firm is vital.

233

00:15:04,000 --> 00:15:06,000

And thanks to a giant crane...

234

00:15:06,000 --> 00:15:08,000

Okay, I need all hands over here.

235

00:15:08,000 --> 00:15:11,000

Let's get on this side and flip.

236

00:15:11,000 --> 00:15:13,000

...and plenty of muscle.

237

00:15:13,000 --> 00:15:16,000

Beauty! Oh, it's like a DNA!

238

00:15:16,000 --> 00:15:21,000

With the forklift holding and the truck pulling, the bridge starts to take shape.

239

00:15:21,000 --> 00:15:23,000

Will you look at that.

240

00:15:23,000 --> 00:15:26,000

Just not quite the shape they had in mind.

241

00:15:26,000 --> 00:15:27,000

It's quite a droop.

242

00:15:27,000 --> 00:15:29,000

Oh, it is going to be a hell of a lot of droop.

243

00:15:29,000 --> 00:15:30,000

Yeah.

244

00:15:30,000 --> 00:15:34,000

After a bit of towing and froing, the guys soon zero in on the butter zone.

245

00:15:34,000 --> 00:15:37,000

Back up about one yard.

246

00:15:37,000 --> 00:15:39,000

That looks like the perfect amount of droop.

247

00:15:39,000 --> 00:15:43,000

And with that, the guys achieve suspension perfection.

248

00:15:43,000 --> 00:15:48,000

It's a real bridge. And all I can think is, I don't want to walk out on that.

249

00:15:48,000 --> 00:15:52,000

And if I don't want to walk on it, Jamie really doesn't want to walk on it.

250

00:15:52,000 --> 00:15:54,000

Oh, gosh.

251

00:15:55,000 --> 00:15:59,000

Get inside now!

252

00:15:59,000 --> 00:16:02,000

Hail can wreak havoc.

253

00:16:02,000 --> 00:16:07,000

But could a hefty hail stone really punch through a boat and sink it?

254

00:16:07,000 --> 00:16:13,000

Carrie, Grant and Tori have their 40-foot cannon calibrated and their ice ball is ready to fire.

255

00:16:13,000 --> 00:16:15,000

It's time to go hail versus all.

256

00:16:15,000 --> 00:16:18,000

Alright, that looks good. Let's start firing the hay walls.

257

00:16:18,000 --> 00:16:21,000

And the aluminum boat is first in the firing line.

258

00:16:21,000 --> 00:16:25,000

The boat is perpendicular to the ground and the cannon is parallel to the ground.

259

00:16:25,000 --> 00:16:29,000

Now in this configuration, it's like the boat is getting rained down in a hail storm.

260

00:16:29,000 --> 00:16:33,000

Now we're going to take a shot and see how much damage it does.

261

00:16:33,000 --> 00:16:38,000

And with the hail all wrapped up for the tightest fit, its first launch is at its terminal velocity.

262

00:16:38,000 --> 00:16:40,000

Ready for 80 miles per hour.

263

00:16:40,000 --> 00:16:43,000

But will that be enough to hole that hole with hail?

264

00:16:43,000 --> 00:16:46,000

Three, two, one.

265

00:16:48,000 --> 00:16:50,000

Well, in a word, no.

266

00:16:51,000 --> 00:16:55,000

Hail versus aluminum boat at 80 miles an hour? No hole.

267

00:16:55,000 --> 00:16:56,000

No.

268

00:16:56,000 --> 00:16:57,000

Ain't that the truth.

269

00:16:57,000 --> 00:17:01,000

Their first fastball barely made a dent, let alone a hole.

270

00:17:01,000 --> 00:17:04,000

But their aluminum boat is just the tip of the iceberg.

271

00:17:04,000 --> 00:17:05,000

What's this boat named?

272

00:17:05,000 --> 00:17:06,000

Fiberglassy.

273

00:17:06,000 --> 00:17:08,000

Fiberglassy?

274

00:17:08,000 --> 00:17:11,000

Now fiberglass isn't as tough as aluminum.

275

00:17:11,000 --> 00:17:14,000

Good to go. Three, two, one.

276

00:17:14,000 --> 00:17:17,000

But it's still too tough for this stuff.

277

00:17:17,000 --> 00:17:19,000

No hole, didn't even budge it.

278

00:17:19,000 --> 00:17:20,000

Next!

279

00:17:20,000 --> 00:17:23,000

So what about a boat made from wood?

280

00:17:23,000 --> 00:17:24,000

Steady as she goes.

281

00:17:24,000 --> 00:17:27,000

And an old boat at that.

282

00:17:27,000 --> 00:17:30,000

Let's take a shot and see if it puts a hole in it.

283

00:17:30,000 --> 00:17:33,000

Here we go. Three, two, one.

284

00:17:34,000 --> 00:17:36,000

But the hail doesn't hole.

285

00:17:36,000 --> 00:17:38,000

And that's three boats without a breach.

286

00:17:38,000 --> 00:17:42,000

At terminal velocity, their baseball hail has struck out.

287

00:17:42,000 --> 00:17:46,000

Now we should, but what if the ice balls weren't just falling at terminal velocity?

288

00:17:46,000 --> 00:17:51,000

What if they were caught up in a hurricane and they were being blown down to Earth at 150 miles an hour?

289

00:17:51,000 --> 00:17:53,000

So it's time to up the ante.

290

00:17:53,000 --> 00:17:57,000

Could the force of a force ten give the ice the impact it needs?

291

00:17:57,000 --> 00:18:01,000

150 miles an hour, this is one serious hail storm.

292

00:18:01,000 --> 00:18:02,000

A aluminum boat.

293

00:18:02,000 --> 00:18:03,000

Go.

294

00:18:03,000 --> 00:18:05,000

Three, two, one.

295

00:18:06,000 --> 00:18:08,000

Well, not for the aluminum.

296

00:18:08,000 --> 00:18:09,000

It can't really hit harder.

297

00:18:09,000 --> 00:18:10,000

You had to hit.

298

00:18:11,000 --> 00:18:13,000

Nor for the fiberglass.

299

00:18:13,000 --> 00:18:14,000

This ain't gonna work.

300

00:18:14,000 --> 00:18:18,000

So to keep this myth afloat, their wooden boat really needs to splinter.

301

00:18:21,000 --> 00:18:24,000

It looked like it did some damage, but did not punch a hole through it.

302

00:18:24,000 --> 00:18:27,000

The guys decide to take things to the extreme.

303

00:18:27,000 --> 00:18:30,000

So now we're ramping up to over 300 miles per hour,

304

00:18:30,000 --> 00:18:33,000

which is the highest ever recorded wind speed in a tornado.

305

00:18:33,000 --> 00:18:36,000

Now I know that there's not typically hail in tornadoes,

306

00:18:36,000 --> 00:18:39,000

but what this myth needs right now is more speed.

307

00:18:39,000 --> 00:18:44,000

Will 300 miles per hour send their ballistic ice ball through aluminum?

308

00:18:44,000 --> 00:18:46,000

Three, two, one.

309

00:18:48,000 --> 00:18:50,000

It's a good hit, but no hole.

310

00:18:50,000 --> 00:18:51,000

How about fiberglass?

311

00:18:51,000 --> 00:18:53,000

300 miles an hour.

312

00:18:53,000 --> 00:18:55,000

Fiberglass boat.

313

00:18:57,000 --> 00:18:59,000

Hey, it's like it's snowing in here.

314

00:19:00,000 --> 00:19:06,000

So at 300 miles an hour, all the hail ball did was knock some of the paint off the fiberglass boat.

315

00:19:06,000 --> 00:19:08,000

There is still no hole.

316

00:19:09,000 --> 00:19:13,000

So with two boats down and no holes to show, even at tornado speed,

317

00:19:13,000 --> 00:19:17,000

this myth's chances all ride in their old wooden boat.

318

00:19:17,000 --> 00:19:20,000

I know 300's ridiculous, but I got a good feeling about this.

319

00:19:20,000 --> 00:19:21,000

It could happen.

320

00:19:21,000 --> 00:19:23,000

In three, two, one.

321

00:19:26,000 --> 00:19:27,000

I can't even see it.

322

00:19:27,000 --> 00:19:30,000

We punched a hole in the boat.

323

00:19:30,000 --> 00:19:32,000

It's like perfectly clean.

324

00:19:32,000 --> 00:19:38,000

Finally, at a worst case scenario wind speed, their boat failed to weather the weather.

325

00:19:40,000 --> 00:19:41,000

That's just silly.

326

00:19:41,000 --> 00:19:43,000

Or did they?

327

00:19:43,000 --> 00:19:44,000

Oh, wait a minute.

328

00:19:44,000 --> 00:19:46,000

I think we got a problem.

329

00:19:46,000 --> 00:19:48,000

I think this boat is rotten.

330

00:19:48,000 --> 00:19:49,000

It's rotten luck.

331

00:19:49,000 --> 00:19:52,000

They scored a direct hit on weakened wood.

332

00:19:52,000 --> 00:19:54,000

We need to try this again.

333

00:19:54,000 --> 00:19:57,000

So they zero in on a zone that's rot-free.

334

00:19:57,000 --> 00:19:59,000

In three, two, one.

335

00:20:01,000 --> 00:20:02,000

Oh my god.

336

00:20:02,000 --> 00:20:03,000

Did it go through?

337

00:20:03,000 --> 00:20:04,000

I mean, it looked like some serious damage.

338

00:20:04,000 --> 00:20:07,000

It did some damage, but I don't think it punched through.

339

00:20:07,000 --> 00:20:09,000

Damage, but it's not a hole.

340

00:20:09,000 --> 00:20:11,000

Yeah, that is definitely not a hole.

341

00:20:11,000 --> 00:20:15,000

And you're looking at a hail ball that's traveling 300 miles an hour.

342

00:20:15,000 --> 00:20:18,000

As far as penetration goes, the myth is busted.

343

00:20:18,000 --> 00:20:24,000

But that's only half the story, because the boat may have been sunk by the sheer quantity of hail stones.

344

00:20:24,000 --> 00:20:26,000

Oh my god, it's almost filled.

345

00:20:26,000 --> 00:20:29,000

But could MassAlone send a boat to the bottom?

346

00:20:29,000 --> 00:20:45,000

In a cliffhanger myth that's high on drama and long on suspense, Adam and Janie have strung a rope bridge to see if you can hurl yourself to safety when one side's in free fall.

347

00:20:45,000 --> 00:20:47,000

That's a bridge, man.

348

00:20:47,000 --> 00:20:49,000

I can't wait to walk on it.

349

00:20:49,000 --> 00:20:58,000

I'm about to take an inaugural walk out on the rope bridge, and I honestly don't have any idea how this is going to go, but there's only one way to find out.

350

00:20:58,000 --> 00:21:00,000

Here we go.

351

00:21:00,000 --> 00:21:08,000

It's the moment of truth, as Adam takes one small step for man and one giant leap for myth busters.

352

00:21:08,000 --> 00:21:09,000

Woo!

353

00:21:09,000 --> 00:21:14,000

My calves are tingling. I've never had my calves tingle before.

354

00:21:14,000 --> 00:21:18,000

And while the bridge is holding firm, it's not yet all systems go.

355

00:21:18,000 --> 00:21:23,000

Standing on our rope bridge is giving me some real pause about the experiments we had planned.

356

00:21:23,000 --> 00:21:25,000

It's making me feel a little bit spooked.

357

00:21:25,000 --> 00:21:30,000

There's a lot of things that can go wrong with something this big when you're purposely making it fail.

358

00:21:30,000 --> 00:21:36,000

So before we continue, we're going to be discussing and buttoning down every last little bit of our safety protocol.

359

00:21:36,000 --> 00:21:44,000

And that button and down involves testing whether their bridge collapse system can safely drop first time every time.

360

00:21:44,000 --> 00:21:46,000

It's fully padded. Shall we do it?

361

00:21:46,000 --> 00:21:47,000

Yeah.

362

00:21:47,000 --> 00:21:50,000

No mean feat given that it's triggered by explosives.

363

00:21:50,000 --> 00:21:54,000

We need to release all four of these cables precisely at the same time.

364

00:21:54,000 --> 00:22:00,000

And so to do that, Matt Herron and his team here are setting up some quick releases with the

squips.

365

00:22:00,000 --> 00:22:05,000

They're small amounts of explosives that will be triggered electronically so it all happens perfectly.

366

00:22:05,000 --> 00:22:11,000

That's the theory. And once the bridge bombs are primed, it's time to put that to the test.

367

00:22:11,000 --> 00:22:16,000

All right. Blow the bridge in three, two, one, go.

368

00:22:16,000 --> 00:22:18,000

Oh no!

369

00:22:18,000 --> 00:22:25,000

Oh no is right. Only three of the four cables break free, meaning that there's a smack literally.

370

00:22:25,000 --> 00:22:38,000

But moments later, the bridge falls fully, entirely and most importantly without any other complications.

371

00:22:38,000 --> 00:22:42,000

It's a good thing we did a test run because that's when you work out the bugs.

372

00:22:42,000 --> 00:22:48,000

In this case, the bug was a quick release that got jammed and it sort of left the bridge hanging in there, a cockeyed.

373

00:22:48,000 --> 00:22:53,000

But now it's my turn to go out on the bridge and do the drop.

374

00:22:53,000 --> 00:22:59,000

Yep, with the bridge hoisted back up, it's time for Janie to put this cliffhanger myth to the test.

375

00:22:59,000 --> 00:23:03,000

Armed, of course, with some serious safety supplies.

376

00:23:03,000 --> 00:23:10,000

It's called a yo-yo. It's got a little spring-loaded pulley inside that lets the cable out really nicely until you put too much force on it.

377

00:23:10,000 --> 00:23:14,000

And it stops you from hitting the ground, thus saving your life.

378

00:23:14,000 --> 00:23:17,000

Okay, let's go.

379

00:23:17,000 --> 00:23:22,000

Janie tiptoes into position and once there, here's how the test is going to go.

380

00:23:22,000 --> 00:23:26,000

To test this story, I'm going to start running full speed towards the end of the bridge.

381

00:23:26,000 --> 00:23:34,000

Now when I cross that orange plank there, our pyro mat will release the bridge from its moorings here by detonating four explosive squibs.

382

00:23:34,000 --> 00:23:40,000

When I hear that bang, I'm going to take a couple of steps and dive for that board and we'll see whether this is possible.

383

00:23:40,000 --> 00:23:47,000

Yep, for the myth to be confirmed, that boom step-step leap is the play they need to see.

384

00:23:47,000 --> 00:23:49,000

But Janie's got other concerns.

385

00:23:49,000 --> 00:23:52,000

I should point out here that what we're about to do is not a stunt.

386

00:23:52,000 --> 00:24:00,000

In the movies, they do stunts. They can use computers, they can do wire removal, they can do all sorts of things that you don't see in the final edit.

387

00:24:00,000 --> 00:24:06,000

In our case, we're doing it for real and that implies a certain amount of risk because this thing, it's heavy.

388

00:24:06,000 --> 00:24:13,000

It's unpredictable what it's going to do once we get on it. Our lives are at stake and it's worth being really careful with.

389

00:24:13,000 --> 00:24:18,000

Very careful because Janie's life is literally hanging in the balance.

390

00:24:18,000 --> 00:24:21,000

I'm hot. He's hot.

391

00:24:21,000 --> 00:24:24,000

Alright, Janie, you feeling good?

392

00:24:24,000 --> 00:24:25,000

Okay.

393

00:24:25,000 --> 00:24:27,000

On my mark.

394

00:24:27,000 --> 00:24:28,000

Hold on.

395

00:24:29,000 --> 00:24:31,000

Just trying to get into the zone.

396

00:24:31,000 --> 00:24:32,000

Okay.

397

00:24:34,000 --> 00:24:37,000

This is it. There's no turning back.

398

00:24:37,000 --> 00:24:39,000

Okay.

399

00:24:39,000 --> 00:24:41,000

Alright, on my mark.

400

00:24:41,000 --> 00:24:47,000

Bridge jump in three, two, one, go!

401

00:24:51,000 --> 00:24:52,000

Coming up.

402

00:24:52,000 --> 00:24:53,000

Here comes the hail!

403

00:24:53,000 --> 00:24:57,000

Could the world's heaviest hail storm sink a boat?

404

00:24:59,000 --> 00:25:02,000

Do not try anything you are about to see at home.

405

00:25:09,000 --> 00:25:10,000

What?

406

00:25:10,000 --> 00:25:15,000

In hail hijinks, even a tornado-powered hail stone could not penetrate a boat.

407

00:25:15,000 --> 00:25:17,000

Damaged but not a hole.

408

00:25:17,000 --> 00:25:18,000

Yeah.

409

00:25:18,000 --> 00:25:22,000

Alright, so the hail did not punch a hole in the boat. Ice penetration is busted.

410

00:25:22,000 --> 00:25:23,000

Totally.

411

00:25:23,000 --> 00:25:29,000

Now, for this myth to have any chance whatsoever, it would have to be the sheer volume of hail that's going to sink this boat.

412

00:25:29,000 --> 00:25:33,000

Okay, well it sounds like it's time for us to put a boat in the water and load it up with ice

413

00:25:33,000 --> 00:25:36,000

and see how much it takes to sink it if it does it all.

414

00:25:36,000 --> 00:25:38,000

Yeah, science is really interesting. I don't know which way this one's going to go.

415

00:25:38,000 --> 00:25:40,000

Yeah, me neither.

416

00:25:40,000 --> 00:25:43,000

So solo hail stones seem some.

417

00:25:43,000 --> 00:25:47,000

Yet overloading a boat is another way to send it to the bottom.

418

00:25:47,000 --> 00:25:51,000

And if a heap of hail could do the same, this myth might be true.

419

00:25:51,000 --> 00:25:53,000

But how?

420

00:25:55,000 --> 00:25:58,000

To find out, the guys hit the docks with their aluminum arc.

421

00:25:58,000 --> 00:26:00,000

Rough seas ahead.

422

00:26:00,000 --> 00:26:03,000

And a plan for one hail of a hail storm.

423

00:26:03,000 --> 00:26:09,000

Now we've seen the hail ball, even with a 300 mile per hour wind behind it cannot put a hole in the boat.

424

00:26:09,000 --> 00:26:13,000

But what if we had a huge storm? What if a massive amount of hail dropped into the boat?

425

00:26:13,000 --> 00:26:15,000

Well, that's what we're doing out here at the Port of San Francisco.

426

00:26:15,000 --> 00:26:17,000

We're going to throw a boat in the water.

427

00:26:17,000 --> 00:26:18,000

That's perfect.

428

00:26:18,000 --> 00:26:21,000

We're going to make a huge storm and we're going to see what happens.

429

00:26:21,000 --> 00:26:26,000

And they'll rustle up that record breaking storm, courtesy of a freezer truck and a conveyor belt.

430

00:26:26,000 --> 00:26:28,000

All right, that looks good.

431

00:26:28,000 --> 00:26:31,000

This is our own special Mythbusters massive hail storm right here.

432

00:26:31,000 --> 00:26:35,000

These bags of ice are in our refrigerator truck at exactly 27 degrees Fahrenheit.

433

00:26:35,000 --> 00:26:40,000

They're going to storm down this conveyor belt into the boat and hopefully sink it.

434

00:26:40,000 --> 00:26:43,000

Looking at that boat, I think we might actually have a shot at this.

435

00:26:45,000 --> 00:26:47,000

Okay, fire up the conveyor belt.

436

00:26:48,000 --> 00:26:50,000

Here comes the hail.

437

00:26:53,000 --> 00:26:55,000

Woo, it's coming down in buckets.

438

00:26:56,000 --> 00:26:58,000

All right, that's 100 pounds.

439

00:26:59,000 --> 00:27:02,000

We know the record amount of hail fall in an afternoon is four feet.

440

00:27:02,000 --> 00:27:04,000

That's 200 pounds.

441

00:27:04,000 --> 00:27:05,000

It's coming.

442

00:27:05,000 --> 00:27:09,000

So what we're going to do is fill up our boat completely to the lip with hail.

443

00:27:09,000 --> 00:27:11,000

400 pounds.

444

00:27:11,000 --> 00:27:13,000

If it sinks, this myth is plausible.

445

00:27:13,000 --> 00:27:16,000

But if it doesn't sink, this myth is busted.

446

00:27:16,000 --> 00:27:19,000

Oh my God, it's almost filled.

447

00:27:19,000 --> 00:27:22,000

With the hail now piled three feet deep.

448

00:27:22,000 --> 00:27:24,000

I see the bus starting to dip a little.

449

00:27:24,000 --> 00:27:28,000

The boat is surprisingly buoyant and Grant knows why.

450

00:27:28,000 --> 00:27:29,000

Here's the catch.

451

00:27:29,000 --> 00:27:32,000

See, the ice that we have, it's not just one big block.

452

00:27:32,000 --> 00:27:34,000

It's a bunch of little pieces.

453

00:27:34,000 --> 00:27:37,000

500 pounds of hail and it's still floating.

454

00:27:37,000 --> 00:27:39,000

This means that air can get in the middle.

455

00:27:39,000 --> 00:27:43,000

So you're not entirely displacing the air as you would with water.

456

00:27:43,000 --> 00:27:45,000

All right, that's 600 pounds.

457

00:27:45,000 --> 00:27:49,000

But you can stack the ice higher than the edge of the boat.

458

00:27:49,000 --> 00:27:53,000

So at this point, it's not entirely obvious what's going to happen.

459

00:27:54,000 --> 00:27:58,000

All right, that is a whole entire pallet of ice.

460

00:27:58,000 --> 00:27:59,000

That's a ton of ice.

461

00:27:59,000 --> 00:28:02,000

Yeah, and it doesn't even look close to sinking.

462

00:28:02,000 --> 00:28:07,000

The guys brought enough ice to recreate the world's heaviest hail fall of four feet.

463

00:28:07,000 --> 00:28:09,000

Even that amount is proving insufficient.

464

00:28:09,000 --> 00:28:10,000

How's it going, Grant?

465

00:28:10,000 --> 00:28:11,000

Are we almost there?

466

00:28:11,000 --> 00:28:14,000

Yeah, we're at 2,500 pounds.

467

00:28:14,000 --> 00:28:16,000

There's just a few more inches of above water.

468

00:28:16,000 --> 00:28:19,000

But by topping up with more ice...

469

00:28:19,000 --> 00:28:21,000

All right, we're at 2 tons.

470

00:28:21,000 --> 00:28:23,000

Let's get more towards the back.

471

00:28:23,000 --> 00:28:24,000

Yeah, right there.

472

00:28:24,000 --> 00:28:27,000

The boat finally starts to list and then...

473

00:28:27,000 --> 00:28:29,000

It's sinking!

474

00:28:29,000 --> 00:28:30,000

It's going!

475

00:28:30,000 --> 00:28:33,000

I'm sinking the boat with 2 tons of ice.

476

00:28:33,000 --> 00:28:35,000

At last, she's going down.

477

00:28:35,000 --> 00:28:39,000

And while the scale of the hail may be unfeasibly large,

478

00:28:39,000 --> 00:28:41,000

it is finally mission accomplished.

479

00:28:41,000 --> 00:28:43,000

It's coming back up!

480

00:28:43,000 --> 00:28:44,000

That's cool!

481

00:28:44,000 --> 00:28:46,000

Or is it?

482

00:28:46,000 --> 00:28:47,000

Whoa!

483

00:28:47,000 --> 00:28:49,000

I think we got a problem.

484

00:28:49,000 --> 00:28:50,000

It's coming back up!

485

00:28:50,000 --> 00:28:52,000

That's the last of the ice.

486

00:28:53,000 --> 00:28:56,000

So we piled our ice onto the boat, piled it on, piled it on.

487

00:28:56,000 --> 00:29:01,000

It's going lower and lower in the water until finally the edge dipped into the surps of the water

488

00:29:01,000 --> 00:29:04,000

and it started filling up and it started to sink.

489

00:29:04,000 --> 00:29:06,000

And then it popped back up.

490

00:29:06,000 --> 00:29:08,000

What the heck is going on?

491

00:29:08,000 --> 00:29:10,000

Well, ice floats.

492

00:29:10,000 --> 00:29:14,000

So once it hit the water, the ice actually started to support its own weight

493

00:29:14,000 --> 00:29:16,000

and was no longer pushing down.

494

00:29:16,000 --> 00:29:20,000

We did technically sink the boat, but look at how much hail it took.

495

00:29:20,000 --> 00:29:22,000

That's a totally unrealistic amount.

496

00:29:22,000 --> 00:29:26,000

And even with this salvaged falling apart boat, it didn't entirely sink.

497

00:29:26,000 --> 00:29:28,000

This one busted.

498

00:29:28,000 --> 00:29:29,000

Busted.

499

00:29:29,000 --> 00:29:31,000

But wait just a second.

500

00:29:31,000 --> 00:29:34,000

Because this myth's got a twist in the tail.

501

00:29:34,000 --> 00:29:36,000

And fire!

502

00:29:41,000 --> 00:29:44,000

Welcome back.

503

00:29:44,000 --> 00:29:47,000

We are testing the exploding bridge jump from the end of the movie Cliffhanger.

504

00:29:47,000 --> 00:29:52,000

And in this movie, Sylvester Stallone is running from a bomb on a suspension bridge.

505

00:29:52,000 --> 00:29:57,000

The bomb goes off and he takes two and a half more steps before leaping to his salvation

506

00:29:57,000 --> 00:29:59,000

at the very end of the rope bridge.

507

00:29:59,000 --> 00:30:03,000

Everything is in place and we are just about to test this in full scale.

508

00:30:03,000 --> 00:30:07,000

And full scale means Jamie's going to need some fancy footwork.

509

00:30:08,000 --> 00:30:10,000

Just trying to get into the zone.

510

00:30:10,000 --> 00:30:17,000

Because if this myth is true, Jamie needs to make his step, step and leap after the explosion fires.

511

00:30:17,000 --> 00:30:19,000

Alright, on my mark.

512

00:30:19,000 --> 00:30:22,000

But will he even have a leg to stand on in the first place?

513

00:30:22,000 --> 00:30:28,000

Bridge jump in three, two, one, go!

514

00:30:28,000 --> 00:30:31,000

Jamie sprints, the bridge blows.

515

00:30:31,000 --> 00:30:36,000

And in the blink of an eye, he drops like a stone.

516

00:30:36,000 --> 00:30:38,000

Jamie are you okay?

517

00:30:38,000 --> 00:30:40,000

I'm fine.

518

00:30:40,000 --> 00:30:41,000

Excellent.

519

00:30:41,000 --> 00:30:43,000

But did he make any headway?

520

00:30:43,000 --> 00:30:49,000

Yeah, pretty much everything I was trying to do came to a halt the minute I heard that bang.

521

00:30:49,000 --> 00:30:53,000

It was just no further progress. It's all there was to it.

522

00:30:53,000 --> 00:30:58,000

Jamie's right. At the moment the cables are cut, the bridge goes into free fall.

523

00:30:58,000 --> 00:31:03,000

And almost immediately, Jamie has nothing solid left to run on, let alone jump.

524

00:31:04,000 --> 00:31:08,000

So the boom step, step, leap combo is busted.

525

00:31:08,000 --> 00:31:13,000

But if the guys eliminate the two step start, maybe the Smith will find its feet.

526

00:31:15,000 --> 00:31:22,000

We find ourselves wondering if there is a tiny period of time when one could still get some push off the bridge even after it's been compromised.

527

00:31:22,000 --> 00:31:24,000

So that is what I'm about to test.

528

00:31:24,000 --> 00:31:28,000

I will be standing on the bridge within leaping distance of the top bar of the bridge.

529

00:31:28,000 --> 00:31:31,000

I will wait until I hear the explosion.

530

00:31:31,000 --> 00:31:33,000

No one's going to tell me when it's coming.

531

00:31:33,000 --> 00:31:37,000

In the moment I hear it, I'm going to push off and go for that top bar.

532

00:31:37,000 --> 00:31:45,000

If I make it, then presumably there is a tiny period of time when it is feasible to leap on a falling bridge.

533

00:31:45,000 --> 00:31:50,000

But can Adam's reflex leap succeed where Jamie's running jump failed?

534

00:31:50,000 --> 00:31:51,000

Let's do this.

535

00:31:51,000 --> 00:31:53,000

Or is it a bridge too far?

536

00:31:53,000 --> 00:31:59,000

Based on my experience, once the bridge is released, the person on the bridge is pretty much done.

537

00:31:59,000 --> 00:32:04,000

So as far as what Adam does, I don't think we're going to be seeing any leaping.

538

00:32:04,000 --> 00:32:06,000

Jamie is skeptical.

539

00:32:06,000 --> 00:32:07,000

Yep.

540

00:32:07,000 --> 00:32:10,000

And after a few dummy jumps.

541

00:32:12,000 --> 00:32:13,000

Yeah, that's it.

542

00:32:13,000 --> 00:32:16,000

It's time to put his prediction to the test.

543

00:32:16,000 --> 00:32:17,000

Scary.

544

00:32:17,000 --> 00:32:18,000

Are you all set, Adam?

545

00:32:18,000 --> 00:32:21,000

Adam doesn't know when the boom is coming.

546

00:32:21,000 --> 00:32:23,000

I'm in possession. I'm ready. Go, man.

547

00:32:23,000 --> 00:32:26,000

But he crouches, focuses, and then...

548

00:32:27,000 --> 00:32:28,000

Oh!

549

00:32:31,000 --> 00:32:33,000

There was nothing!

550

00:32:33,000 --> 00:32:35,000

There was nothing at all!

551

00:32:35,000 --> 00:32:39,000

I tried to crack, and then there was no ground.

552

00:32:39,000 --> 00:32:41,000

There's no grace period there.

553

00:32:44,000 --> 00:32:49,000

The fall was so fast and furious that Adam had no time at all to react.

554

00:32:49,000 --> 00:32:52,000

From my standpoint, that was kind of anti-climactic.

555

00:32:53,000 --> 00:32:54,000

One moment there was a bridge.

556

00:32:54,000 --> 00:32:55,000

Next moment, no bridge.

557

00:32:55,000 --> 00:32:59,000

Yeah, it's like I said, once you hear that sound, it's like a knife edge. You're done.

558

00:32:59,000 --> 00:33:04,000

Just like their small-scale tests, the bridge drops almost the moment the explosion happens.

559

00:33:04,000 --> 00:33:07,000

There's just no time to think, let alone leap.

560

00:33:07,000 --> 00:33:12,000

I know it looks like I'm hanging out over a void, but technically, experimentally, I'm dead.

561

00:33:12,000 --> 00:33:17,000

The moment I heard the sound, I didn't have time to actually leap or anything.

562

00:33:17,000 --> 00:33:18,000

I was just following.

563

00:33:18,000 --> 00:33:20,000

That's pretty definitive right there.

564

00:33:20,000 --> 00:33:22,000

Yep, there's no doubt about it.

565

00:33:22,000 --> 00:33:27,000

Once the cables are cut, the bridge and its passenger are going down.

566

00:33:27,000 --> 00:33:31,000

This is safety equipment, having kept me alive one more time.

567

00:33:31,000 --> 00:33:32,000

Hi, Mom.

568

00:33:32,000 --> 00:33:36,000

And here's why. The moment the cable is cut, the tension disappears,

569

00:33:36,000 --> 00:33:40,000

and the bridge acts like a piece of rope swinging through the air,

570

00:33:40,000 --> 00:33:43,000

offering nothing for Adam or Jamie to jump off.

571

00:33:43,000 --> 00:33:47,000

This is totally impossible. This thing is completely busted.

572

00:33:47,000 --> 00:33:53,000

It is, but you know, if I was on a bridge and something bad was happening,

573

00:33:53,000 --> 00:33:56,000

I would think that I would just hold on to my handrails.

574

00:33:56,000 --> 00:33:58,000

You want to try that?

575

00:33:58,000 --> 00:34:00,000

I mean, it's an option, isn't it?

576

00:34:00,000 --> 00:34:01,000

I think it is.

577

00:34:01,000 --> 00:34:02,000

Let's do it. Let's try it.

578

00:34:02,000 --> 00:34:03,000

Okay.

579

00:34:03,000 --> 00:34:04,000

Still to come.

580

00:34:04,000 --> 00:34:05,000

Fire!

581

00:34:05,000 --> 00:34:10,000

It's hail on high water, but you'll the Mythbusters get that sinking feeling.

582

00:34:10,000 --> 00:34:11,000

We have impact.

583

00:34:11,000 --> 00:34:13,000

That is definitely not a hole.

584

00:34:13,000 --> 00:34:14,000

Totally busted.

585

00:34:14,000 --> 00:34:16,000

That's 6,000 pounds down there.

586

00:34:16,000 --> 00:34:17,000

It's still floating.

587

00:34:17,000 --> 00:34:20,000

You guys, I think we're missing something really critical here.

588

00:34:20,000 --> 00:34:21,000

What's that?

589

00:34:21,000 --> 00:34:24,000

We've never fired a hail bolt at a boat while it's on the water.

590

00:34:24,000 --> 00:34:27,000

So do you think that because water is incompressible,

591

00:34:27,000 --> 00:34:31,000

that it's going to make the boat flex less and we might have more success?

592

00:34:31,000 --> 00:34:33,000

I'm not sure, but I think we have to do it.

593

00:34:33,000 --> 00:34:34,000

Hey, I'm getting it.

594

00:34:34,000 --> 00:34:35,000

I'm getting it.

595

00:34:35,000 --> 00:34:36,000

I'm getting it.

596

00:34:36,000 --> 00:34:37,000

I'm getting it.

597

00:34:37,000 --> 00:34:38,000

I'm getting it.

598

00:34:38,000 --> 00:34:40,000

I'm not sure, but I think we have to do it.

599

00:34:40,000 --> 00:34:42,000

Hey, I'm game. Let's try it.

600

00:34:42,000 --> 00:34:46,000

So for this Myth's final, final test, it's off to a fresh location.

601

00:34:46,000 --> 00:34:48,000

The water quality control plant.

602

00:34:48,000 --> 00:34:54,000

We'll having water under the boat stop it from flexing and make a hail puncture possible.

603

00:34:54,000 --> 00:34:57,000

To find out, the guys will leave no cannon unturned.

604

00:34:57,000 --> 00:34:58,000

Is it in?

605

00:34:58,000 --> 00:34:59,000

Not yet.

606

00:34:59,000 --> 00:35:03,000

And to cut to the chase, they'll only test their two most likely boats,

607

00:35:03,000 --> 00:35:05,000

wood and fiberglass.

608

00:35:06,000 --> 00:35:09,000

Next stop, cannon.

609

00:35:09,000 --> 00:35:11,000

So this is the plan.

610

00:35:11,000 --> 00:35:13,000

We have our wood boat and our fiberglass boat.

611

00:35:13,000 --> 00:35:16,000

What we're going to do is place each of the boats in the water

612

00:35:16,000 --> 00:35:20,000

and start firing hail balls at 300 miles an hour into each of the boats.

613

00:35:20,000 --> 00:35:21,000

Let's have loading.

614

00:35:21,000 --> 00:35:25,000

And we'll find out if that's enough to punch a hole in the boat and sink it.

615

00:35:25,000 --> 00:35:28,000

300 miles per hour is the most extreme wind speed possible,

616

00:35:28,000 --> 00:35:33,000

but in the shop, it failed to fire up a hole.

617

00:35:33,000 --> 00:35:36,000

Okay, fiberglass boat at 300 miles an hour.

618

00:35:36,000 --> 00:35:41,000

But now, will water underneath the boat create the right conditions for a rupture?

619

00:35:41,000 --> 00:35:43,000

Ready, fire.

620

00:35:47,000 --> 00:35:49,000

Well, is there a hole?

621

00:35:49,000 --> 00:35:51,000

I don't see a hole and the boat's still floating.

622

00:35:51,000 --> 00:35:54,000

While the water did dampen the flex of the fiberglass,

623

00:35:54,000 --> 00:36:00,000

this boat was still too tough to be torpedoed, even at tornado speed.

624

00:36:00,000 --> 00:36:04,000

Which leaves them with one last shot across the boughs.

625

00:36:04,000 --> 00:36:08,000

We had our best luck with this experiment in the shop when we used the wood boat.

626

00:36:08,000 --> 00:36:12,000

And if we're going to get any sort of penetration, it's going to be with this boat.

627

00:36:12,000 --> 00:36:17,000

But if this wood boat doesn't get a hole at 300 miles per hour when it's on the water,

628

00:36:17,000 --> 00:36:19,000

we might see this thing sink.

629

00:36:19,000 --> 00:36:21,000

Then this hail myth is going down.

630

00:36:21,000 --> 00:36:23,000

Okay, fire at will.

631

00:36:23,000 --> 00:36:29,000

All right, this is 300 miles an hour hail storm versus wood boat on the water.

632

00:36:29,000 --> 00:36:31,000

Fire!

633

00:36:33,000 --> 00:36:35,000

Is that a hole?

634

00:36:35,000 --> 00:36:36,000

We got a hole!

635

00:36:36,000 --> 00:36:37,000

Firework!

636

00:36:37,000 --> 00:36:41,000

Now that is what you call a bona fide hail hole.

637

00:36:41,000 --> 00:36:43,000

Man, it's taking water fast.

638

00:36:43,000 --> 00:36:46,000

Look at that, 300 miles an hour punched a hole.

639

00:36:46,000 --> 00:36:49,000

All right, that did punch a hole, but I mean 300 miles an hour,

640

00:36:49,000 --> 00:36:53,000

that is a ridiculous amount of speed for a hail stone to be traveling.

641

00:36:53,000 --> 00:36:55,000

Hmm, Tori's right.

642

00:36:55,000 --> 00:36:58,000

Hail has never been recorded at 300 miles per hour,

643

00:36:58,000 --> 00:37:04,000

so if they're to really confirm this myth, they need to slow their hail stone to a realistic speed.

644

00:37:04,000 --> 00:37:08,000

I want to know if just terminal velocity 80 miles an hour will do it.

645

00:37:08,000 --> 00:37:09,000

Let's patch it up and try it.

646

00:37:09,000 --> 00:37:10,000

Yeah.

647

00:37:10,000 --> 00:37:11,000

You ready, Grant?

648

00:37:11,000 --> 00:37:17,000

Remember, 80 miles per hour is the slowest speed that a hail stone this size would hit the ground.

649

00:37:17,000 --> 00:37:19,000

Ready, fire!

650

00:37:21,000 --> 00:37:23,000

We have impact.

651

00:37:23,000 --> 00:37:26,000

That's a negative on the hole, there's no hole.

652

00:37:26,000 --> 00:37:30,000

But this time the water underneath the boat doesn't add to the impact.

653

00:37:30,000 --> 00:37:33,000

But there's one last speed they can try.

654

00:37:33,000 --> 00:37:37,000

And a more realistic speed with downdraft would be around 150 miles an hour,

655

00:37:37,000 --> 00:37:39,000

just like our experts said.

656

00:37:39,000 --> 00:37:42,000

So, we've repatched the boat, we're going to send it back out,

657

00:37:42,000 --> 00:37:45,000

fire at this boat with 150 miles an hour hail stone.

658

00:37:45,000 --> 00:37:49,000

If that punches a hole, then, and only then can we call this one plausible.

659

00:37:49,000 --> 00:37:52,000

Remember, in the shop this test was negative.

660

00:37:52,000 --> 00:37:55,000

So, will the water underneath make all the difference?

661

00:37:55,000 --> 00:38:01,000

Alright, this is 150 miles an hour hail stone against a wooden boat on the water.

662

00:38:02,000 --> 00:38:04,000

Okay, fire on my mark.

663

00:38:05,000 --> 00:38:06,000

And fire!

664

00:38:09,000 --> 00:38:11,000

We put the hole in the boat!

665

00:38:11,000 --> 00:38:13,000

It's taking on water!

666

00:38:13,000 --> 00:38:15,000

It's going to sink!

667

00:38:15,000 --> 00:38:18,000

Yep, finally, there's fire in the hole.

668

00:38:18,000 --> 00:38:19,000

We did it!

669

00:38:20,000 --> 00:38:25,000

So, we came out here to test whether you could sink a boat with hail while it's sitting on water.

670

00:38:25,000 --> 00:38:29,000

And what we found is that it requires a wooden boat,

671

00:38:29,000 --> 00:38:31,000

and 150 miles per hour speed,

672

00:38:31,000 --> 00:38:34,000

which is a recorded wind speed in a hail storm.

673

00:38:34,000 --> 00:38:37,000

And we found that you could punch a hole in the boat.

674

00:38:37,000 --> 00:38:38,000

What does this mean?

675

00:38:38,000 --> 00:38:43,000

Well, it means that it is possible, but it requires an extreme situation.

676

00:38:43,000 --> 00:38:45,000

And that's what we call plausible.

677

00:38:49,000 --> 00:38:53,000

The classic rope bridge is the simplest way to span two distant points

678

00:38:53,000 --> 00:38:55,000

when the ground falls away in between.

679

00:38:55,000 --> 00:38:59,000

And it's the falling that interests the mythbusters.

680

00:39:00,000 --> 00:39:03,000

All episode long we have been falling off of bridges,

681

00:39:03,000 --> 00:39:06,000

literally trying to imitate Sylvester Stallone's

682

00:39:06,000 --> 00:39:09,000

jump from the exploding bridge at the end of Cliffhanger.

683

00:39:09,000 --> 00:39:12,000

And, I'm sorry to say that we have failed.

684

00:39:12,000 --> 00:39:16,000

This one is totally busted, it's completely not possible.

685

00:39:16,000 --> 00:39:20,000

However, Mr. Heineman, in his infinite wisdom, ponders the conundrum

686

00:39:20,000 --> 00:39:24,000

that if he were running off of an exploding bridge and he heard a bomb go off,

687

00:39:24,000 --> 00:39:27,000

he would merely hold on and see what happens.

688

00:39:27,000 --> 00:39:30,000

So that is what he is about to do.

689

00:39:30,000 --> 00:39:32,000

It's a substitute survival strategy.

690

00:39:32,000 --> 00:39:37,000

In case of bridge drop, is your best bet just to hold on for dear life?

691

00:39:37,000 --> 00:39:40,000

To find out, they add some cushioning to the cables.

692

00:39:40,000 --> 00:39:45,000

I tell you what, it's going to be a lot nicer holding on to that rope than a hard steel cable.

693

00:39:45,000 --> 00:39:48,000

And then Jamie assumes the position.

694

00:39:49,000 --> 00:39:52,000

What's going to happen here is I'm just going to run like heck,

695

00:39:52,000 --> 00:39:56,000

and when the bridge blows, I'm going to try and hang on to these.

696

00:39:56,000 --> 00:40:00,000

Unless you think the yo-yo here is helping Jamie hang on, it's not.

697

00:40:00,000 --> 00:40:02,000

It's merely keeping him from dying.

698

00:40:02,000 --> 00:40:05,000

Dying may be off the agenda, but injury is always an option,

699

00:40:05,000 --> 00:40:10,000

especially when you're hanging on to 1600 pounds of falling bridge 40 feet above concrete.

700

00:40:10,000 --> 00:40:12,000

You know, it's kind of unsettling.

701

00:40:12,000 --> 00:40:17,000

Like, you know that any minute the rug is going to be pulled out from under you.

702

00:40:17,000 --> 00:40:20,000

You know you're going to get creamed, but you're just going to have to do it.

703

00:40:20,000 --> 00:40:25,000

I know exactly what you mean. I felt precisely the same way out there.

704

00:40:25,000 --> 00:40:27,000

So with the tension dialed in,

705

00:40:27,000 --> 00:40:31,000

All right, on my mark, it's the bridge's last call.

706

00:40:31,000 --> 00:40:33,000

Three, two, one, when you're ready.

707

00:40:33,000 --> 00:40:35,000

And Jamie, please hold the line.

708

00:40:35,000 --> 00:40:37,000

Okay, here we go.

709

00:40:43,000 --> 00:40:46,000

How you doing?

710

00:40:46,000 --> 00:40:48,000

I'm on. I'm holding.

711

00:40:48,000 --> 00:40:49,000

You're holding yourself?

712

00:40:49,000 --> 00:40:50,000

Yeah.

713

00:40:50,000 --> 00:40:51,000

That is manly.

714

00:40:52,000 --> 00:40:56,000

It's taken the grip of a gorilla to hang on through the fall and the landing,

715

00:40:56,000 --> 00:40:57,000

but Jamie's done it.

716

00:40:57,000 --> 00:40:59,000

And the next question is...

717

00:40:59,000 --> 00:41:00,000

Climb up if you had to.

718

00:41:03,000 --> 00:41:08,000

Like a walrus on steroids, Jamie slowly inches his way up.

719

00:41:08,000 --> 00:41:11,000

The now vertical bridge has no footholds.

720

00:41:11,000 --> 00:41:13,000

Come on, you can do it.

721

00:41:13,000 --> 00:41:16,000

But the Heinemann is climbing out.

722

00:41:16,000 --> 00:41:19,000

If you get to the blue bar, you are a hero.

723

00:41:19,000 --> 00:41:21,000

It's only 16 inches above your head.

724

00:41:23,000 --> 00:41:24,000

You're almost there.

725

00:41:24,000 --> 00:41:27,000

Yet when the target's just a whisker away...

726

00:41:30,000 --> 00:41:31,000

Okay.

727

00:41:31,000 --> 00:41:34,000

Jamie's muscles give up for good.

728

00:41:34,000 --> 00:41:36,000

If my life depended on it, I might have made it.

729

00:41:39,000 --> 00:41:40,000

But it doesn't.

730

00:41:42,000 --> 00:41:47,000

Once again, that was a scary experiment that went perfectly.

731

00:41:47,000 --> 00:41:49,000

At the moment Pyro blew the bridge,

732

00:41:49,000 --> 00:41:52,000

Jamie grabbed onto the railings, held on for dear life,

733

00:41:52,000 --> 00:41:54,000

and rode it all the way to the mountainside.

734

00:41:54,000 --> 00:41:56,000

It was beautiful.

735

00:41:56,000 --> 00:41:57,000

There you have it.

736

00:41:57,000 --> 00:42:00,000

I think we have tested this every way from Sunday.

737

00:42:00,000 --> 00:42:02,000

I think we're done dropping this bridge.

738

00:42:02,000 --> 00:42:04,000

So that story is pretty much busted.

739

00:42:04,000 --> 00:42:06,000

It is totally definitively busted.

740

00:42:06,000 --> 00:42:10,000

I think the take-home here is that if bad guys are blowing up the bridge that you're on,

741

00:42:10,000 --> 00:42:12,000

don't waste time running or jumping.

742

00:42:12,000 --> 00:42:13,000

Hold on for dear life.

743

00:42:13,000 --> 00:42:14,000

It's your best chance.

744

00:42:14,000 --> 00:42:15,000

Yep.

745

00:42:15,000 --> 00:42:16,000

Let's climb out of here.

746

00:42:16,000 --> 00:42:17,000

All right.