

1

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

Do not try any of the experiments you are about to see at home.

2

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

You heard him. Don't do it.

3

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

On this episode of Mythbusters,

4

00:00:12,000 --> 00:00:16,000

one, duck, cover them, and hang on.

5

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

Because we've got a killer cocktail of lethal littering...

6

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

My weapon of choice?

7

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

A potentially lethal slush drink.

8

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

...and high-flying action movie action.

9

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

Get to the chopper, glass!

10

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

And first up...

11

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

Looks harmless.

12

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

Now, I've done it. Could be deadly.

13

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

A can of soda cup thrown from a car really kill an oncoming driver.

14

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

Time to inspect.

15

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

Then, from helicopter heeds to fingertip grips,

16

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

can film fall guys really hang on Hollywood style?

17

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

I would love to see the action hero that can hang on to that.

18

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

Who are the Mythbusters?

19

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

Adam Savage.

20

00:00:57,000 --> 00:00:58,000

It comes chaos.

21

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

And Jamie Heinemann.

22

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

Relax. This one hurt a bit.

23

00:01:02,000 --> 00:01:06,000

Between them more than 30 years of special effects experience.

24

00:01:06,000 --> 00:01:07,000

Bye-bye!

25

00:01:07,000 --> 00:01:09,000

Joining them, Carrie Byron.

26

00:01:09,000 --> 00:01:11,000

High explosives and electricity.

27

00:01:11,000 --> 00:01:13,000

Tori Bellegi.

28

00:01:13,000 --> 00:01:15,000

Trashes and fire. This is awesome.

29

00:01:15,000 --> 00:01:17,000

Grant Imahara.

30

00:01:17,000 --> 00:01:19,000

And featuring Jesse Cohn.

31

00:01:19,000 --> 00:01:20,000

That was awesome!

32

00:01:20,000 --> 00:01:22,000

They don't just tell the Myths,

33

00:01:22,000 --> 00:01:25,000

they put them to the test.

34

00:01:26,000 --> 00:01:37,000

Close your eyes. I'm going to paint you a picture with words.

35

00:01:37,000 --> 00:01:38,000

Okay.

36

00:01:38,000 --> 00:01:41,000

I'm driving down the highway at highway speeds.

37

00:01:41,000 --> 00:01:45,000

I've just gone to a drive-in and I've gotten a soda and a styrofoam cup.

38

00:01:45,000 --> 00:01:47,000

And it's the wrong soda.

39

00:01:47,000 --> 00:01:48,000

Oh, you hate that.

40

00:01:48,000 --> 00:01:49,000

I know.

41

00:01:49,000 --> 00:01:52,000

So, I hurl the soda out the window being a jerk.

42

00:01:52,000 --> 00:01:55,000

And it hits a car going in the opposite direction.

43

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

Also at highway speeds, pierces the windshield right in front of the driver and kills her.

44

00:02:01,000 --> 00:02:04,000

A styrofoam cup, does that?

45

00:02:04,000 --> 00:02:05,000

I know.

46

00:02:05,000 --> 00:02:07,000

That is crazy.

47

00:02:09,000 --> 00:02:12,000

As if simply littering wasn't bad enough,

48

00:02:12,000 --> 00:02:17,000

the villain of this myth allegedly killed the driver of an oncoming car

49

00:02:17,000 --> 00:02:20,000

with a styrofoam soda cup.

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00:02:20,000 --> 00:02:23,000

Whilst traveling at highway speeds,

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00:02:23,000 --> 00:02:28,000

our trash-happy perpetrator tossed his unfinished drink out of the window,

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00:02:28,000 --> 00:02:33,000

which supposedly pierced the windshield of an innocent drive-by bystander

53

00:02:33,000 --> 00:02:37,000

with enough force to take them out permanently.

54

00:02:37,000 --> 00:02:40,000

Okay, now I want to paint you a word picture.

55

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

I'm not going to close my eyes, though.

56

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

That's fine. This is a quick one.

57

00:02:44,000 --> 00:02:47,000

We make a cannon that shoots a cup of soda.

58

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

Huh?

59

00:02:48,000 --> 00:02:49,000

Really?

60

00:02:49,000 --> 00:02:52,000

I somehow pictured two cars going at each other jousting fashion,

61

00:02:52,000 --> 00:02:54,000

tossing cups out the window.

62

00:02:54,000 --> 00:02:56,000

No, no, no. I figure we'll get exactly to that place.

63

00:02:56,000 --> 00:02:58,000

But first, we need to know what the cup is filled with.

64

00:02:58,000 --> 00:03:01,000

Is it soda? Is it soda and ice? Is it ice alone? Is it a slush drink?

65

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

We have to determine what filling has the most power,

66

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

and what's better for that than a cannon.

67

00:03:06,000 --> 00:03:08,000

Well, all right, then.

68

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

I thought you'd like it.

69

00:03:10,000 --> 00:03:14,000

So before the highway trash jousting can begin...

70

00:03:14,000 --> 00:03:17,000

I think that was a hit!

71

00:03:18,000 --> 00:03:22,000

The guys are going to arm themselves with an indoor air cannon

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00:03:22,000 --> 00:03:24,000

the size of the large Hadron Collider.

73

00:03:24,000 --> 00:03:26,000

Well, almost.

74

00:03:26,000 --> 00:03:28,000

I'd say that ought to do it.

75

00:03:28,000 --> 00:03:32,000

Their goal is to discover which of the various possible combinations

76

00:03:32,000 --> 00:03:36,000

of cup contents would impart the most force on impact.

77

00:03:36,000 --> 00:03:41,000

And speaking of the force, here's the Yoda of soda.

78

00:03:41,000 --> 00:03:44,000

So there you have it, our potentially deadly Styrofoam cup.

79

00:03:44,000 --> 00:03:46,000

Now, for the purposes of our experimentation,

80

00:03:46,000 --> 00:03:50,000

I'm going to want to know exactly how much energy this cup imparts

81

00:03:50,000 --> 00:03:53,000

to something it hits, whether it's empty or filled with different substances.

82

00:03:53,000 --> 00:03:56,000

How am I going to do that? With this, a load cell.

83

00:03:56,000 --> 00:03:59,000

This little button here can tell me when I hit it with something

84

00:03:59,000 --> 00:04:03,000

exactly how much energy is transferred from the object to the load cell.

85

00:04:03,000 --> 00:04:06,000

But here we've got an object that's too big and a load cell that's too small,

86

00:04:06,000 --> 00:04:09,000

so I'm going to increase the surface area of my load cell

87

00:04:09,000 --> 00:04:12,000

by placing it between these two nice, heavy steel plates.

88

00:04:12,000 --> 00:04:15,000

Now, when this cup hits this first steel plate,

89

00:04:15,000 --> 00:04:19,000

that will transfer the energy to the button and tell me exactly how much energy

90

00:04:19,000 --> 00:04:22,000

this potentially lethal cup might have.

91

00:04:22,000 --> 00:04:23,000

It's ready.

92

00:04:23,000 --> 00:04:27,000

With the force plate in place, the guys will be able to accurately compare

93

00:04:27,000 --> 00:04:31,000

the impact of each cup fired from the cannon.

94

00:04:31,000 --> 00:04:34,000

Off at a rakeish angle, I like it.

95

00:04:34,000 --> 00:04:36,000

So this is how this works.

96

00:04:36,000 --> 00:04:40,000

We've got our specially made pressure tank with a built-in fast-acting valve.

97

00:04:40,000 --> 00:04:44,000

Now, when we open that valve, all that air comes out at high speed,

98

00:04:44,000 --> 00:04:48,000

heads straight down the barrel.

99

00:04:48,000 --> 00:04:53,000

Our cup comes out the end, hits this plate, pushes on the load cell,

100

00:04:53,000 --> 00:04:54,000

bobs your uncle.

101

00:04:54,000 --> 00:04:56,000

So, Robert's your mother's brother.

102

00:04:56,000 --> 00:04:59,000

Every target needs a motivation.

103

00:04:59,000 --> 00:05:01,000

Yeah.

104

00:05:01,000 --> 00:05:04,000

And Jamie is the light at the end of the tunnel.

105

00:05:04,000 --> 00:05:14,000

So fall, guys. What are we, testing myths about 80s TV shows?

106

00:05:14,000 --> 00:05:16,000

Ooh, can we do A-Team next?

107

00:05:16,000 --> 00:05:18,000

Yes and no. Yes, we can get to the A-Team,

108

00:05:18,000 --> 00:05:21,000

and no, we are not testing myths about 80s TV shows.

109

00:05:21,000 --> 00:05:23,000

We're actually going to test the myths about falling,

110

00:05:23,000 --> 00:05:25,000

or more accurately, not falling.

111

00:05:25,000 --> 00:05:27,000

So you're talking about like the classic Hollywood scenario

112

00:05:27,000 --> 00:05:30,000

where somebody's hanging on to a high edge using nothing with their fingertips.

113

00:05:30,000 --> 00:05:31,000

Exactly.

114

00:05:31,000 --> 00:05:33,000

This sounds awesome.

115

00:05:33,000 --> 00:05:38,000

To cling on by your fingertips is a classic silver screen cliché.

116

00:05:38,000 --> 00:05:44,000

Apparently, in any action movie, the hero can hang on indefinitely.

117

00:05:44,000 --> 00:05:48,000

But are any of the many variations really viable?

118

00:05:48,000 --> 00:05:53,000

To find out, the team will take on two of the most common.

119

00:05:53,000 --> 00:05:57,000

First, can you really just hang on until health comes along?

120

00:05:57,000 --> 00:06:00,000

Then, hauling yourself into a helicopter.

121

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

Is it fact or film fiction?

122

00:06:03,000 --> 00:06:05,000

Guys, I have the perfect place to test this.

123

00:06:05,000 --> 00:06:07,000

There's a fire training tower in Pleasanton.

124

00:06:07,000 --> 00:06:11,000

It's got ledges all around, easily accessible rooftop, and it's pretty tall.

125

00:06:11,000 --> 00:06:14,000

Well, as far as the hang time test goes, there's one thing I'd like to add,

126

00:06:14,000 --> 00:06:18,000

and that's edge thickness, and see how that affects how long you can hold on to.

127

00:06:18,000 --> 00:06:19,000

What are we waiting for?

128

00:06:19,000 --> 00:06:25,000

So the team head on out to hang out at the perfect place to, you know, hang out.

129

00:06:25,000 --> 00:06:27,000

Alright, now when we talked about this in the blueprint room,

130

00:06:27,000 --> 00:06:29,000

it seemed pretty straightforward.

131

00:06:29,000 --> 00:06:31,000

Whoa, this is high.

132

00:06:31,000 --> 00:06:34,000

I mean, we just grab onto an edge and see how long we can hang on.

133

00:06:34,000 --> 00:06:39,000

But now, standing on top of the 75-foot building, I'm wondering, is this really necessary?

134

00:06:39,000 --> 00:06:42,000

I mean, can't we just test this hanging off a door frame?

135

00:06:42,000 --> 00:06:47,000

With the team's nerves suitably primed, let's find out what's on the agenda.

136

00:06:47,000 --> 00:06:51,000

So the first thing we're going to test is how long you can hang on to a ledge.

137

00:06:51,000 --> 00:06:54,000

And to do that, I've built this, the ledge-o-matic.

138

00:06:54,000 --> 00:06:58,000

It's fully adjustable, so we can block off a controlled amount of ledge each time.

139

00:06:58,000 --> 00:07:03,000

And we'll get progressively smaller and smaller until we can no longer hang on.

140

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

Then we'll have a good idea of how long an average Joe can hang on to a ledge.

141

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

But before the action begins, let's meet the man who'll be pulling the pinata strings.

142

00:07:12,000 --> 00:07:13,000

Anybody got a bat?

143

00:07:13,000 --> 00:07:18,000

Aaron, a professional climber, is not only helping the team with their safety protocols.

144

00:07:18,000 --> 00:07:22,000

You're going to come over the edge, and then what I want you to do is say tension.

145

00:07:22,000 --> 00:07:27,000

He's set up the belay system so it won't support the climber's weight,

146

00:07:27,000 --> 00:07:29,000

at least until they fall.

147

00:07:29,000 --> 00:07:30,000

Okay.

148

00:07:30,000 --> 00:07:32,000

Yeah, it feels real good.

149

00:07:36,000 --> 00:07:38,000

Tori, you're the guinea pig.

150

00:07:38,000 --> 00:07:42,000

Now in the movies, people hang off of all shapes and sizes of ledges,

151

00:07:42,000 --> 00:07:44,000

and we are going to do the same.

152

00:07:44,000 --> 00:07:48,000

The goal is to come up with a set of data that correlates ledge thickness to hang time.

153

00:07:48,000 --> 00:07:49,000

Hook me in.

154

00:07:49,000 --> 00:07:52,000

And to start off with, we're going to use a nice, fat ledge.

155

00:07:52,000 --> 00:07:54,000

I'll double check it just in case.

156

00:07:54,000 --> 00:07:59,000

Yep, the ledge width will be starting at four inches, which should be plenty of room,

157

00:07:59,000 --> 00:08:02,000

even for a fat finger belay chi.

158

00:08:02,000 --> 00:08:04,000

Getting into position.

159

00:08:04,000 --> 00:08:05,000

Good luck, buddy.

160

00:08:05,000 --> 00:08:07,000

Man, this is kind of scary.

161

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

I'm not going to lie.

162

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

Okay.

163

00:08:09,000 --> 00:08:10,000

Okay.

164

00:08:10,000 --> 00:08:12,000

So this is Tori test, four inches.

165

00:08:12,000 --> 00:08:13,000

Ready?

166

00:08:13,000 --> 00:08:14,000

Go.

167

00:08:14,000 --> 00:08:15,000

Hanging.

168

00:08:15,000 --> 00:08:17,000

How you feeling?

169

00:08:17,000 --> 00:08:18,000

Good.

170

00:08:18,000 --> 00:08:20,000

Don't let go.

171

00:08:20,000 --> 00:08:25,000

But even with plenty of room to get a comfortable grip,

172

00:08:25,000 --> 00:08:29,000

after just 30 seconds, the strain begins to show.

173

00:08:29,000 --> 00:08:30,000

How you feeling?

174

00:08:30,000 --> 00:08:31,000

Good?

175

00:08:31,000 --> 00:08:32,000

Concentrate.

176

00:08:32,000 --> 00:08:33,000

Sorry.

177

00:08:33,000 --> 00:08:35,000

And as Adam once said,

178

00:08:35,000 --> 00:08:39,000

Gravity man, it's not just a good idea, it's the law.

179

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

So unlike a Hollywood hero, Tori will inevitably fall.

180

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

But exactly how that happens is a painful surprise.

181

00:08:47,000 --> 00:08:49,000

You're all right?

182

00:08:49,000 --> 00:08:52,000

I think you should be glad that I was a guinea pig.

183

00:08:52,000 --> 00:08:55,000

Bleeding all over like...

184

00:08:55,000 --> 00:08:57,000

If you're squeamish, look away.

185

00:08:57,000 --> 00:09:02,000

Because when the damage is inspected, a deep gash is the result.

186

00:09:02,000 --> 00:09:07,000

But looking at this, it could have been much worse.

187

00:09:07,000 --> 00:09:11,000

Tori fell a full story before landing on a ledge.

188

00:09:11,000 --> 00:09:14,000

His shin taking the full lead.

189

00:09:14,000 --> 00:09:17,000

Yeah, when I saw blood pouring out like pant legs,

190

00:09:17,000 --> 00:09:19,000

I knew it might be bad.

191

00:09:19,000 --> 00:09:26,000

Next on Mythbusters, Adam and Jamie dial in on the deadliest soda cup contents.

192

00:09:26,000 --> 00:09:32,000

Imagine what that'd feel like if that actually hit your head.

193

00:09:32,000 --> 00:09:37,000

Can a cup of soda,

194

00:09:37,000 --> 00:09:39,000

thrown from a passing car,

195

00:09:39,000 --> 00:09:42,000

pierce your windshield and kill you?

196

00:09:42,000 --> 00:09:45,000

To find out, Adam and Jamie first want to know

197

00:09:45,000 --> 00:09:49,000

which of the potential cup contents has the most forceful impact.

198

00:09:49,000 --> 00:09:50,000

How?

199

00:09:50,000 --> 00:09:53,000

Well, here's Adam with some sciencey stuff.

200

00:09:53,000 --> 00:09:55,000

Now, I've already explained that we're collecting the data

201

00:09:55,000 --> 00:09:58,000

about how much force our cups impart on this little load cell right here.

202

00:09:58,000 --> 00:10:00,000

But how does that work?

203

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

It works when a little bit of a load is in the load.

204

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

It's a small amount of electricity which is then collected by

205

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

this national instruments box right here.

206

00:10:11,000 --> 00:10:15,000

This box then sends that data over to David in his computer

207

00:10:15,000 --> 00:10:19,000

who then informs me and Jamie of exactly how much force

208

00:10:19,000 --> 00:10:22,000

each of our cups imparts when it hits the target.

209

00:10:22,000 --> 00:10:24,000

It's about to get really messy in here,

210

00:10:24,000 --> 00:10:27,000

so I'm going to take some precautions.

211

00:10:27,000 --> 00:10:30,000

With the data, we're going to take some extra samples

212

00:10:30,000 --> 00:10:32,000

and some precautions.

213

00:10:32,000 --> 00:10:35,000

With the shop resembling a scene from Dexter,

214

00:10:35,000 --> 00:10:38,000

the wet work can begin.

215

00:10:38,000 --> 00:10:40,000

But before the testing proper,

216

00:10:40,000 --> 00:10:43,000

the guys want a muzzle velocity that simulates two cars

217

00:10:43,000 --> 00:10:46,000

approaching each other at highway speeds,

218

00:10:46,000 --> 00:10:50,000

a cumulative total of 130 miles per hour.

219

00:10:50,000 --> 00:10:53,000

So let's fire her up and find out what she can do.

220

00:10:53,000 --> 00:10:58,000

Firing in three, two, one.

221

00:11:03,000 --> 00:11:05,000

That was a lot of force.

222

00:11:05,000 --> 00:11:07,000

Yep, a lot of force.

223

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

A lot of fast.

224

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

190 miles per hour.

225

00:11:15,000 --> 00:11:19,000

And to dial that back, Jamie has a neat idea that accounts for

226

00:11:19,000 --> 00:11:22,000

the fact that the cups will vary in mass.

227

00:11:22,000 --> 00:11:25,000

For these tests to be valid, all the cups have to hit their target

228

00:11:25,000 --> 00:11:27,000

at about the same speed.

229

00:11:27,000 --> 00:11:29,000

So after a lot of fussing around,

230

00:11:29,000 --> 00:11:32,000

I figured out that I can precisely tune the speed

231

00:11:32,000 --> 00:11:36,000

by the placement of the cup in the barrel.

232

00:11:36,000 --> 00:11:41,000

Okay, four cup of ice, three feet, eight inches.

233

00:11:41,000 --> 00:11:43,000

And that's how we're dialing it in.

234

00:11:43,000 --> 00:11:49,000

Firing in three, two, one.

235

00:11:53,000 --> 00:11:56,000

The final speed was 134 miles an hour. It's perfect.

236

00:11:56,000 --> 00:12:00,000

So with their cannon firing at a constant speed,

237

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

we'll soon find out who pulls the hardest soda cup punch.

238

00:12:04,000 --> 00:12:06,000

Here's a little story I like to call,

239

00:12:06,000 --> 00:12:09,000

oh, this soda's no good, they didn't put any ice in it.

240

00:12:09,000 --> 00:12:11,000

I'm gonna throw it out the window.

241

00:12:11,000 --> 00:12:14,000

One cupful of soda wrapped in plastic,

242

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

shot out of a cannon at 130 miles per hour.

243

00:12:17,000 --> 00:12:18,000

Coming right up.

244

00:12:18,000 --> 00:12:20,000

632 grams.

245

00:12:20,000 --> 00:12:25,000

Firing in three, two, one.

246

00:12:28,000 --> 00:12:30,000

That's too much fun.

247

00:12:32,000 --> 00:12:35,000

Your laminated face is holding up quite well.

248

00:12:35,000 --> 00:12:36,000

So I see.

249

00:12:36,000 --> 00:12:39,000

I just love looking at things like this.

250

00:12:39,000 --> 00:12:41,000

Beautiful.

251

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

Can you imagine what that'd feel like

252

00:12:43,000 --> 00:12:44,000

if that actually hit your head?

253

00:12:44,000 --> 00:12:47,000

Final speed, 132 miles an hour.

254

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

Awesome.

255

00:12:48,000 --> 00:12:49,000

What was the force?

256

00:12:49,000 --> 00:12:51,000

36, 68.

257

00:12:51,000 --> 00:12:53,000

That's the number to beat.

258

00:12:53,000 --> 00:12:57,000

Weighing in at 632 grams of four cup of soda,

259

00:12:57,000 --> 00:12:59,000

traveling at 132 miles per hour,

260

00:12:59,000 --> 00:13:04,000

has 3,668 pounds of force.

261

00:13:04,000 --> 00:13:05,000

What's next?

262

00:13:05,000 --> 00:13:07,000

Here's a little story I like to call,

263

00:13:07,000 --> 00:13:09,000

oh, I've ordered the soda,

264

00:13:09,000 --> 00:13:11,000

and I thought I got what I wanted,

265

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

but I didn't order cherry cola,

266

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

and this tastes like crap.

267

00:13:14,000 --> 00:13:17,000

So I'm gonna throw it all the way out the window.

268

00:13:17,000 --> 00:13:21,000

In the red corner, weighing in at 649 grams,

269

00:13:21,000 --> 00:13:23,000

is a mixed cup of soda and ice.

270

00:13:23,000 --> 00:13:24,000

Let's load her up.

271

00:13:24,000 --> 00:13:27,000

I remind you of working with cows on the farm.

272

00:13:27,000 --> 00:13:29,000

It does, actually.

273

00:13:32,000 --> 00:13:35,000

Okay, Bessie, it's gonna be all right.

274

00:13:35,000 --> 00:13:36,000

Oh, no.

275

00:13:36,000 --> 00:13:42,000

Firing soda and ice in three, two, one.

276

00:13:45,000 --> 00:13:46,000

That's not getting old.

277

00:13:46,000 --> 00:13:47,000

Now.

278

00:13:51,000 --> 00:13:52,000

Wow.

279

00:13:52,000 --> 00:13:54,000

Speed was 134 miles an hour.

280

00:13:54,000 --> 00:13:55,000

What was the force?

281

00:13:55,000 --> 00:13:56,000

43, 31.

282

00:13:56,000 --> 00:13:59,000

43, 31, that's pretty significant.

283

00:14:01,000 --> 00:14:02,000

Interesting.

284

00:14:02,000 --> 00:14:04,000

Despite a small difference in mass,

285

00:14:04,000 --> 00:14:06,000

there was a significant difference

286

00:14:06,000 --> 00:14:08,000

in the force of the impact.

287

00:14:08,000 --> 00:14:11,000

What's next on the menu of Mayhem?

288

00:14:13,000 --> 00:14:15,000

Blue Slush.

289

00:14:15,000 --> 00:14:17,000

It's basically half ice, half liquid,

290

00:14:17,000 --> 00:14:19,000

all ground up real fine.

291

00:14:19,000 --> 00:14:22,000

Whether that translates to a higher impact or not,

292

00:14:22,000 --> 00:14:23,000

I don't know.

293

00:14:23,000 --> 00:14:25,000

Personally, I think it's all about the mass,

294

00:14:25,000 --> 00:14:27,000

but that's what we're gonna test to find out.

295

00:14:27,000 --> 00:14:28,000

Jamie's correct.

296

00:14:28,000 --> 00:14:30,000

Newtonian physics tells us,

297

00:14:30,000 --> 00:14:33,000

in a perfect world, providing they're all traveling

298

00:14:33,000 --> 00:14:36,000

at the same speed, the cup with the most mass

299

00:14:36,000 --> 00:14:38,000

will have the largest impact.

300

00:14:38,000 --> 00:14:41,000

And this puppy, if only just,

301

00:14:41,000 --> 00:14:43,000

is the heavyweight of the litter.

302

00:14:43,000 --> 00:14:48,000

Slush drink in three, two, one.

303

00:14:55,000 --> 00:14:57,000

That is intense.

304

00:14:57,000 --> 00:14:59,000

That's what's making your lips blue.

305

00:14:59,000 --> 00:15:01,000

Awesome.

306

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

Well, the speed is perfect at 134 miles an hour.

307

00:15:04,000 --> 00:15:05,000

David, what was our force?

308

00:15:05,000 --> 00:15:07,000

43, 86.

309

00:15:07,000 --> 00:15:10,000

Dude, I was hoping that would be the case.

310

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

So in the soda cup showdown,

311

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

the slush packed the biggest punch.

312

00:15:16,000 --> 00:15:17,000

Why?

313

00:15:17,000 --> 00:15:19,000

Well, it could be the extra mass,

314

00:15:19,000 --> 00:15:21,000

or it could be that the slush mixture

315

00:15:21,000 --> 00:15:24,000

made up of fine slivers of ice and liquid

316

00:15:24,000 --> 00:15:27,000

enables it to transfer more of its kinetic energy

317

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

to the target than the other contenders.

318

00:15:29,000 --> 00:15:31,000

Either way, we have a winner.

319

00:15:31,000 --> 00:15:33,000

The cup with the heaviest hit

320

00:15:33,000 --> 00:15:36,000

and the prettiest splash is the slush.

321

00:15:37,000 --> 00:15:40,000

After the break with Tori in ER,

322

00:15:40,000 --> 00:15:44,000

Fall Guys Grant and Jesse hang out for science.

323

00:15:44,000 --> 00:15:45,000

I would love to see the action hero

324

00:15:45,000 --> 00:15:47,000

that can hang on to that.

325

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

There he is.

326

00:15:54,000 --> 00:15:55,000

Oh!

327

00:15:55,000 --> 00:15:57,000

In the Fall Guy myth,

328

00:15:57,000 --> 00:16:00,000

Tori has once again put his body on the line.

329

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

Well, my name is Science.

330

00:16:02,000 --> 00:16:05,000

But the science must go on.

331

00:16:05,000 --> 00:16:06,000

Are you bleeding in my car?

332

00:16:06,000 --> 00:16:07,000

No.

333

00:16:07,000 --> 00:16:09,000

So while Tori takes a trip to ER

334

00:16:09,000 --> 00:16:11,000

to stitch up the leak in his leg...

335

00:16:11,000 --> 00:16:13,000

Talk about motivation, not to let go.

336

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

Ah!

337

00:16:15,000 --> 00:16:17,000

Bleeding all over like...

338

00:16:17,000 --> 00:16:20,000

Grant and Jesse are moving on.

339

00:16:20,000 --> 00:16:24,000

My prediction is I will hang on for 10 minutes at least,

340

00:16:24,000 --> 00:16:27,000

and then you'll see the traces of my fingernails

341

00:16:27,000 --> 00:16:29,000

going down the wall.

342

00:16:29,000 --> 00:16:32,000

With the adrenaline pumping and the ledge narrowing...

343

00:16:32,000 --> 00:16:34,000

That's three inches.

344

00:16:34,000 --> 00:16:38,000

Iron grip Imahara is hooked in and out on a limb.

345

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

OK, climbing.

346

00:16:41,000 --> 00:16:42,000

You hanging?

347

00:16:42,000 --> 00:16:43,000

Go.

348

00:16:43,000 --> 00:16:45,000

And with the three inch ledge not even close

349

00:16:45,000 --> 00:16:47,000

to cramping his style,

350

00:16:47,000 --> 00:16:49,000

his time is similar to Tori's.

351

00:16:49,000 --> 00:16:51,000

OK, here I go.

352

00:16:51,000 --> 00:16:53,000

Ah!

353

00:16:53,000 --> 00:16:55,000

Ow!

354

00:16:55,000 --> 00:16:57,000

One minute and three seconds.

355

00:16:57,000 --> 00:16:59,000

Really? Fairly consistent.

356

00:16:59,000 --> 00:17:01,000

Consistent times? Sure.

357

00:17:01,000 --> 00:17:05,000

But bear in mind the myth is about hanging on indefinitely.

358

00:17:05,000 --> 00:17:08,000

Does this hardest make me look heavy?

359

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

And our average Joes are consistently falling.

360

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

Alright, you ready for two inches?

361

00:17:14,000 --> 00:17:16,000

Look, my fingers aren't even two inches long.

362

00:17:16,000 --> 00:17:18,000

Of course I'm ready for two inches.

363

00:17:20,000 --> 00:17:21,000

Hey.

364

00:17:21,000 --> 00:17:23,000

Timer is started.

365

00:17:23,000 --> 00:17:25,000

Despite the further narrowing,

366

00:17:25,000 --> 00:17:27,000

Jesse has plenty of room to work with.

367

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

And once again, her time is in that one minute slot.

368

00:17:30,000 --> 00:17:32,000

A minute six.

369

00:17:32,000 --> 00:17:33,000

That's more.

370

00:17:33,000 --> 00:17:35,000

Yeah, they're starting to slip.

371

00:17:35,000 --> 00:17:37,000

Yeah. Here I go.

372

00:17:39,000 --> 00:17:41,000

Nice!

373

00:17:41,000 --> 00:17:43,000

One minute seventeen.

374

00:17:43,000 --> 00:17:45,000

Woo!

375

00:17:45,000 --> 00:17:48,000

So, we are halfway done with our testing.

376

00:17:48,000 --> 00:17:51,000

And so far we've established an average hang time

377

00:17:51,000 --> 00:17:54,000

for the average Joes of sixty seconds.

378

00:17:54,000 --> 00:17:57,000

Now the two inches wasn't that bad.

379

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

I mean, I was able to hang on for over a minute.

380

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

But now we're going to work our way down to one inch,

381

00:18:02,000 --> 00:18:04,000

and this is where it's really going to start getting challenging.

382

00:18:04,000 --> 00:18:06,000

So, see what happens.

383

00:18:06,000 --> 00:18:09,000

At one inch, the guys really are down to a fingertip grip.

384

00:18:09,000 --> 00:18:13,000

Jesse is about to find out if hanging on to that slimmest of margins

385

00:18:13,000 --> 00:18:17,000

is movie make believe or a real life possibility.

386

00:18:17,000 --> 00:18:20,000

Dude, this hurts way much more.

387

00:18:20,000 --> 00:18:22,000

Hang on there, Jesse.

388

00:18:22,000 --> 00:18:24,000

Alright, here we go.

389

00:18:24,000 --> 00:18:26,000

Woo!

390

00:18:26,000 --> 00:18:28,000

Thirty-three seconds.

391

00:18:28,000 --> 00:18:30,000

That is much, much more difficult.

392

00:18:30,000 --> 00:18:31,000

Really?

393

00:18:31,000 --> 00:18:32,000

Yeah.

394

00:18:32,000 --> 00:18:33,000

Really?

395

00:18:33,000 --> 00:18:35,000

It was less than half the hang time of the previous test

396

00:18:35,000 --> 00:18:37,000

when ledge width wasn't a factor,

397

00:18:37,000 --> 00:18:40,000

which doesn't bode well for Grant,

398

00:18:40,000 --> 00:18:43,000

because he's up next and he's running out of room.

399

00:18:45,000 --> 00:18:48,000

That, my friends, is one half of one inch.

400

00:18:48,000 --> 00:18:51,000

And that is about how much I can hang on.

401

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

I'm predicting a lot of pain,

402

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

but not for very long.

403

00:18:56,000 --> 00:18:58,000

Let's do this.

404

00:18:59,000 --> 00:19:00,000

Okay.

405

00:19:00,000 --> 00:19:04,000

But he can't turn that steely determination into an iron grip.

406

00:19:04,000 --> 00:19:05,000

Oh, my God.

407

00:19:05,000 --> 00:19:07,000

This is crazy.

408

00:19:07,000 --> 00:19:09,000

Because he simply can't get a grip.

409

00:19:09,000 --> 00:19:10,000

You ready?

410

00:19:10,000 --> 00:19:11,000

I'm so ready.

411

00:19:13,000 --> 00:19:14,000

Nothing.

412

00:19:14,000 --> 00:19:16,000

Not even a second.

413

00:19:16,000 --> 00:19:17,000

Ow.

414

00:19:17,000 --> 00:19:18,000

And his time reflects that.

415

00:19:18,000 --> 00:19:22,000

I would love to see the action hero that can hang on to that.

416

00:19:22,000 --> 00:19:24,000

You know, you try and get yourself in the mindset like,

417

00:19:24,000 --> 00:19:28,000

I've got to hang on to this or I'm going to fall or die.

418

00:19:28,000 --> 00:19:32,000

But it's not really a choice with a half inch ledge.

419

00:19:32,000 --> 00:19:34,000

I mean, the second I put my weight on there,

420

00:19:34,000 --> 00:19:36,000

pow, all my fingers exploded,

421

00:19:36,000 --> 00:19:38,000

and then I'm flying to the air.

422

00:19:38,000 --> 00:19:40,000

And it was just that quick.

423

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

No way.

424

00:19:41,000 --> 00:19:42,000

Impossible.

425

00:19:43,000 --> 00:19:45,000

So in direct contradiction to the movies,

426

00:19:45,000 --> 00:19:48,000

if you find yourself hanging on by your fingernails,

427

00:19:48,000 --> 00:19:51,000

you're not hanging on for very long.

428

00:19:51,000 --> 00:19:52,000

Nothing.

429

00:19:52,000 --> 00:19:56,000

And even with room to work with, it's a tough task.

430

00:19:56,000 --> 00:19:59,000

In a real life situation,

431

00:19:59,000 --> 00:20:02,000

you'd better hope help arrives Hollywood style,

432

00:20:02,000 --> 00:20:05,000

fast and in the nick of time.

433

00:20:05,000 --> 00:20:07,000

But this is an action movie myth.

434

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

How would a Hollywood hero cope?

435

00:20:09,000 --> 00:20:13,000

So move over average Joe and average Jesse

436

00:20:13,000 --> 00:20:16,000

and step up action man Aaron.

437

00:20:16,000 --> 00:20:17,000

That's why I'm here.

438

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

First up, Aaron tackles the one inch ledge.

439

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

Okay, start.

440

00:20:21,000 --> 00:20:23,000

And we're off and running.

441

00:20:23,000 --> 00:20:26,000

And he significantly improves on Jesse's time.

442

00:20:26,000 --> 00:20:27,000

You're shaky.

443

00:20:27,000 --> 00:20:28,000

Okay.

444

00:20:28,000 --> 00:20:30,000

Oh!

445

00:20:30,000 --> 00:20:32,000

Whoo!

446

00:20:32,000 --> 00:20:34,000

48 seconds.

447

00:20:34,000 --> 00:20:35,000

Nice.

448

00:20:35,000 --> 00:20:37,000

But what's really impressive

449

00:20:37,000 --> 00:20:40,000

is Aaron's half inch performance.

450

00:20:40,000 --> 00:20:42,000

That's tiny, isn't it?

451

00:20:42,000 --> 00:20:46,000

Remember, Grant couldn't hold on for a single second.

452

00:20:46,000 --> 00:20:47,000

Okay.

453

00:20:47,000 --> 00:20:48,000

Okay.

454

00:20:48,000 --> 00:20:50,000

He's hanging in there.

455

00:20:50,000 --> 00:20:52,000

You're doing awesome.

456

00:20:52,000 --> 00:20:54,000

I can't believe you're still hanging on.

457

00:20:56,000 --> 00:20:58,000

Go!

458

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

Nice!

459

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

14 seconds.

460

00:21:02,000 --> 00:21:04,000

That was great!

461

00:21:09,000 --> 00:21:12,000

All right, so even if you're a super strong climber,

462

00:21:12,000 --> 00:21:14,000

you only got about 14 seconds

463

00:21:14,000 --> 00:21:16,000

before you fall off a super skinny ledge.

464

00:21:16,000 --> 00:21:19,000

Yeah, I mean this whole idea that you can hang on indefinitely

465

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

in action movies, totally busted.

466

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

Yeah, busted.

467

00:21:46,000 --> 00:21:48,000

And the couple lethality won.

468

00:21:48,000 --> 00:21:50,000

Adam and Jamie have spent an afternoon

469

00:21:50,000 --> 00:21:53,000

firing drinks out of an air can

470

00:21:53,000 --> 00:21:56,000

at a laminated picture of Jamie.

471

00:21:56,000 --> 00:21:58,000

As you do.

472

00:21:58,000 --> 00:22:00,000

I think your face is holding up surprisingly well.

473

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

Yeah, I don't usually react when I get hit in the face.

474

00:22:03,000 --> 00:22:06,000

And so far, they've seen that the slush drink

475

00:22:06,000 --> 00:22:08,000

is the heaviest hitter.

476

00:22:08,000 --> 00:22:12,000

But is that power enough to penetrate a windshield

477

00:22:12,000 --> 00:22:15,000

and give the driver a severe case of death?

478

00:22:15,000 --> 00:22:17,000

Moving on.

479

00:22:17,000 --> 00:22:19,000

I don't see why not.

480

00:22:19,000 --> 00:22:21,000

We have already determined the awesome power

481

00:22:21,000 --> 00:22:23,000

of non-trade mark blue slush drink.

482

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

Well, what's next then?

483

00:22:25,000 --> 00:22:27,000

I think it's exactly what you stated at the beginning.

484

00:22:27,000 --> 00:22:29,000

We lined two cars up facing each other,

485

00:22:29,000 --> 00:22:31,000

raced towards each other jousting style at highway speeds,

486

00:22:31,000 --> 00:22:34,000

and I hurled a cup of blue slush drink right at your windshield.

487

00:22:34,000 --> 00:22:36,000

I don't think that would be a good idea.

488

00:22:36,000 --> 00:22:39,000

Let's say we hang a windshield off to the side of my car,

489

00:22:39,000 --> 00:22:41,000

and we aim the soda at that.

490

00:22:41,000 --> 00:22:43,000

Done. Let's do it.

491

00:22:45,000 --> 00:22:47,000

It's too early to work.

492

00:22:47,000 --> 00:22:49,000

By hanging them off the side of the truck

493

00:22:49,000 --> 00:22:52,000

and placing Buster in the hot seat,

494

00:22:52,000 --> 00:22:55,000

Our crash system will sit.

495

00:22:55,000 --> 00:22:57,000

Ha ha ha! Here.

496

00:22:57,000 --> 00:22:59,000

they'll be able to test the myth in safety.

497

00:22:59,000 --> 00:23:01,000

Well, safe for some.

498

00:23:01,000 --> 00:23:03,000

You know, it's going to be a bad day

499

00:23:03,000 --> 00:23:05,000

when you're painted bullseye red.

500

00:23:05,000 --> 00:23:07,000

This may sting a little.

501

00:23:09,000 --> 00:23:11,000

And out on location,

502

00:23:11,000 --> 00:23:13,000

it's time to paint a picture.

503

00:23:13,000 --> 00:23:16,000

Here's how this whole thing is going to play out.

504

00:23:16,000 --> 00:23:19,000

I'm going to play the role of the passenger careening down the freeway at 60 miles an

505

00:23:19,000 --> 00:23:20,480

hour, sucking on a slush drink.

506

00:23:20,480 --> 00:23:21,480

I just got it.

507

00:23:21,480 --> 00:23:22,480

Let's save the drive-thru.

508

00:23:22,480 --> 00:23:27,000

Hey, that's not the one I ordered, I'll say, and, cavalierly, I will throw it out the window.

509

00:23:27,000 --> 00:23:31,480

It flies through the air and smack.

510

00:23:31,480 --> 00:23:32,480

It hits our windshield.

511

00:23:32,480 --> 00:23:36,920

If our cup happens to make it through our windshield and hit into Buster, well, we're

512

00:23:36,920 --> 00:23:41,400

going to have strategically placed shock-watch stickers on both his chest and his head.

513

00:23:41,760 --> 00:23:44,480

That way we'll know whether he got hurt.

514

00:23:44,480 --> 00:23:46,000

So Buster's ready.

515

00:23:46,000 --> 00:23:48,160

The course is ready.

516

00:23:48,160 --> 00:23:52,400

And after a couple of dry drive-bys, our drivers are ready.

517

00:23:52,400 --> 00:23:57,400

Beautiful.

518

00:23:57,400 --> 00:23:59,400

Looks harmless enough, doesn't it?

519

00:23:59,400 --> 00:24:01,680

Could be deadly.

520

00:24:01,680 --> 00:24:05,720

With blue slush in hand, let the lethal litter jousting begin.

521

00:24:05,720 --> 00:24:07,720

Jamie, are you ready to go?

522

00:24:07,720 --> 00:24:09,720

I'm in position and ready to go.

523

00:24:10,040 --> 00:24:13,040

40 mile per hour run with a real slush drink.

524

00:24:13,040 --> 00:24:17,040

In three, two, one, go.

525

00:24:17,040 --> 00:24:22,320

In the next test, they'll be facing off at a more realistic highway speed of 60 miles

526

00:24:22,320 --> 00:24:23,320

an hour.

527

00:24:23,320 --> 00:24:26,320

But for the moment, Adam's just getting his eye in.

528

00:24:26,320 --> 00:24:28,320

A little bit closer, Stig.

529

00:24:34,320 --> 00:24:37,320

I think I might have hit it.

530

00:24:37,320 --> 00:24:38,320

Dude, that's a hit.

531

00:24:38,320 --> 00:24:39,320

Look at that.

532

00:24:39,920 --> 00:24:41,920

Wow, and that's only 40 miles an hour.

533

00:24:41,920 --> 00:24:44,920

At 40 miles per hour, that is spooky promising for this.

534

00:24:45,920 --> 00:24:49,920

That was just a test run, and I didn't fully hit the windshield,

535

00:24:49,920 --> 00:24:53,920

and you're seeing a kind of shocking amount of damage from our 40 mile per hour run.

536

00:24:54,920 --> 00:24:55,920

That's awesome.

537

00:24:56,920 --> 00:24:58,920

I think we can tighten a lot of this up.

538

00:24:58,920 --> 00:25:00,920

I think Jamie could drive a little bit closer to the cones.

539

00:25:00,920 --> 00:25:03,920

I think my aim will get better as we do this.

540

00:25:03,920 --> 00:25:05,920

But right now, I feel pretty good about this.

541

00:25:06,520 --> 00:25:10,520

Control mayhem, check, chance of science, high.

542

00:25:10,520 --> 00:25:12,520

Happy Mythbusters confirmed.

543

00:25:12,520 --> 00:25:15,520

Forecast, ramping it up.

544

00:25:15,520 --> 00:25:17,520

My vehicle, experiment.

545

00:25:17,520 --> 00:25:21,520

My weapon of choice, a potentially lethal slush drink.

546

00:25:22,520 --> 00:25:30,520

This is 60 miles an hour Styrofoam cup with slush drink in three, two, one, go.

547

00:25:33,520 --> 00:25:35,520

Very exciting.

548

00:25:36,520 --> 00:25:38,520

This is really good.

549

00:25:49,520 --> 00:25:51,520

I think that was a perfect hit.

550

00:25:58,520 --> 00:26:01,520

I don't know about you, but that had kind of bummed me out.

551

00:26:01,520 --> 00:26:05,520

That's a bullseye of bullseye, especially that.

552

00:26:06,520 --> 00:26:09,520

A perfect hit.

553

00:26:09,520 --> 00:26:11,520

The cup was aimed straight at Buster.

554

00:26:11,520 --> 00:26:13,520

So how did he do?

555

00:26:13,520 --> 00:26:15,520

Taking Buster's vitals.

556

00:26:15,520 --> 00:26:17,520

I can see them. They're all clean.

557

00:26:17,520 --> 00:26:24,520

Yeah, he didn't take any lethal damage, but hell, if that happened to your car,

558

00:26:24,520 --> 00:26:27,520

he'd be a very unhappy, probably unsafe driver.

559

00:26:27,520 --> 00:26:31,520

Well, not to mention the fact that you might well have a crash afterwards,

560

00:26:31,520 --> 00:26:33,520

because you can't see anything.

561

00:26:33,520 --> 00:26:35,520

Exactly.

562

00:26:35,520 --> 00:26:38,520

There's no doubt the impact would have caused a crash,

563

00:26:38,520 --> 00:26:42,520

but incredibly Buster seems to have escaped direct injury.

564

00:26:42,520 --> 00:26:47,520

And check out the big brain on Jamie, because he knows why.

565

00:26:47,520 --> 00:26:52,520

This windshield, like all windshields these days, is made out of laminated glass.

566

00:26:52,520 --> 00:26:54,520

What's that mean?

567

00:26:54,520 --> 00:26:59,520

Well, what they do is they take two sheets of glass and bond it together with a rubbery plastic in between.

568

00:26:59,520 --> 00:27:03,520

And that way, even though the glass goes all blotto, like it does here,

569

00:27:03,520 --> 00:27:05,520

that membrane holds everything together.

570

00:27:05,520 --> 00:27:10,520

In fact, you can see on our high-speed camera how it ballooned out in the back when it got hit,

571

00:27:10,520 --> 00:27:12,520

but it didn't get a hole in it.

572

00:27:12,520 --> 00:27:15,520

Of course, sooner or later, we're going to put a hole in it.

573

00:27:21,520 --> 00:27:23,520

So there's one more thing I want to test.

574

00:27:23,520 --> 00:27:24,520

What's that?

575

00:27:24,520 --> 00:27:27,520

It is a movie classic. The hero is rescued by a helicopter.

576

00:27:27,520 --> 00:27:29,520

The helicopter does not have time to land.

577

00:27:29,520 --> 00:27:34,520

Right. He has to grab onto the skid, pull himself up and over and into the cabin,

578

00:27:34,520 --> 00:27:39,520

despite the downdraft from the blades and the onrushing air as the helicopter flies away.

579

00:27:39,520 --> 00:27:42,520

That's a great myth, but nobody's going to let us hang from a real helicopter.

580

00:27:42,520 --> 00:27:45,520

You're right, and that is why we're going to build our own helicopter.

581

00:27:45,520 --> 00:27:48,520

And then what we'll do is we'll measure the downdraft created by a helicopter,

582

00:27:48,520 --> 00:27:51,520

and that'll transfer into a weight that we'll wear while we're experimenting.

583

00:27:51,520 --> 00:27:52,520

Perfect.

584

00:27:52,520 --> 00:27:55,520

Well, it's not hover around here anymore.

585

00:27:55,520 --> 00:27:59,520

So to get a head start on the myth of the chopper climb,

586

00:27:59,520 --> 00:28:01,520

this is how we make it the grant to head.

587

00:28:01,520 --> 00:28:05,520

Tori, once again, makes a new head for Grant.

588

00:28:05,520 --> 00:28:07,520

Hey, he's a good robot.

589

00:28:07,520 --> 00:28:09,520

That's enough out of you.

590

00:28:09,520 --> 00:28:11,520

So what I have here is Grant's head and shoulders.

591

00:28:11,520 --> 00:28:15,520

This is going to give us the same surface area as somebody holding onto the helicopter skid.

592

00:28:15,520 --> 00:28:19,520

Now, I've attached Grant to this scale, so that way if there's any change

593

00:28:19,520 --> 00:28:22,520

in the downforce, we'll be able to measure it.

594

00:28:22,520 --> 00:28:24,520

It works.

595

00:28:26,520 --> 00:28:33,520

Now, obviously, the most direct way to test this myth would be to try to hang from a helicopter while it's flying.

596

00:28:33,520 --> 00:28:37,520

But unfortunately, the insurers tell us it's too dangerous.

597

00:28:37,520 --> 00:28:43,520

But don't worry, because we have a cunning plan which still involves a real helicopter.

598

00:28:43,520 --> 00:28:47,520

And we've enlisted the help of making air helicopters to test this myth.

599

00:28:47,520 --> 00:28:54,520

So they're about to find out how much downdraft there is by hovering directly overhead the head.

600

00:28:54,520 --> 00:28:58,520

And in close, the downdforce is surprisingly small.

601

00:28:58,520 --> 00:29:03,520

So it's roughly about 50 to 80 grams, but he's just hungry.

602

00:29:03,520 --> 00:29:06,520

Which is fairly insignificant.

603

00:29:06,520 --> 00:29:09,520

And even a sudden takeoff doesn't make much difference.

604

00:29:09,520 --> 00:29:12,520

So it got up to a little over 100 grams on that one.

605

00:29:12,520 --> 00:29:16,520

100 grams? Nothing. You're close way more than 100 grams.

606

00:29:16,520 --> 00:29:21,520

So we just finished testing the downforce in the helicopter, and the results were very consistent.

607

00:29:21,520 --> 00:29:23,520

We had to hover above our scale.

608

00:29:23,520 --> 00:29:26,520

As he came down, the weight increased.

609

00:29:26,520 --> 00:29:29,520

However, it only got to 50 grams, which is nothing.

610

00:29:29,520 --> 00:29:31,520

I mean, you're close way more than that.

611

00:29:31,520 --> 00:29:34,520

And at one point we had to punch it as if he was taking it off.

612

00:29:34,520 --> 00:29:39,520

And it peaked at about 130 grams, which is still not that much weight.

613

00:29:39,520 --> 00:29:45,520

So it looks like the downforce of the helicopter really isn't going to affect your ability to hang onto the skid.

614

00:29:45,520 --> 00:29:52,520

So in summary, and somewhat unexpectedly, the team can ignore the downdraft from the chopper blades.

615

00:29:52,520 --> 00:29:55,520

And go to work at the next location.

616

00:29:57,520 --> 00:29:59,520

Best commute ever!

617

00:29:59,520 --> 00:30:04,520

No signs prohibiting heavy machinery or myth busting. Perfect.

618

00:30:04,520 --> 00:30:11,520

Because of the pool, they've got everything they need, including a cool chopper mock-up Jesse knocked up at the shop.

619

00:30:11,520 --> 00:30:16,520

Alright, so it may not be a real helicopter, and a lot of it is made from plywood.

620

00:30:16,520 --> 00:30:19,520

But I'd have to say it's a pretty darn good helicopter for the amount of time I had.

621

00:30:19,520 --> 00:30:21,520

Where's Rick and TC, man?

622

00:30:21,520 --> 00:30:23,520

Most importantly, everything is to spec.

623

00:30:23,520 --> 00:30:29,520

These struts are 45 degrees, and the skids are 3 inch diameter tubing, just like a real helicopter.

624

00:30:29,520 --> 00:30:32,520

Now how many times have you watched an action film?

625

00:30:32,520 --> 00:30:35,520

Somebody jump onto a helicopter and climb up as it's taking off.

626

00:30:35,520 --> 00:30:39,520

Now we get to try it. I mean, we're living out our action hero fantasies.

627

00:30:39,520 --> 00:30:42,520

The idea is that we will be suspended over a pool.

628

00:30:42,520 --> 00:30:44,520

Cluster PI ready to take off.

629

00:30:44,520 --> 00:30:48,520

That way, if we fall, we won't fall to our death, we'll just fall in the pool.

630

00:30:48,520 --> 00:30:50,520

We have lift off. We have lift off, yeah.

631

00:30:50,520 --> 00:30:57,520

The goal is to hang on to the skid, pull yourself up and over, and into the cockpit to safety.

632

00:30:57,520 --> 00:31:01,520

Oh, a little turbulence. Hang on everybody, hang on.

633

00:31:01,520 --> 00:31:08,520

But a set of realistic skids on a fake chopper is not the only obstacle the guys will encounter on their climb to safety.

634

00:31:08,520 --> 00:31:13,520

Based on our test with the real helicopter, we know that the downward force at cover is minimal.

635

00:31:13,520 --> 00:31:17,520

But let's face it, this is an action movie. They have to fly away.

636

00:31:17,520 --> 00:31:21,520

How do you simulate flight at a swimming pool? With this.

637

00:31:21,520 --> 00:31:28,520

This is a six foot diameter fan blade connected to a 350 horsepower big block engine.

638

00:31:29,520 --> 00:31:34,520

It's capable of generating wind speeds of up to 95 miles per hour.

639

00:31:34,520 --> 00:31:42,520

That's enough to simulate the cruising speed of our helicopter, and more than enough to test this myth.

640

00:31:42,520 --> 00:31:46,520

Coming up, Adam and Jamie are gunning for Buster.

641

00:31:46,520 --> 00:31:52,520

And our stunt guys and girl give the fall guy myth a leg up.

642

00:31:53,520 --> 00:32:03,520

Mmm, delicious myth Buster's non-trademark slush drink.

643

00:32:03,520 --> 00:32:08,520

Icy, fruity, blue, and potentially lethal, used with caution.

644

00:32:08,520 --> 00:32:10,520

Extreme caution.

645

00:32:10,520 --> 00:32:16,520

Because throwing one from your car at 60 miles per hour does this.

646

00:32:16,520 --> 00:32:20,520

Remember, we do it so you don't have to.

647

00:32:20,520 --> 00:32:26,520

Buster and I hope this provides a lesson in caution to anyone who would mishandle a slush drink.

648

00:32:26,520 --> 00:32:30,520

Not only is the primary damage to the windshield absolutely shocking,

649

00:32:30,520 --> 00:32:35,520

but the secondary damage, the effect of the driver not being able to see through the spider webbing on the windshield,

650

00:32:35,520 --> 00:32:38,520

would very likely cause a really bad accident.

651

00:32:38,520 --> 00:32:41,520

I would not have called that much damage. That is shocking.

652

00:32:41,520 --> 00:32:43,520

It doesn't get much worse.

653

00:32:43,520 --> 00:32:48,520

Well, if your name is Buster, it does get much worse, because they're going again.

654

00:32:48,520 --> 00:32:51,520

This time we made sure our windshield stays firmly in place.

655

00:32:51,520 --> 00:32:56,520

Now, on our last test, the whole windshield collapsed and fell out.

656

00:32:56,520 --> 00:33:00,520

So in a sense, it was absorbing a lot of the shock by doing that.

657

00:33:00,520 --> 00:33:05,520

If we secure the windshield and make sure it stays firmly in place,

658

00:33:05,520 --> 00:33:12,520

what I'm hoping for is that the projectile, when it hits it, will concentrate all its energy in one spot.

659

00:33:12,520 --> 00:33:15,520

And it might just make it all the way through it.

660

00:33:15,520 --> 00:33:18,520

All right, guys, see them up ahead.

661

00:33:19,520 --> 00:33:21,520

I want a bullseye!

662

00:33:22,520 --> 00:33:25,520

Guys, think that was a bullseye!

663

00:33:30,520 --> 00:33:33,520

Time to inspect the road.

664

00:33:34,520 --> 00:33:36,520

Oh, wow!

665

00:33:37,520 --> 00:33:40,520

Look at that! I am blown away.

666

00:33:40,520 --> 00:33:42,520

That is penetration.

667

00:33:42,520 --> 00:33:45,520

Did we trip anything on the guy?

668

00:33:45,520 --> 00:33:47,520

It doesn't look like it.

669

00:33:47,520 --> 00:33:54,520

So despite the promising looking penetration, the windshield once again successfully dissipated the energy of the impact.

670

00:33:54,520 --> 00:33:57,520

Buster got wet, not dead.

671

00:33:57,520 --> 00:34:01,520

It looks to me like the windshield is actually taking a lot of the load into absorbing it.

672

00:34:01,520 --> 00:34:02,520

Yeah.

673

00:34:02,520 --> 00:34:08,520

Liquid makes it through, but it's more of a splash than some kind of a cohesive lump.

674

00:34:08,520 --> 00:34:14,520

Look, I have no doubt that if you took a hit from just the cup hitting you in the head at 120 miles an hour, it would kill you.

675

00:34:14,520 --> 00:34:17,520

I think this windshield is protecting him sufficiently.

676

00:34:17,520 --> 00:34:19,520

I do too.

677

00:34:20,520 --> 00:34:24,520

Well, several destroyed windshields and several delicious slush drinks later,

678

00:34:24,520 --> 00:34:29,520

I'm pretty satisfied that a slush drink does not create a primary lethal hazard on the freeway.

679

00:34:29,520 --> 00:34:32,520

It's not going to penetrate your windshield and kill you.

680

00:34:32,520 --> 00:34:37,520

Make no mistake, though, it creates a very serious set of secondary lethal hazards.

681

00:34:37,520 --> 00:34:40,520

One, it totally obliterates your ability to see through the windshield.

682

00:34:40,520 --> 00:34:43,520

Two, it covers you with sticky slush drink.

683

00:34:43,520 --> 00:34:47,520

Three, strippers of glass are covering the body and your face.

684

00:34:47,520 --> 00:34:51,520

All three of these things would be enough to cause a very, very serious accident.

685

00:34:51,520 --> 00:34:55,520

But as for the slush drink itself being lethal through windshield, I say no.

686

00:34:55,520 --> 00:34:56,520

I say it's busted.

687

00:34:56,520 --> 00:34:59,520

Busted, but the fun's not done.

688

00:35:03,520 --> 00:35:04,520

We have lift off, yeah.

689

00:35:04,520 --> 00:35:09,520

Jesse, Grant and Tori are about to live out their action movie dreams.

690

00:35:09,520 --> 00:35:14,520

They want to know, Alah Hollywood, can you hop into a helicopter?

691

00:35:15,520 --> 00:35:17,520

All right, so this is what I think should happen, guys.

692

00:35:17,520 --> 00:35:21,520

We hang on, but we can't start doing any climbing until we actually hit the airstream.

693

00:35:21,520 --> 00:35:23,520

Well, then the goal here is to climb up onto the skid,

694

00:35:23,520 --> 00:35:26,520

get yourself safely inside the helicopter without falling into the water.

695

00:35:26,520 --> 00:35:27,520

All right, so who goes first?

696

00:35:27,520 --> 00:35:28,520

Not it.

697

00:35:28,520 --> 00:35:29,520

Not it.

698

00:35:29,520 --> 00:35:30,520

I guess I'll go first.

699

00:35:30,520 --> 00:35:32,520

Don't tell her about the promise.

700

00:35:35,520 --> 00:35:37,520

I think I'm going to do just fine.

701

00:35:37,520 --> 00:35:40,520

I've got a good technique and it's going to get me up and over.

702

00:35:40,520 --> 00:35:42,520

It's just those winds that I'm quite curious about.

703

00:35:44,520 --> 00:35:50,520

Yep, and it's those 80 mile an hour winds simulating a helicopter's cruising speed

704

00:35:50,520 --> 00:35:56,520

and the accurate undercarriage and skid structure that gives this test a seal of authenticity.

705

00:35:56,520 --> 00:35:59,520

But none of that stops stunt girl Jesse.

706

00:35:59,520 --> 00:36:08,520

She was slick, quick, and her technique looked like it was straight out of the stunt girl manual.

707

00:36:09,520 --> 00:36:14,520

This is pretty large tubing, so if you have little hands, it's going to be difficult to hang on to

708

00:36:14,520 --> 00:36:17,520

because I could feel myself starting to kind of slide off.

709

00:36:17,520 --> 00:36:21,520

And then once you got into the wind, I was like, the winds are insane.

710

00:36:21,520 --> 00:36:25,520

My ponytail sideways, my pant leg is come undone, my shirt almost flew off.

711

00:36:25,520 --> 00:36:29,520

And then what's standing up on the skid, it's a little bit more difficult than you thought it would be

712

00:36:29,520 --> 00:36:33,520

because you do have those pressing winds, but once you're in, you're in, you're safe.

713

00:36:33,520 --> 00:36:36,520

The key to Jesse's success was speed.

714

00:36:36,520 --> 00:36:41,520

And if you're throwing the fact that this test is all about strength to body weight ratio,

715

00:36:41,520 --> 00:36:45,520

being a lot lighter, she's got a big advantage over the guys.

716

00:36:45,520 --> 00:36:47,520

So will they be able to match her?

717

00:36:47,520 --> 00:36:48,520

All right, you ready?

718

00:36:52,520 --> 00:36:53,520

That was nuts.

719

00:36:53,520 --> 00:36:57,520

I was hanging on to the skid, and as I was going out, I was like, yeah, this is fine.

720

00:36:57,520 --> 00:37:01,520

And then all of a sudden I hit that wind and I was like, I'm not going to make it.

721

00:37:01,520 --> 00:37:03,520

I'm going to fall into the water.

722

00:37:04,520 --> 00:37:06,520

That was crazy.

723

00:37:06,520 --> 00:37:10,520

Crazy? Sure, but also very achievable.

724

00:37:13,520 --> 00:37:18,520

And with Grant scrambling for safety, with just a wardrobe malfunction to worry about,

725

00:37:18,520 --> 00:37:21,520

Get to the top of our glass!

726

00:37:21,520 --> 00:37:26,520

The myth and the boys deluded silver screen dreams are looking good.

727

00:37:26,520 --> 00:37:27,520

Yeah!

728

00:37:28,520 --> 00:37:30,520

Man, he wanted to live!

729

00:37:32,520 --> 00:37:33,520

I'm alive!

730

00:37:34,520 --> 00:37:36,520

I'll make it to the chopper!

731

00:37:36,520 --> 00:37:38,520

You see his shirt come off?

732

00:37:39,520 --> 00:37:42,520

Damn, thank God his pants didn't come off.

733

00:37:45,520 --> 00:37:47,520

Think that action heroes.

734

00:37:47,520 --> 00:37:52,520

That was such a fun test, and it's possible to climb into a helicopter as it's taken off.

735

00:37:52,520 --> 00:37:55,520

Yeah, but it's definitely not as easy as it looks in the action movies.

736

00:37:55,520 --> 00:37:58,520

Well, so far all of these fall guys' myths are looking pretty good.

737

00:37:58,520 --> 00:38:01,520

You know what, I think we did pretty good for a couple of average Joes.

738

00:38:05,520 --> 00:38:07,520

Next in a tense finale.

739

00:38:09,520 --> 00:38:12,520

Adam and Jamie ramp it up with a can cannon.

740

00:38:12,520 --> 00:38:14,520

I call it my little pop gun.

741

00:38:17,520 --> 00:38:22,520

At this point we've seen that while this might make it through a windshield,

742

00:38:22,520 --> 00:38:26,520

if it does, it's not going to hit you hard enough to kill you.

743

00:38:26,520 --> 00:38:29,520

Which begs the question, what would?

744

00:38:29,520 --> 00:38:31,520

That's where this comes in.

745

00:38:31,520 --> 00:38:35,520

Yep, the soda cup of slushy will make a mess of your car.

746

00:38:36,520 --> 00:38:41,520

But smart, modern windshield design will prevent it from killing you directly.

747

00:38:41,520 --> 00:38:44,520

But can a can of soda?

748

00:38:44,520 --> 00:38:46,520

Cue the tense music.

749

00:38:47,520 --> 00:38:51,520

What's this aluminum soda can full of soda going to do when it hits this windshield?

750

00:38:51,520 --> 00:38:54,520

Well, I think we're all in agreement that it's going to go through.

751

00:38:54,520 --> 00:38:56,520

Alright James Franklin, Ironman, are you ready?

752

00:38:56,520 --> 00:38:57,520

I'm ready.

753

00:38:57,520 --> 00:38:59,520

Let's go.

754

00:38:59,520 --> 00:39:02,520

The question is what will it do to Buster?

755

00:39:02,520 --> 00:39:05,520

And I'll tell you, I'd be terrified to have this go through my windshield.

756

00:39:05,520 --> 00:39:08,520

Another long series of things.

757

00:39:08,520 --> 00:39:10,520

What the hell am I doing?

758

00:39:10,520 --> 00:39:12,520

Missing is the short end.

759

00:39:12,520 --> 00:39:15,520

Missing several times.

760

00:39:15,520 --> 00:39:18,520

And even the occasional hit is a mishit.

761

00:39:20,520 --> 00:39:24,520

But nothing, if not persistent, are Yoda's of soda art.

762

00:39:24,520 --> 00:39:27,520

It's all down to this one.

763

00:39:27,520 --> 00:39:30,520

Will I make it? Will I have the accuracy?

764

00:39:30,520 --> 00:39:32,520

Crap, I hope so.

765

00:39:34,520 --> 00:39:37,520

I think I hit it. A powerful hit.

766

00:39:37,520 --> 00:39:39,520

Finally, I hit on the windshield.

767

00:39:39,520 --> 00:39:46,520

But Adam, using the sporting prow as he was born with, as in none, was wayward once again.

768

00:39:46,520 --> 00:39:51,520

I hit in the corner, near the frame, damaged the glass, but didn't threaten Buster.

769

00:39:51,520 --> 00:39:56,520

And with the team running out of windshields, they need a more accurate litter launching method.

770

00:39:56,520 --> 00:40:04,520

Well, it's not a perfectly centered hit, but Damien has, I think, a solution that he says is going to be more accurate than me throwing and hoping.

771

00:40:04,520 --> 00:40:06,520

I can't wait to see what it is.

772

00:40:07,520 --> 00:40:15,520

Back at the shop, while Adam was preparing the windshield rig, it looked and sounded like Jayne was having fun.

773

00:40:19,520 --> 00:40:22,520

Did you hear that? That's the sound of Mr. Heinemann having fun.

774

00:40:22,520 --> 00:40:25,520

It's now clear what he was working on.

775

00:40:26,520 --> 00:40:30,520

And it's a clear case of, don't try this at home.

776

00:40:30,520 --> 00:40:32,520

Pretty simple.

777

00:40:32,520 --> 00:40:40,520

We've got an air tank here, which is a modified fire extinguisher, a fast-acting valve, an elbow, and a tube.

778

00:40:40,520 --> 00:40:46,520

You put the soda in here, you press the switch, out comes the soda.

779

00:40:51,520 --> 00:40:54,520

Wow, I call it my little pop gun.

780

00:40:54,520 --> 00:40:56,520

That is awesome.

781

00:40:56,520 --> 00:40:57,520

Let's give it a shot.

782

00:40:57,520 --> 00:40:58,520

All right.

783

00:40:59,520 --> 00:41:07,520

Yep, in a strange mix of Mad Max and MacGyver, Jayne shoots a buster with a can of soda from a shoulder-mounted air tank.

784

00:41:09,520 --> 00:41:15,520

All in aid of accurately hitting the target, which doesn't happen on the first go.

785

00:41:15,520 --> 00:41:16,520

Ho-ho!

786

00:41:16,520 --> 00:41:19,520

Well, that's a neat hole, but I need to hit the dude.

787

00:41:19,520 --> 00:41:20,520

Yeah, you want to go again?

788

00:41:20,520 --> 00:41:23,520

Again they go, but again, no dice.

789

00:41:24,520 --> 00:41:25,520

A direct hit.

790

00:41:25,520 --> 00:41:27,520

Let's go, didn't hit the dude.

791

00:41:29,520 --> 00:41:38,520

Once again, buster sees soda and shrapnel fly past his ears, and as this is the team's last piece of glass, it's back to basics.

792

00:41:38,520 --> 00:41:43,520

Looks like the only thing left to do is just shoot the sucker point blank.

793

00:41:43,520 --> 00:41:45,520

I'm actually kind of curious how this is going to turn out.

794

00:41:45,520 --> 00:41:47,520

Yeah, me too.

795

00:41:47,520 --> 00:41:52,520

Little pop gun in three, two, one.

796

00:41:55,520 --> 00:41:56,520

Wow!

797

00:41:56,520 --> 00:41:57,520

Wow?

798

00:41:57,520 --> 00:41:59,520

Yeah, not to mention how.

799

00:41:59,520 --> 00:42:00,520

You killed him.

800

00:42:00,520 --> 00:42:03,520

You tripped all the Shot Watch stickers in his chest.

801

00:42:04,520 --> 00:42:05,520

Is this awesome or what?

802

00:42:05,520 --> 00:42:12,520

We tripped all three of Buster's Shot Watch stickers, which tells us something that we often learn at the end of an episode of MythBusters.

803

00:42:12,520 --> 00:42:16,520

Everyday objects can, in fact, be made lethal if Jayme builds a gun to shoot them.

804

00:42:16,520 --> 00:42:26,520

Obviously if somebody makes a cannon and fires a soda at you point blank, like I just did, you're going to die.

805

00:42:26,520 --> 00:42:30,520

But a soda thrown out of another car into your car?

806

00:42:30,520 --> 00:42:34,520

Well, unless you crash the car because of it.

807

00:42:34,520 --> 00:42:36,520

Not so much.

808

00:42:36,520 --> 00:42:38,520

Where does that leave us?

809

00:42:38,520 --> 00:42:41,520

Well, we were able to create a lethal beverage.

810

00:42:41,520 --> 00:42:46,520

Yeah, but it was a can, not a cup, and we did that at point blank range.

811

00:42:46,520 --> 00:42:47,520

Good point.

812

00:42:47,520 --> 00:42:54,520

But I have to say that the Styrofoam cut beverage, while it would do a lot of damage to your windshield, is not, on a primary level, lethal.

813

00:42:54,520 --> 00:42:56,520

That one is totally Buster.

814

00:42:56,520 --> 00:42:57,520

Yeah, it's Buster.

815

00:42:57,520 --> 00:42:58,520

Our work here is done.

816

00:42:58,520 --> 00:42:59,520

Okay.

817

00:43:05,520 --> 00:43:08,520

Nice gun, but you got some accuracy problems.

818

00:43:08,520 --> 00:43:10,520

Yeah, I need to practice.