

1

00:00:00,000 --> 00:00:03,760

attention viewers do not try anything you're about to see at

2

00:00:03,860 --> 00:00:04,300

hope.

3

00:00:04,800 --> 00:00:06,600

We're what you call experts.

4

00:00:08,900 --> 00:00:11,580

On this sticky episode of it's busters.

5

00:00:12,700 --> 00:00:17,440

Relax this one heard a bit the team tackle a trail of duct

6

00:00:17,540 --> 00:00:20,640

tape tall tales fun for the whole family.

7

00:00:21,680 --> 00:00:25,820

First Adam and Jamie strength has the mythical material in

8

00:00:25,920 --> 00:00:30,060

car lift why you ask because secretly always wondered that's

9

00:00:30,160 --> 00:00:30,660

why we're here.

10

00:00:31,060 --> 00:00:35,360

Then they ask can it keep your boat to float going in one that's

11

00:00:35,460 --> 00:00:36,600

already sinking.

12

00:00:36,700 --> 00:00:39,300

They're going to help in the camera crew and one made of

13

00:00:39,400 --> 00:00:44,180

nothing but the tacky tape keep your duct tape from tucks we

14

00:00:44,280 --> 00:00:45,140

got a boat.

15

00:00:45,680 --> 00:00:46,380

Meanwhile.

16

00:00:47,480 --> 00:00:48,840

Harry Brant and Tory.

17

00:00:51,120 --> 00:00:54,880

Find out if he can stretch to sticking a cannon together.

18

00:00:55,820 --> 00:00:56,520

Haha.

19

00:01:01,320 --> 00:01:02,860

Who are the myth busters.

20

00:01:03,620 --> 00:01:07,260

Adam Savage I reject the reality and substitute my own and

21

00:01:07,360 --> 00:01:08,260

Jamie Heineman.

22

00:01:09,560 --> 00:01:13,340

The 30 years of special effects experience.

23

00:01:14,440 --> 00:01:15,100

Joining them.

24

00:01:15,900 --> 00:01:16,640

Kerry Byron.

25

00:01:18,640 --> 00:01:19,740

Grant in the heart.

26

00:01:20,780 --> 00:01:23,340

And Tory Bellachy we're probably probably.

27

00:01:24,140 --> 00:01:26,200

The leaders they don't just tell the myths.

28

00:01:41,940 --> 00:01:45,880

What you got there this is pretty cool it is a wall made

29

00:01:45,980 --> 00:01:48,880

entirely out of duct tape you know I was thinking we could do

30

00:01:48,980 --> 00:01:52,320

an entire segment on duct tape a segment we could do a whole

31

00:01:52,400 --> 00:01:56,760

episode we could do whole season on the mythical properties

32

00:01:56,860 --> 00:01:58,860

of duct tape you know you're right.

33

00:01:59,300 --> 00:02:00,900

Let's do a whole hour on duct tape.

34

00:02:01,640 --> 00:02:02,140

OK.

35

00:02:03,440 --> 00:02:04,440

Recognize this.

36

00:02:04,900 --> 00:02:09,180

A roll of tape and that's just the beginning duct tape supple

37

00:02:09,280 --> 00:02:14,180

vinyl adhesive strength and fabric reinforcement that that

38

00:02:14,280 --> 00:02:18,880

means its versatility knows no bounds one short strip secures

39

00:02:18,940 --> 00:02:23,420

tons of coiled steel which has led to some wild weird and

40

00:02:23,520 --> 00:02:25,180

wacky mythical claims.

41

00:02:27,420 --> 00:02:28,160

What's planned.

42

00:02:28,660 --> 00:02:31,120

Well I'm thinking that the mythical properties of duct

43

00:02:31,220 --> 00:02:34,760

tape generally fall into two categories one is strength I

44

00:02:34,860 --> 00:02:38,840

eat its tensile strength and its adhesion and the other is

45

00:02:38,940 --> 00:02:42,500

that it's so versatile you can do anything at all with it I

46

00:02:42,600 --> 00:02:45,500

say we start by testing its strength mean like lifting a

47

00:02:45,600 --> 00:02:46,340

car with it.

48

00:02:46,740 --> 00:02:47,440

Perfect.

49

00:02:47,640 --> 00:02:48,140

Let's go.

50

00:02:48,600 --> 00:02:51,200

Hold on before we jump right to that why don't we do some

51

00:02:51,300 --> 00:02:54,000

discrete strength tests just to find out what we're in.

52

00:02:56,280 --> 00:02:59,820

So before stretching our miracle mythical material to its

53

00:02:59,920 --> 00:03:01,240

car lifting limits.

54

00:03:01,680 --> 00:03:02,720

Let's start up the crane.

55

00:03:03,080 --> 00:03:06,420

The guys are going to start with a smaller force.

56

00:03:07,660 --> 00:03:12,720

Many people say about duct tape that well it's like the force

57

00:03:13,080 --> 00:03:18,320

it's got a light side and a dark side and it finds the whole

58

00:03:18,420 --> 00:03:19,360

universe together.

59

00:03:21,260 --> 00:03:24,560

Not the universe they'll begin the strength testing by seeing

60

00:03:24,660 --> 00:03:29,300

how much tape it takes to find Adam relax this one hurt a bit.

61

00:03:30,600 --> 00:03:34,900

Channeling his dark side Jamie Dexter Heinemann goes to work

62

00:03:35,000 --> 00:03:36,200

securing his victim.

63

00:03:37,740 --> 00:03:40,080

And he's enjoying it a bit too much.

64

00:03:40,900 --> 00:03:45,600

So this is 20 pieces tape you're holding up to a good it's

65

00:03:45,700 --> 00:03:47,440

actually strangely comforting.

66

00:03:47,740 --> 00:03:49,340

It feels like a really nice blank.

67

00:03:49,580 --> 00:03:50,680

All right let's do it.

68

00:03:56,420 --> 00:04:01,860

This school it's like I am the plywood so far you're not going

69

00:04:01,960 --> 00:04:02,260

anywhere.

70

00:04:02,360 --> 00:04:04,560

No I'm not going anywhere although I tell you I feel

71

00:04:04,660 --> 00:04:06,560

myself settling in here quite.

72

00:04:06,860 --> 00:04:08,620

Well.

73

00:04:09,120 --> 00:04:10,520

Well really I'm almost wait.

74

00:04:12,160 --> 00:04:15,160

Perhaps I should point towards the man I just suggested.

75

00:04:16,300 --> 00:04:17,100

There we go.

76

00:04:17,800 --> 00:04:19,300

Oh whoa.

77

00:04:19,440 --> 00:04:19,940

Hey.

78

00:04:22,540 --> 00:04:24,140

That was just a rigging settling right.

79

00:04:26,280 --> 00:04:27,940

Dude this is actually quite comfortable.

80

00:04:28,440 --> 00:04:31,220

Who rolls the tape equals a whole afternoon of fun.

81

00:04:32,620 --> 00:04:33,920

But for the whole family.

82

00:04:34,920 --> 00:04:38,740

Of course it goes without saying but we're going to anyway.

83

00:04:38,840 --> 00:04:40,720

Please don't try this at home.

84

00:04:40,820 --> 00:04:44,020

Adam and Jamie are trained duct tape strength test

85

00:04:44,120 --> 00:04:45,020

professionals.

86

00:04:45,120 --> 00:04:48,160

Unless you think that I am foolhardy or reckless for

87

00:04:48,260 --> 00:04:51,100

allowing my 180 pounds to be held up by two rolls of duct

88

00:04:51,200 --> 00:04:51,760

tape.

89

00:04:51,860 --> 00:04:54,760

This is actually quite a safe system I feel quite comfortable.

90

00:04:54,860 --> 00:04:58,100

It's a distributed system which means it has many points of

91

00:04:58,200 --> 00:05:01,300

failure a lot of redundancy built in by all the different

92

00:05:01,400 --> 00:05:02,900

pieces of duct tape stuck to the plywood.

93

00:05:02,920 --> 00:05:05,060

So I can hang out here all day.

94

00:05:09,160 --> 00:05:10,900

Well Adams hang it around.

95

00:05:11,000 --> 00:05:15,240

Carrie Grant and Tory are about to go ballistic hit me.

96

00:05:17,240 --> 00:05:19,380

So what's the man you've heard of a potato cannon right.

97

00:05:19,480 --> 00:05:23,180

Yeah you take a bunch of PVC pipe glued together seal off one

98

00:05:23,280 --> 00:05:27,080

in at some propellant at a potato ignite the propellant and

99

00:05:27,180 --> 00:05:30,960

bang you're launching potatoes exactly as most teenagers and

100

00:05:31,020 --> 00:05:33,380

Internet anarchists know you usually use a cement seal the

101

00:05:33,480 --> 00:05:37,320

PVC piping but there's a just as reliable much quicker way

102

00:05:37,420 --> 00:05:40,800

using duct tape apparently duct tape is strong enough to

103

00:05:40,900 --> 00:05:42,860

withstand the forces of the potato cannon.

104

00:05:42,960 --> 00:05:46,160

All right sounds easy enough so we make two cannons one the

105

00:05:46,260 --> 00:05:48,900

traditional way and one with duct tape and see how they

106

00:05:49,000 --> 00:05:49,400

compare.

107

00:05:50,900 --> 00:05:54,680

If used responsibly potato cannons are fun for the whole

108

00:05:54,780 --> 00:05:55,380

family.

109

00:05:56,340 --> 00:06:00,240

Add here's how they work a series of PVC piping is glued

110

00:06:00,260 --> 00:06:02,260

together with PVC cement.

111

00:06:03,100 --> 00:06:05,140

Potato is pushed into the barrel.

112

00:06:05,640 --> 00:06:09,200

The point is squirted into the combustion chamber ignite that

113

00:06:09,300 --> 00:06:12,380

propellant with a spark and just like a real cat the

114

00:06:12,480 --> 00:06:13,340

projectiles.

115

00:06:14,880 --> 00:06:18,180

But the team want to know can you really replace the PVC

116

00:06:18,280 --> 00:06:20,520

cement with plain old duct tape.

117

00:06:21,620 --> 00:06:24,020

Now this may look like a pretty random bunch of materials I

118

00:06:24,120 --> 00:06:27,520

have here I mean we're talking piping duct tape potatoes but

119

00:06:27,540 --> 00:06:30,580

to me this looks like the glorious beginnings of a good

120

00:06:30,680 --> 00:06:32,880

old fashioned potato cannon.

121

00:06:33,280 --> 00:06:35,920

That's exactly what I'm going to build basically a potato

122

00:06:36,020 --> 00:06:38,620

can and is like any can and you have an explosion happening

123

00:06:38,720 --> 00:06:39,720

in the combustion chamber.

124

00:06:40,020 --> 00:06:42,360

Okay that is my combustion chamber held together with

125

00:06:42,460 --> 00:06:43,060

duct tape.

126

00:06:43,660 --> 00:06:46,500

Gases are expanding and they need to escape so they look for

127

00:06:46,600 --> 00:06:47,800

the path of least resistance.

128

00:06:49,240 --> 00:06:51,400

Now that should be the potato that's why the potato

129

00:06:51,500 --> 00:06:53,840

launches across the field.

130

00:06:53,840 --> 00:07:03,300

And the big question is can the duct tape hold up as well as

131

00:07:03,400 --> 00:07:05,940

the actual cement that you use to put these pipes together.

132

00:07:06,040 --> 00:07:09,280

So with the cannons complete the team makes its way to its

133

00:07:09,380 --> 00:07:11,080

detonation destination.

134

00:07:12,680 --> 00:07:15,020

So we got us some potato cannons and we can't fire them in

135

00:07:15,120 --> 00:07:17,220

the shop so we've come to the Alameda run where we have a

136

00:07:17,320 --> 00:07:20,720

big sprints of space right here we can shoot off into the

137

00:07:20,720 --> 00:07:23,980

distance and explore whether duct tape is as strong as a

138

00:07:24,080 --> 00:07:26,280

traditional glue that holds together a potato can.

139

00:07:26,880 --> 00:07:29,120

He's just relaxing on the court shooting off his potato

140

00:07:29,220 --> 00:07:29,420

gun.

141

00:07:30,460 --> 00:07:31,520

Trying to hit San Francisco.

142

00:07:31,620 --> 00:07:31,920

Yeah.

143

00:07:32,720 --> 00:07:34,420

Ladies and gentlemen boys and girls let me introduce you to

144

00:07:34,520 --> 00:07:38,000

the latest items in the Kerry Byron line of home destruction.

145

00:07:38,100 --> 00:07:41,360

This is a spud trucker made entirely out of PVC tubing with

146

00:07:41,460 --> 00:07:44,740

actual PVC glue and this is the duct tape tater toaster but

147

00:07:44,840 --> 00:07:46,900

this has duct tape fastening.

148

00:07:47,200 --> 00:07:49,800

This is a set up for a control test to have Buster in the

149

00:07:49,860 --> 00:07:51,120

chair and loader up.

150

00:07:51,820 --> 00:07:53,920

We've got a skill to tell us how fast potatoes come out of the

151

00:07:54,020 --> 00:07:57,160

barrel and just for laps we'll be measuring exactly how far

152

00:07:57,260 --> 00:07:57,860

they go.

153

00:07:57,960 --> 00:08:01,800

This is going to be great ready with a couple of squirts of the

154

00:08:01,900 --> 00:08:06,200

classified propellant the control cannon is good to blow.

155

00:08:06,400 --> 00:08:07,200

All right light it up.

156

00:08:09,000 --> 00:08:16,280

Okay we got the spud checker aka Spudzuka in 3 2 1.

157

00:08:19,800 --> 00:08:21,600

All right should we go see how far that potato went.

158

00:08:27,600 --> 00:08:28,400

Where's splash on.

159

00:08:28,600 --> 00:08:32,200

All right what do we get 267 feet as pretty good.

160

00:08:32,700 --> 00:08:36,600

Pretty good sure but they want a pretty good data set.

161

00:08:37,600 --> 00:08:40,240

And for that they'll need multiple shots.

162

00:08:41,520 --> 00:08:44,420

397 and more bad pun.

163

00:08:44,520 --> 00:08:46,480

All right in the next but Nick.

164

00:08:47,480 --> 00:08:50,880

Yeah before they get the all important distance average.

165

00:08:51,880 --> 00:08:52,980

In 75.

166

00:08:53,780 --> 00:08:56,680

So the potato can is working great we got some good

167

00:08:56,780 --> 00:08:57,380

distances.

168

00:08:57,480 --> 00:09:01,980

Yeah, we got an average range of 346 feet speed of 179 miles

169

00:09:02,080 --> 00:09:02,480

per hour.

170

00:09:02,580 --> 00:09:04,880

So next step duct tape tater toaster.

171

00:09:04,980 --> 00:09:07,580

I have a true test here is will the duct tape hold up.

172

00:09:07,780 --> 00:09:09,680

This could be explosive.

173

00:09:10,680 --> 00:09:14,380

So can duct tape contain an explosion capable of sending a

174

00:09:14,380 --> 00:09:19,180

spud over 300 feet at a speed of 179 miles an hour.

175

00:09:20,380 --> 00:09:21,380

All right let's do it.

176

00:09:21,980 --> 00:09:26,080

Surely it's too much to ask of this humble yet highly versatile

177

00:09:26,180 --> 00:09:26,880

material.

178

00:09:27,080 --> 00:09:32,480

That tape tater toaster in 3 2 1.

179

00:09:35,580 --> 00:09:37,780

It worked the duct tape held together.

180

00:09:37,880 --> 00:09:38,980

Yeah didn't explode.

181

00:09:39,380 --> 00:09:42,780

Not only did it not explode the first shot from the duct tape

182

00:09:42,780 --> 00:09:44,980

tater toaster was right in the slot.

183

00:09:47,180 --> 00:09:50,180

387 that is right in the range.

184

00:09:51,580 --> 00:09:52,780

And it didn't blow up.

185

00:09:55,280 --> 00:09:57,780

Just to make sure I think we might have to fire maybe a few

186

00:09:57,880 --> 00:10:01,680

more off right right because although they know it works.

187

00:10:03,980 --> 00:10:07,780

The question is does it match the regular cannons reliability.

188

00:10:09,980 --> 00:10:11,180

Get away from our test.

189

00:10:11,280 --> 00:10:12,280

It's not sample.

190

00:10:13,580 --> 00:10:17,380

Now to you it may look like a sea of cones but to me it's data

191

00:10:17,480 --> 00:10:19,180

not only that it's consistent data.

192

00:10:19,280 --> 00:10:22,780

Let me lay it on our spud chucker held together by PVC cement

193

00:10:22,980 --> 00:10:26,980

had an average range of 346 feet and an average speed of

194

00:10:27,080 --> 00:10:28,680

179 miles per hour.

195

00:10:29,080 --> 00:10:32,080

Our duct tape tater toaster which is a potato cannon held

196

00:10:32,180 --> 00:10:36,480

together entirely by duct tape at an average range of 336

197

00:10:36,580 --> 00:10:39,580

feet and an average speed of 160 miles per hour.

198

00:10:39,880 --> 00:10:43,480

That's a difference of 3% on the range and 11% on the speed

199

00:10:43,780 --> 00:10:46,780

now given varying wins differences in the masses of the

200

00:10:46,880 --> 00:10:50,580

potatoes and difference amounts of propellant I'd say that's

201

00:10:50,680 --> 00:10:52,780

enough to call their performance identical.

202

00:10:55,480 --> 00:10:59,580

After the break we try to pick up a 5,000 pound car with

203

00:10:59,680 --> 00:11:03,580

duct tape and then they do you got some on your face carry

204

00:11:03,680 --> 00:11:07,180

grantant or a get down and dirty strengths testing duct

205

00:11:07,280 --> 00:11:08,780

tape with black powder.

206

00:11:09,980 --> 00:11:10,580

I'm not sure.

207

00:11:16,380 --> 00:11:19,080

The tape was originally invented by the army and I used it

208

00:11:19,180 --> 00:11:22,580

to seal up ammo cases and they called it duct tape you know

209

00:11:23,780 --> 00:11:27,480

crack damn you because it would repel water later on they

210

00:11:27,580 --> 00:11:30,180

started to use it for heating and air conditioning events

211

00:11:30,280 --> 00:11:33,780

things like that because they would seal it up but basically

212

00:11:33,880 --> 00:11:37,280

the formulation is the same it's a plastic coating on the

213

00:11:37,280 --> 00:11:41,380

outside to seal things up it has a fabric structure that

214

00:11:41,480 --> 00:11:44,580

gives it its strength and it has a natural rubber adhesive

215

00:11:44,680 --> 00:11:46,680

on the inside so it sticks to stuff.

216

00:11:47,780 --> 00:11:51,280

And it's that combination of strength and stickiness that

217

00:11:51,380 --> 00:11:54,980

has led to the first myth can it suspend a car.

218

00:11:57,580 --> 00:12:00,980

To find out Adam and Jamie are weighing in with some strip

219

00:12:01,080 --> 00:12:03,980

by strip numbers we need to find out how much a single

220

00:12:03,980 --> 00:12:06,980

length of tape will support in terms of weight so we can

221

00:12:07,080 --> 00:12:10,180

determine how many we need to lift the car. Now this is our

222

00:12:10,280 --> 00:12:13,280

tape testing rate we've got one end of the tape goes on a bar

223

00:12:13,380 --> 00:12:16,480

on the forklift the other end of the tape goes on this flat

224

00:12:16,580 --> 00:12:19,780

metal surface and we keep adding barbell weights until the

225

00:12:19,880 --> 00:12:20,480

tape breaks.

226

00:12:31,280 --> 00:12:33,880

Wow we figured out pretty much the exact weight threshold

227

00:12:33,980 --> 00:12:37,480

on the first try. Yep I'd say about 70 pounds for a one time

228

00:12:37,580 --> 00:12:37,880

lift.

229

00:12:38,880 --> 00:12:42,580

So all they need now is some wide open space and a car they

230

00:12:42,680 --> 00:12:43,780

don't mind dropping.

231

00:12:59,580 --> 00:13:01,380

Let's get started. Okay.

232

00:13:02,180 --> 00:13:03,480

It'll be a simple setup.

233

00:13:04,980 --> 00:13:10,980

A crane like this one and a hook shackle and single crossbar.

234

00:13:11,080 --> 00:13:13,480

This thing right here is what we're going to attach the tape

235

00:13:13,580 --> 00:13:13,780

to.

236

00:13:14,980 --> 00:13:18,480

And hanging from the other end of the myth inspiring sticky

237

00:13:18,580 --> 00:13:19,980

stuff will be the car.

238

00:13:20,680 --> 00:13:24,280

The car weighs about 5000 pounds now each strip of tape will

239

00:13:24,380 --> 00:13:25,780

hold about 70 pounds.

240

00:13:26,480 --> 00:13:30,180

That means we get away with lifting the car with around 80

241

00:13:30,280 --> 00:13:33,380

strips of tape I think we'll call it a hundred just be safe.

242

00:13:33,780 --> 00:13:37,880

Jamie this is your conscience it's time to start working.

243

00:13:42,180 --> 00:13:43,980

There are a lot of different things you can do with duct tape

244

00:13:44,280 --> 00:13:46,780

you can bind things together you can seal things up like ducks

245

00:13:46,880 --> 00:13:50,180

and so on but what we're looking for here is how sticky it

246

00:13:50,280 --> 00:13:50,580

is.

247

00:13:53,680 --> 00:13:57,280

If we do our job right and we actually are able to lift the

248

00:13:57,380 --> 00:14:00,880

car off the ground that cloth and the tape is going to give

249

00:14:00,980 --> 00:14:02,580

away before the adhesive does.

250

00:14:03,180 --> 00:14:05,480

It's like a cathedral of that.

251

00:14:06,780 --> 00:14:08,980

That makes sense mean duct tape is almost a religion with some

252

00:14:09,080 --> 00:14:09,480

people.

253

00:14:11,080 --> 00:14:14,680

Why you ask because secretly you've always wondered and

254

00:14:14,780 --> 00:14:15,480

that's why we're here.

255

00:14:17,280 --> 00:14:21,480

We've used 99 separate strands. All right here it is last one

256

00:14:22,180 --> 00:14:25,780

just a 5 and a half rolls of duct tape and by our measurement

257

00:14:25,880 --> 00:14:29,080

this ought to be just enough to lift this car.

258

00:14:29,680 --> 00:14:32,180

I think it's going to let's get it off the ground.

259

00:14:32,580 --> 00:14:33,680

Let's start up the crane.

260

00:14:35,080 --> 00:14:37,180

The crane winch cranks into action.

261

00:14:37,580 --> 00:14:41,980

This is it and millimeter by millimeter it gently pulls the

262

00:14:42,080 --> 00:14:43,580

car skyward.

263

00:14:43,980 --> 00:14:45,980

Okay I can see it's starting to come up.

264

00:14:47,780 --> 00:14:50,680

It's got very loose relationship with the ground right now.

265

00:14:50,980 --> 00:14:52,480

It's almost painful to watch.

266

00:14:56,980 --> 00:14:59,780

So it looks like duct tape can be used to seal a potato cannon.

267

00:14:59,880 --> 00:15:00,980

Yeah that's got me thinking.

268

00:15:00,980 --> 00:15:02,180

Ooh that's got me worried.

269

00:15:02,280 --> 00:15:04,880

It should because I'm thinking that you make an entire

270

00:15:04,980 --> 00:15:06,980

cannon out of duct tape.

271

00:15:07,080 --> 00:15:09,280

Wait a minute you're talking about a genuine black powder

272

00:15:09,380 --> 00:15:12,480

cannon firing real cannonballs out of nothing but duct tape.

273

00:15:12,580 --> 00:15:14,980

Yes Kerry you should start thinking more often.

274

00:15:15,080 --> 00:15:18,380

I know we're mythbusters we have to ramp it up.

275

00:15:18,480 --> 00:15:21,480

Okay hang on a second you guys inside of a real cannon the

276

00:15:21,580 --> 00:15:24,080

pressures are significantly higher than inside a potato

277

00:15:24,180 --> 00:15:24,480

cannon.

278

00:15:24,580 --> 00:15:26,580

Well maybe we should find out if duct tape is even strong

279

00:15:26,680 --> 00:15:26,980

enough.

280

00:15:27,080 --> 00:15:29,580

We'll take a steel pipe seal off one end with nothing but

281

00:15:29,580 --> 00:15:32,180

duct tape load it like a cannon fire it and see if it

282

00:15:32,280 --> 00:15:34,980

withstands the forces and we'll start with one inch thick

283

00:15:35,080 --> 00:15:37,580

then we'll go to two three four inches until we find out the

284

00:15:37,680 --> 00:15:39,380

thickness that it needs to be to hold up.

285

00:15:39,980 --> 00:15:44,180

A cannon a regular one works a bit like this the black powder

286

00:15:44,280 --> 00:15:47,980

explodes in the combustion chamber and the expanding gases

287

00:15:48,080 --> 00:15:50,180

throw the cannonball along the barrel.

288

00:15:50,980 --> 00:15:54,580

So first up to find out how much duct tape is required to

289

00:15:54,680 --> 00:15:57,780

withstand those pressures the guys are going to replace the

290

00:15:57,780 --> 00:16:01,480

back end of the combustion chamber with inch thick tiles of

291

00:16:01,580 --> 00:16:01,980

tape.

292

00:16:03,480 --> 00:16:04,780

However many it takes.

293

00:16:08,380 --> 00:16:11,080

I see injuries in my future so it's time for me to whip out

294

00:16:11,180 --> 00:16:14,080

my can and now let's just say a new few things about building

295

00:16:14,180 --> 00:16:14,380

can.

296

00:16:15,480 --> 00:16:18,680

However this time we're building it out of nothing but duct

297

00:16:18,780 --> 00:16:21,180

tape now duct tape is strong but is it going to be strong

298

00:16:21,280 --> 00:16:24,080

enough to withstand the kind of forces that are exerted by

299

00:16:24,080 --> 00:16:27,780

exploding black powder so I need to make a strength cage.

300

00:16:30,080 --> 00:16:32,580

That way we can put the duct tape under the same conditions

301

00:16:32,680 --> 00:16:35,680

that a can it would be under so we could test the limits of

302

00:16:35,780 --> 00:16:39,080

this duct tape. I mean black powder and duct tape doesn't

303

00:16:39,180 --> 00:16:41,680

sound like science. That's not like a family reunion.

304

00:16:43,380 --> 00:16:47,180

So this is the strength part of our strength games flash frame

305

00:16:47,280 --> 00:16:50,980

I've cut out for layering duct tape going to make a one inch

306

00:16:50,980 --> 00:16:54,280

thick sheet that I'll then cut down into one foot by one foot

307

00:16:54,380 --> 00:16:55,280

square tile.

308

00:16:55,680 --> 00:16:58,580

They're going to bolt up the back what Tori's making and we

309

00:16:58,680 --> 00:17:02,180

ignite our black powder will find out how much duct tape it

310

00:17:02,280 --> 00:17:02,580

does.

311

00:17:05,580 --> 00:17:07,980

So that is one inch thick.

312

00:17:09,980 --> 00:17:12,380

All right, let's cut it up in the tiles.

313

00:17:13,680 --> 00:17:19,280

We've used 37 rolls 60 yards roll that's 2,220 yards of

314

00:17:20,280 --> 00:17:21,680

they did you got some on your face.

315

00:17:22,280 --> 00:17:25,880

That's one and a quarter miles make all the tiles we need for

316

00:17:25,980 --> 00:17:26,880

strength test.

317

00:17:27,380 --> 00:17:31,080

So with the duct tape tiles and strength gauge complete it's

318

00:17:31,180 --> 00:17:33,780

off to a familiar and favorite location.

319

00:17:34,880 --> 00:17:37,480

We've come here to the bomb are favorite place to test the

320

00:17:37,580 --> 00:17:40,980

safe way so that nobody gets hurt straight cage, it's not a

321

00:17:41,080 --> 00:17:44,680

kid and if you're wondering exactly why it's not a cannon.

322

00:17:44,880 --> 00:17:48,680

Here's the man with the can strength game first we're not

323

00:17:48,680 --> 00:17:52,280

using a cannonball we're using a piston it's the same diameter

324

00:17:52,380 --> 00:17:54,380

and weight is a cannonball but it's not a cannonball.

325

00:17:55,080 --> 00:17:58,280

You may got a duct tape second we're not using a fuse we're

326

00:17:58,380 --> 00:18:01,980

using an electric remote system to light off the gunpowder

327

00:18:02,080 --> 00:18:06,480

and most importantly there is no steel back at the end of this

328

00:18:06,580 --> 00:18:10,180

steel to it's going to be a duct tape panel once we load this

329

00:18:10,280 --> 00:18:13,380

up and fired off what we're looking for is the piston to fly

330

00:18:13,480 --> 00:18:17,580

out of the barrel and have the duct tape intact if that happens

331

00:18:17,780 --> 00:18:20,380

then we know duct tape is strong enough to build a cannon out

332

00:18:20,980 --> 00:18:23,680

you know after looking at how thick that one inch duct tape

333

00:18:23,780 --> 00:18:26,580

panel is I'm thinking one panel is going to be enough really

334

00:18:26,680 --> 00:18:29,280

just one I think it's going to take at least to I would bet on

335

00:18:29,380 --> 00:18:31,280

to I think it's going to take at least 3.

336

00:18:31,580 --> 00:18:34,580

All right put your money where your mouth is I got 5 bucks I

337

00:18:34,680 --> 00:18:37,380

got 5. Okay so who holds the money.

338

00:18:38,580 --> 00:18:39,080

Camera.

339

00:18:42,180 --> 00:18:45,080

All right we're hooked in for this to be a good successful test

340

00:18:45,080 --> 00:18:47,980

what we're looking for is that the duct tape tiles whatever

341

00:18:48,080 --> 00:18:52,480

thickness we end up with will be intact while the piston blows

342

00:18:52,580 --> 00:18:56,780

out the other end of the strength. Okay so this is one inch thick

343

00:18:56,880 --> 00:18:59,580

slab of duct tape in the strength gauge.

344

00:18:59,880 --> 00:19:06,080

This is your chance at \$15. All right here we go in 3, 2, 1.

345

00:19:10,080 --> 00:19:12,080

Pay up suckers. Wow.

346

00:19:12,080 --> 00:19:14,780

Wait wait let's survey the damage first I want to make sure it

347

00:19:14,880 --> 00:19:15,480

held up.

348

00:19:19,080 --> 00:19:22,080

Incredibly it seems to have worked first time out.

349

00:19:24,580 --> 00:19:27,080

And it's disbelief all around.

350

00:19:27,380 --> 00:19:30,780

There's no way this test works on the first go there's no way.

351

00:19:35,080 --> 00:19:37,880

A one inch thick slab of duct tape was enough to withstand the

352

00:19:37,980 --> 00:19:40,380

kind of force to launch a cannonball.

353

00:19:43,080 --> 00:19:47,580

It's perfect man. It burned the heck out of it but didn't blow out.

354

00:19:47,680 --> 00:19:50,780

That's beautiful. It just burnt off the wax paper too it didn't

355

00:19:50,880 --> 00:19:52,780

even go through the first layer of duct tape.

356

00:19:53,180 --> 00:19:55,080

This stuff is incredible.

357

00:19:55,280 --> 00:19:57,880

We got a great result from the duct tape strength test it looks

358

00:19:57,980 --> 00:20:00,480

like duct tape is going to be strong enough to build a cannon

359

00:20:00,580 --> 00:20:02,880

out of it. Now all we need to do is build a cannon.

360

00:20:02,980 --> 00:20:05,880

You know what the best part of this experiment was? I won the

361

00:20:05,980 --> 00:20:09,380

bet. Give me my money punk. Give me that.

362

00:20:10,380 --> 00:20:13,380

Coming up on that busters will duct tape repair your boat if

363

00:20:13,480 --> 00:20:14,180

it's got a hole.

364

00:20:22,680 --> 00:20:26,180

Oh come on baby Adam and Jamie are attempting to lift a car

365

00:20:26,280 --> 00:20:30,780

with just 99 strips of duct tape and they're close.

366

00:20:31,580 --> 00:20:32,580

Real close.

367

00:20:32,880 --> 00:20:33,980

It's got one wheel.

368

00:20:38,880 --> 00:20:40,080

That's kind of nuts.

369

00:20:41,380 --> 00:20:44,680

Why you need to do this I don't know but it's cool. It's

370

00:20:44,780 --> 00:20:45,280

holding.

371

00:20:46,580 --> 00:20:50,380

It's holding and with a flight time of a minute and counting

372

00:20:50,580 --> 00:20:54,780

the result is clear leaving just one remaining question.

373

00:20:54,880 --> 00:20:57,880

It's only a matter of time before it comes crashing down.

374

00:20:58,180 --> 00:21:00,180

It'll be just like a zipper opening up.

375

00:21:00,680 --> 00:21:03,380

Yeah as with all flights off the ground taking off his

376

00:21:03,480 --> 00:21:05,280

optional landing is mandatory.

377

00:21:07,680 --> 00:21:08,480

First one went.

378

00:21:09,880 --> 00:21:12,280

That's two strips of tape that are gone now.

379

00:21:23,680 --> 00:21:25,180

Exactly like a zipper.

380

00:21:26,680 --> 00:21:29,980

Plus just like Jamie suggested wasn't the adhesive that

381

00:21:29,980 --> 00:21:33,080

gave way but the tape itself. Wow.

382

00:21:34,080 --> 00:21:36,880

I love how consistently it broke all the way along that

383

00:21:36,980 --> 00:21:37,580

sharp point.

384

00:21:37,980 --> 00:21:42,380

Yeah I don't see a single piece of tape that lost its adhesion

385

00:21:42,480 --> 00:21:44,380

they all ripped right in the middle of the tape.

386

00:21:44,480 --> 00:21:44,980

It's true.

387

00:21:49,980 --> 00:21:52,880

Yet again tools and materials used in ways for which they

388

00:21:52,980 --> 00:21:53,980

were never intended.

389

00:21:54,680 --> 00:21:55,880

In the case of duct tape.

390

00:21:56,480 --> 00:21:59,280

If you've got enough of it you can move the world.

391

00:22:00,480 --> 00:22:01,780

Not a bad way to spend the afternoon.

392

00:22:03,480 --> 00:22:06,480

What's next this is a good one for you captain have you ever

393

00:22:06,580 --> 00:22:10,080

had to use duct tape to fix a leak in a boat.

394

00:22:10,680 --> 00:22:11,680

My boats don't leak.

395

00:22:11,980 --> 00:22:14,580

Okay well just imagine you're out on the open seas your

396

00:22:14,680 --> 00:22:17,180

boats got a leak in it and this is the only thing you've got

397

00:22:17,280 --> 00:22:21,580

to repair it will it do the job waterproofing adhesion

398

00:22:22,080 --> 00:22:23,280

sounds like a good test.

399

00:22:23,480 --> 00:22:24,080

I thought so.

400

00:22:25,180 --> 00:22:29,180

And so our two myth busters want an optimist gorgeous day

401

00:22:29,280 --> 00:22:33,480

for a boat ride and what a pessimist are sinking about

402

00:22:34,380 --> 00:22:38,280

arrive on the shores of Frisco Bay ready to set this myth

403

00:22:38,380 --> 00:22:38,980

and drift.

404

00:22:39,080 --> 00:22:41,380

Well if we're going to repair a hole in a boat with duct tape

405

00:22:41,480 --> 00:22:43,580

then obviously we're going to be a boat with a hole in it.

406

00:22:43,880 --> 00:22:48,180

We've got a boat doesn't yet have a hole but I'm about to

407

00:22:48,280 --> 00:22:48,980

remedy that.

408

00:22:49,080 --> 00:23:00,080

It's a sizable hole in the hull but confidence in the sticky

409

00:23:00,180 --> 00:23:02,080

cure is still high and dry.

410

00:23:02,180 --> 00:23:04,580

This is a no brainer the tape is going to hold just fine

411

00:23:04,680 --> 00:23:07,980

under these conditions this size hole we could sail all day.

412

00:23:09,080 --> 00:23:13,180

However Jamie glass half empty Heinemann is prepared for the

413

00:23:13,280 --> 00:23:15,880

worst going to get in a leaky boat need to remember a couple

414

00:23:15,980 --> 00:23:17,980

things the first one is a life preserver.

415

00:23:18,180 --> 00:23:21,180

All right let's put this puppy on the water and the second one

416

00:23:21,280 --> 00:23:24,980

is something to bail with like a bleach bottle or something

417

00:23:25,080 --> 00:23:25,580

like that.

418

00:23:28,780 --> 00:23:30,180

Go all right.

419

00:23:30,780 --> 00:23:34,980

I'll step in okay well it floats it successfully supports

420

00:23:35,980 --> 00:23:36,780

on this bus.

421

00:23:38,580 --> 00:23:40,980

It's faster I don't see any water.

422

00:23:41,980 --> 00:23:43,280

That's always good sign.

423

00:23:44,280 --> 00:23:48,980

And the dingy with its duct tape patch is looking good to

424

00:23:49,080 --> 00:23:49,480

roll.

425

00:23:54,780 --> 00:23:57,480

Plus it's also standing the test of time.

426

00:23:58,880 --> 00:24:00,180

Should have brought my fishing pole.

427

00:24:01,480 --> 00:24:04,180

Properly applied the duct tape actually seems to be doing

428

00:24:04,280 --> 00:24:07,880

fairly well I have to say though I wouldn't take off across

429

00:24:07,980 --> 00:24:11,680

the ocean with that kind of patch it works but it scares me

430

00:24:11,780 --> 00:24:12,280

a little bit.

431

00:24:13,280 --> 00:24:16,780

And with good reason because at the 30 minute mark was that

432

00:24:16,880 --> 00:24:20,080

water coming in from there's a hint that the duct tape isn't

433

00:24:20,180 --> 00:24:21,680

a permanent solution.

434

00:24:21,980 --> 00:24:23,080

Pulling in the bottom there.

435

00:24:23,680 --> 00:24:25,180

That's kind of a bad sign.

436

00:24:25,980 --> 00:24:29,180

It clearly works I mean we're still a float but I'm not too

437

00:24:29,280 --> 00:24:31,480

happy with it because we're going to have to start bailing

438

00:24:31,580 --> 00:24:34,480

before long I would say that it's not waterproof but it's

439

00:24:34,580 --> 00:24:36,180

absolutely water resistant.

440

00:24:36,480 --> 00:24:40,580

I'll buy that it's a testament to the tape that after 40 minutes

441

00:24:40,580 --> 00:24:42,480

there's still a flow just a little wet.

442

00:24:42,980 --> 00:24:45,480

But Adam has a tougher assignment in mind.

443

00:24:45,880 --> 00:24:48,080

I think a duck tape patches holding up pretty well but

444

00:24:48,180 --> 00:24:49,780

honestly when I think.

445

00:24:50,480 --> 00:24:51,380

But repair.

446

00:24:52,480 --> 00:24:54,880

I don't think of her in the boat on the dock and then putting

447

00:24:54,980 --> 00:24:56,680

in you're going to do it on the dock you're going to have all

448

00:24:56,780 --> 00:24:57,680

the materials you need.

449

00:24:57,980 --> 00:25:01,480

That means you're in an emergency situation I would like

450

00:25:01,580 --> 00:25:04,180

to create that emergency situation.

451

00:25:05,280 --> 00:25:08,380

You want to get wet I do the patch waters pouring through

452

00:25:08,380 --> 00:25:11,580

the hole duct tape the only thing we got we got to fix that

453

00:25:11,680 --> 00:25:11,980

hole.

454

00:25:13,980 --> 00:25:15,480

The waters cold yeah.

455

00:25:17,380 --> 00:25:18,180

There we go.

456

00:25:20,580 --> 00:25:22,780

That's a bonafide emergency we got going on there.

457

00:25:23,180 --> 00:25:25,880

I'll start making a patch you start making a patch like the

458

00:25:25,980 --> 00:25:30,080

little boy and the Dyke Adam is plugging the whole digitally.

459

00:25:32,180 --> 00:25:35,080

While Jamie goes to work with the mythical material.

460

00:25:35,880 --> 00:25:38,580

If you have to apply duct tape underwater you're going to have

461

00:25:38,680 --> 00:25:41,780

a hard time because the water forms of film that inhibits

462

00:25:41,880 --> 00:25:44,480

the adhesive really connecting with the surface you're trying

463

00:25:44,580 --> 00:25:45,280

to put it on.

464

00:25:45,480 --> 00:25:45,680

All right.

465

00:25:45,780 --> 00:25:46,780

Going in ready.

466

00:25:46,980 --> 00:25:47,380

Okay.

467

00:25:48,580 --> 00:25:52,080

It's really frustrating it's just like the adhesive is not

468

00:25:52,180 --> 00:25:52,580

there.

469

00:25:53,080 --> 00:25:55,180

I'm surprised it's not sticking very well.

470

00:25:55,880 --> 00:25:57,280

But it is sticking a little bit.

471

00:25:57,680 --> 00:25:57,880

All right.

472

00:25:57,980 --> 00:25:58,680

Take your foot off.

473

00:25:59,680 --> 00:26:02,280

I think we start the clock and see how that repair does what

474

00:26:02,380 --> 00:26:03,880

you say starts now.

475

00:26:03,980 --> 00:26:04,580

Okay.

476

00:26:05,380 --> 00:26:09,380

Coming up next on myth busters we try to make a cannon at a

477

00:26:09,480 --> 00:26:10,180

duct tape.

478

00:26:12,980 --> 00:26:14,480

We try to make a sailboat.

479

00:26:14,780 --> 00:26:15,580

No kidding.

480

00:26:18,580 --> 00:26:20,780

Do not try what you're about to see at home.

481

00:26:20,980 --> 00:26:24,180

We consult with experts we take every precaution and we have

482

00:26:24,280 --> 00:26:26,480

years of experience in dangerous situations.

483

00:26:30,180 --> 00:26:30,680

One.

484

00:26:31,580 --> 00:26:35,180

Harry Grant and Tory have seen that one inch thick duct tape

485

00:26:35,280 --> 00:26:39,580

can withstand the explosive pressures of a cannon and the

486

00:26:39,680 --> 00:26:42,980

team is going to play it safe by making its duct tape cannon

487

00:26:43,080 --> 00:26:46,980

barrel 2 inches thick and to get the perfect shape it's going

488

00:26:47,080 --> 00:26:49,580

to build it around a removable steel form.

489

00:26:51,080 --> 00:26:53,480

Okay so here's the plan we have our internal diameter plug

490

00:26:53,680 --> 00:26:55,980

we're going to grease this up you know what Jamie would say

491

00:26:56,080 --> 00:26:56,380

here.

492

00:26:56,780 --> 00:26:58,280

When in doubt Lou.

493

00:26:58,880 --> 00:27:00,080

When covered wax paper.

494

00:27:01,980 --> 00:27:04,080

And we're set across hatching system with all of our duct

495

00:27:04,180 --> 00:27:06,680

tape to get to our target thickness that we have the perfect

496

00:27:06,780 --> 00:27:07,580

duct tape cannon.

497

00:27:08,480 --> 00:27:12,080

With almost 20 rolls of tape used at the end in sight.

498

00:27:12,580 --> 00:27:16,280

It looks like a giant debt tape set for a big silver sausage

499

00:27:16,880 --> 00:27:17,380

or that.

500

00:27:18,180 --> 00:27:20,980

The team starts thinking through the next stage of the bill.

501

00:27:21,580 --> 00:27:24,780

One of our big concerns is that the can will simply collapse

502

00:27:24,780 --> 00:27:28,880

on itself so I'm going to make a smaller wooden form that we

503

00:27:28,980 --> 00:27:31,480

can use to safely transport this tour testing site.

504

00:27:32,880 --> 00:27:35,780

Here it is and another problem that we're going to face is

505

00:27:35,880 --> 00:27:39,380

the cannon itself may just fall. So I got to come up with some

506

00:27:39,480 --> 00:27:41,880

kind of support system that runs the entire length of the

507

00:27:41,980 --> 00:27:44,780

barrel that will allow us to attach to our stand.

508

00:27:48,380 --> 00:27:52,480

Yeah 2 inches that's it. All right we hit our target point now

509

00:27:52,480 --> 00:27:54,680

the hard part getting this off the form.

510

00:27:54,980 --> 00:27:56,980

I don't think it'll be that hard to prep really well.

511

00:27:57,680 --> 00:27:58,680

Okay, all right.

512

00:28:02,080 --> 00:28:06,380

Exuding the confident glow of the well-prepared carry has no

513

00:28:06,480 --> 00:28:07,780

doubts it's going to work.

514

00:28:08,680 --> 00:28:10,480

The boys not so much.

515

00:28:13,080 --> 00:28:16,080

Okay so we have this whole plan right drill a hole we put air

516

00:28:16,180 --> 00:28:18,720

pressure in and it should just kind of slide right off the

517

00:28:18,820 --> 00:28:22,180

floor. We drill the hole with the air pressure and nothing.

518

00:28:22,280 --> 00:28:25,880

So we drill another hole put more air pressure in that's good

519

00:28:25,980 --> 00:28:29,780

moving and it started to move a little bit but still not really

520

00:28:29,880 --> 00:28:30,980

coming off that easily.

521

00:28:33,480 --> 00:28:36,680

Finally we wrap the strap around the cannon for you hold on

522

00:28:36,780 --> 00:28:38,980

with the forklift and then it popped right off.

523

00:28:39,580 --> 00:28:41,680

Oh there you go coming off.

524

00:28:52,480 --> 00:28:53,680

That's great.

525

00:28:54,780 --> 00:28:56,480

The boys had their doubts about us getting the duct tape

526

00:28:56,580 --> 00:28:57,880

cannon off of the metal form.

527

00:28:58,680 --> 00:29:00,980

That is sick.

528

00:29:01,180 --> 00:29:02,480

That's a duct tape cannon.

529

00:29:02,580 --> 00:29:04,080

This might actually work.

530

00:29:05,580 --> 00:29:06,880

That is awesome.

531

00:29:07,580 --> 00:29:08,780

I knew it was going to work.

532

00:29:08,980 --> 00:29:11,380

Now all we need is gunpowder and cannonballs.

533

00:29:14,980 --> 00:29:18,980

Adam and Jamie are kings of the world but inevitably just

534

00:29:19,080 --> 00:29:21,580

like Kate and Leo they're going under.

535

00:29:22,180 --> 00:29:26,480

Well it's not looking so good for duct tape repair of a boat

536

00:29:26,580 --> 00:29:30,380

in situ in a damp conditions as it were.

537

00:29:31,580 --> 00:29:34,180

And it doesn't look like our boat is long for the world here

538

00:29:34,280 --> 00:29:35,380

but we're going to wait it out.

539

00:29:35,880 --> 00:29:38,680

I'm going to go out on a limb here and say we're officially

540

00:29:38,780 --> 00:29:43,380

sinking because like we're sitting in water.

541

00:29:43,580 --> 00:29:43,980

Yeah.

542

00:29:46,280 --> 00:29:50,180

It's pretty clear to me that applied dry duct tape actually

543

00:29:50,180 --> 00:29:52,980

implements a not unreasonable boat repair.

544

00:29:53,280 --> 00:29:55,380

Oh oh oh yeah.

545

00:29:55,980 --> 00:29:58,880

Applied wet not so much here.

546

00:30:00,080 --> 00:30:01,480

I think we can still get back to shore.

547

00:30:02,080 --> 00:30:03,580

Duct tape for boat repair.

548

00:30:04,080 --> 00:30:06,980

We'll like a lot of things it doubles in the details.

549

00:30:07,580 --> 00:30:09,580

Have you ever paddled a sinking boat?

550

00:30:09,980 --> 00:30:11,180

No that I haven't done.

551

00:30:11,980 --> 00:30:15,880

With a dry surface a super clean one properly applied it'll

552

00:30:15,980 --> 00:30:17,780

work fairly well for a while.

553

00:30:17,880 --> 00:30:18,780

Anything else?

554

00:30:18,980 --> 00:30:19,680

Forget about it.

555

00:30:21,180 --> 00:30:23,580

Okay I think we're going to need some help in the camera crew.

556

00:30:24,480 --> 00:30:29,580

So leaky boat repair I'm calling it plausible even if it's not ideal.

557

00:30:29,680 --> 00:30:32,780

Well out on the open water I'd rather have this than nothing

558

00:30:32,780 --> 00:30:33,780

by a long shot.

559

00:30:33,980 --> 00:30:37,080

I agree but you know I was thinking why mess around with

560

00:30:37,180 --> 00:30:38,980

patching boats and such nonsense.

561

00:30:38,980 --> 00:30:43,280

Let's up the ante and actually make a boat out of duct tape.

562

00:30:43,580 --> 00:30:44,580

I love it.

563

00:30:44,780 --> 00:30:47,180

I knew you'd find the open water inspiring.

564

00:30:47,380 --> 00:30:48,780

Be sure to bring your life fast.

565

00:30:49,380 --> 00:30:54,380

Yep our salty sea dog Heinemann and Cap and Savage love a nautical

566

00:30:54,380 --> 00:30:55,580

engineering challenge.

567

00:30:56,980 --> 00:31:00,080

They escape Alcatraz in a boat made of raincoats.

568

00:31:00,280 --> 00:31:03,780

They raise the myth panic with ping pong balls.

569

00:31:03,980 --> 00:31:07,180

They've even made a speed boat out of frozen newspapers.

570

00:31:10,180 --> 00:31:14,780

And now a boat made out of duct tape but it won't be just duct

571

00:31:14,780 --> 00:31:15,780

tape surely.

572

00:31:15,980 --> 00:31:19,280

Now because it'd be a little floppy if it was all duct tape

573

00:31:19,580 --> 00:31:23,580

we're going to use steel wire to make a grid to hang the duct

574

00:31:23,580 --> 00:31:24,180

tape on.

575

00:31:25,780 --> 00:31:26,980

It's pretty.

576

00:31:28,580 --> 00:31:30,780

Which just leaves the key ingredient.

577

00:31:31,880 --> 00:31:36,080

Lots and lots of it but is it enough to float a boat.

578

00:31:37,080 --> 00:31:38,880

If you're going to build a boat out of duct tape you need to

579

00:31:38,880 --> 00:31:42,680

think about the duct tape as cloth or like an animal high.

580

00:31:42,880 --> 00:31:44,180

It's kind of like weaving.

581

00:31:45,080 --> 00:31:47,780

In fact that's what Native Americans used to do is build

582

00:31:47,780 --> 00:31:51,080

boats out of animal hide and they would make a lightweight

583

00:31:51,080 --> 00:31:53,180

wood structure that they'd stretch it over.

584

00:31:53,680 --> 00:31:56,980

We're going to do the same thing but instead of wood we're

585

00:31:56,980 --> 00:31:59,280

going to use steel because we can work quicker with it.

586

00:31:59,780 --> 00:32:04,280

Of course otherwise the boat is a pretty normal modern sailboat

587

00:32:04,280 --> 00:32:04,680

design.

588

00:32:07,480 --> 00:32:10,280

With the second layer being applied the cornerstone of their

589

00:32:10,280 --> 00:32:11,880

design should be noted.

590

00:32:12,380 --> 00:32:15,080

It'll be sticky side to sticky side.

591

00:32:15,280 --> 00:32:16,680

That's the last one.

592

00:32:17,880 --> 00:32:18,680

The whole is done.

593

00:32:20,180 --> 00:32:24,180

But they're not quite done yet they need a sale and at a

594

00:32:24,180 --> 00:32:27,980

classic with musters moment we reduce the next hour of hard

595

00:32:27,980 --> 00:32:32,180

work and problem solving to a crispy Jim second montage.

596

00:32:36,180 --> 00:32:39,980

Yeah baby you can keep your duct tape proctucks.

597

00:32:41,980 --> 00:32:45,180

If I was alone on the open sea the last thing I'd ask for

598

00:32:45,180 --> 00:32:49,280

is 23 rolls of duct tape apparently this is enough to

599

00:32:49,280 --> 00:32:53,080

make a boat 690 square feet if you laid each of these rolls

600

00:32:53,080 --> 00:32:56,480

and they would spend the Golden Gate Bridge and soon we're

601

00:32:56,480 --> 00:32:58,480

going to take them sailing next.

602

00:32:59,680 --> 00:33:00,880

It's cannon time.

603

00:33:03,380 --> 00:33:07,580

And then will Adam and Jamie get wet and fail when they set

604

00:33:07,580 --> 00:33:08,080

sail.

605

00:33:08,080 --> 00:33:10,180

Keep going wait wait wait let me get out of the way.

606

00:33:12,880 --> 00:33:13,880

Yeah.

607

00:33:16,180 --> 00:33:18,480

I was put this duct tape to the test.

608

00:33:19,680 --> 00:33:23,080

Harry Grant and Tory are about to find out if you can make a

609

00:33:23,080 --> 00:33:25,680

fully functioning cannon from duct tape.

610

00:33:29,180 --> 00:33:32,280

The test will be a simple performance comparison with a

611

00:33:32,280 --> 00:33:33,580

real steel cannon.

612

00:33:35,880 --> 00:33:39,780

Including muscle velocity range and whether it you know

613

00:33:39,880 --> 00:33:41,480

catastrophically fails.

614

00:33:41,880 --> 00:33:44,680

Now you may recognize this cannon from prison break we try

615

00:33:44,680 --> 00:33:46,680

to launch a prisoner over prison wall.

616

00:33:48,780 --> 00:33:50,880

This time we're going to be using it for a control test

617

00:33:50,880 --> 00:33:54,680

before we fire off our duct tape can it we're going to be using

618

00:33:54,680 --> 00:33:57,280

the same amount of black powder as we did on our straight

619

00:33:57,280 --> 00:33:57,680

cage.

620

00:33:58,280 --> 00:33:59,780

That's 4 second shows.

621

00:34:00,280 --> 00:34:04,080

We placed cones at every 50 yards so we can see just how far

622

00:34:04,080 --> 00:34:05,280

cannonballs travel.

623

00:34:05,780 --> 00:34:07,480

All right that's 500 yards.

624

00:34:07,980 --> 00:34:09,780

I don't think the cannonball going to go much farther than

625

00:34:09,780 --> 00:34:12,780

that you know what and finally to check the speed of the

626

00:34:12,780 --> 00:34:15,680

cannonballs we set up this scale because remember for this

627

00:34:15,680 --> 00:34:18,580

myth to be confirmed it should have similar range similar

628

00:34:18,580 --> 00:34:21,980

speed and most importantly the duct tape cannon cannot blow

629

00:34:21,980 --> 00:34:22,180

up.

630

00:34:22,680 --> 00:34:23,780

All right see you back there.

631

00:34:23,880 --> 00:34:24,280

Okay.

632

00:34:26,180 --> 00:34:30,380

Surely me with the dangerous job with the 4 shotgun shells

633

00:34:30,380 --> 00:34:33,580

worth of black powder in the combustion chamber all that's

634

00:34:33,580 --> 00:34:35,580

left to do is light the fuse.

635

00:34:35,780 --> 00:34:36,680

All right here we go.

636

00:34:38,080 --> 00:34:38,780

And run.

637

00:34:41,280 --> 00:34:42,280

For us.

638

00:34:43,280 --> 00:34:44,080

Yeah.

639

00:34:44,980 --> 00:34:45,580

I'm ready.

640

00:34:45,880 --> 00:34:46,380

We live.

641

00:34:47,780 --> 00:34:51,380

The inexorable hard thumping excitement of the lit fuse

642

00:34:51,480 --> 00:34:53,580

whether it's your first or hundreds.

643

00:34:53,980 --> 00:34:55,280

There's nothing quite like it.

644

00:35:00,180 --> 00:35:00,680

Yeah.

645

00:35:02,580 --> 00:35:04,480

That was great.

646

00:35:04,580 --> 00:35:05,380

Right in the cones.

647

00:35:06,380 --> 00:35:11,380

That's some serious real steel and black powder hardware.

648

00:35:12,080 --> 00:35:15,180

It through the cannonball the full length of the course.

649

00:35:15,380 --> 00:35:16,680

That's like a divot right there.

650

00:35:16,680 --> 00:35:18,780

Like yeah totally in.

651

00:35:20,480 --> 00:35:22,280

It went over 500 yards.

652

00:35:22,780 --> 00:35:25,480

So I reviewed the high speed footage and Tories cannon was

653

00:35:25,480 --> 00:35:28,580

able to fire an 18 and a half pound cannonball at a hundred

654

00:35:28,580 --> 00:35:31,780

95 miles per hour in a distance of 500 yards.

655

00:35:31,980 --> 00:35:34,380

So that is our goal for the duct tape cannon.

656

00:35:34,680 --> 00:35:38,580

But to be honest I will be very happy if our duct tape

657

00:35:38,580 --> 00:35:40,980

creation doesn't explode upon ignition.

658

00:35:44,780 --> 00:35:48,280

Adam and Jamie have set themselves the ultimate duct tape

659

00:35:48,280 --> 00:35:48,880

challenge.

660

00:35:51,180 --> 00:35:53,280

And in the shadow of the Bay Bridge.

661

00:35:55,080 --> 00:35:59,580

Seated the final preparation for stuck on use made in

662

00:35:59,580 --> 00:36:01,680

voyage is just about complete.

663

00:36:01,980 --> 00:36:02,680

It's now or never.

664

00:36:02,680 --> 00:36:03,580

Let's get it to the water.

665

00:36:03,880 --> 00:36:04,180

Yeah.

666

00:36:04,880 --> 00:36:07,280

It's getting close to the moment of truth and all that's

667

00:36:07,280 --> 00:36:11,080

separating us from Davey Jones's locker is a little bit of

668

00:36:11,080 --> 00:36:11,580

tape.

669

00:36:12,180 --> 00:36:12,680

That's good.

670

00:36:13,180 --> 00:36:15,480

I don't know whether it's going to work or not but if it

671

00:36:15,480 --> 00:36:18,180

doesn't I'm getting wet and cold and I'm motivated not to

672

00:36:18,180 --> 00:36:23,080

do that as unlikely as it seems and surely in a world first

673

00:36:23,280 --> 00:36:25,680

Adam and Jamie are attempting to sail.

674

00:36:25,680 --> 00:36:26,680

Let me get out of the way.

675

00:36:26,980 --> 00:36:27,580

There we go.

676

00:36:28,080 --> 00:36:30,280

A boat made out of duct tape.

677

00:36:34,080 --> 00:36:37,880

And despite the chaotic start it appears the boat really does

678

00:36:37,880 --> 00:36:38,280

float.

679

00:36:38,680 --> 00:36:39,280

Got the tiller.

680

00:36:40,280 --> 00:36:41,380

You see any water down there?

681

00:36:42,680 --> 00:36:43,480

Not a drop.

682

00:36:44,680 --> 00:36:48,180

For liminary reports so that it's sea worthy permission to

683

00:36:48,180 --> 00:36:48,780

climb aboard.

684

00:36:48,980 --> 00:36:49,880

Come on in.

685

00:36:50,280 --> 00:36:51,180

All right here we go.

686

00:36:52,980 --> 00:36:53,280

I'm in.

687

00:36:54,480 --> 00:36:55,180

And we're away.

688

00:36:58,480 --> 00:36:59,480

Oh this is a life.

689

00:36:59,480 --> 00:36:59,780

Hey.

690

00:37:00,980 --> 00:37:01,680

So far.

691

00:37:02,580 --> 00:37:04,280

Understandable skepticism.

692

00:37:04,280 --> 00:37:05,480

We don't have much wind.

693

00:37:05,780 --> 00:37:09,680

But even glass half empty Heidemann try not to put your feet

694

00:37:09,680 --> 00:37:10,480

through the bottom.

695

00:37:11,180 --> 00:37:14,480

Relaxes as they catch a draft get underway.

696

00:37:14,580 --> 00:37:15,580

This thing's holding water man.

697

00:37:15,580 --> 00:37:17,280

I don't see a drop of water.

698

00:37:20,380 --> 00:37:22,080

This is actually working.

699

00:37:22,280 --> 00:37:22,980

There we go.

700

00:37:23,680 --> 00:37:24,280

Oh yeah.

701

00:37:26,580 --> 00:37:27,880

Hey give me some skin there.

702

00:37:30,080 --> 00:37:30,480

Ow.

703

00:37:30,480 --> 00:37:31,180

Ow.

704

00:37:31,280 --> 00:37:32,980

Coming up next on Mythbusters.

705

00:37:32,980 --> 00:37:35,380

Is this can I get a fire or explode.

706

00:37:36,380 --> 00:37:38,080

You guys might want to get back on this one.

707

00:37:48,180 --> 00:37:49,980

It went over 500 yards.

708

00:37:51,180 --> 00:37:56,380

Tori Granton carries real steel cannon can now it's time to

709

00:37:56,380 --> 00:38:00,580

see what the duct tape can do now we have a target for our

710

00:38:00,680 --> 00:38:01,580

duct tape cannon.

711

00:38:01,980 --> 00:38:04,080

I'm hoping we get the same sort of distance out of this

712

00:38:04,080 --> 00:38:06,180

because this be a really nice addition to our arsenal.

713

00:38:06,580 --> 00:38:08,780

But the guys are getting ahead of themselves.

714

00:38:08,880 --> 00:38:10,980

They seem to have a sticky problem.

715

00:38:12,080 --> 00:38:15,680

One of the pros and the cons of duct tape is the fact that

716

00:38:15,680 --> 00:38:17,780

it is so flexible and malleable.

717

00:38:17,980 --> 00:38:21,280

So it's great that we can actually make a complex shape

718

00:38:21,280 --> 00:38:22,180

like a cannon.

719

00:38:22,480 --> 00:38:25,380

But the big question is can it hold that shape long enough

720

00:38:25,380 --> 00:38:26,980

to shoot off one of our cannonballs.

721

00:38:27,180 --> 00:38:27,880

Excellent.

722

00:38:28,580 --> 00:38:30,780

In order to fire off this cannon it is going to be tricky

723

00:38:30,780 --> 00:38:32,980

because loading it we got to move quick.

724

00:38:35,380 --> 00:38:38,180

As soon as we pull off this plug the duct tape cannon is

725

00:38:38,180 --> 00:38:39,080

going to lose its shape.

726

00:38:39,580 --> 00:38:42,180

I mean as strong as the duct tape is it's not rigid.

727

00:38:44,980 --> 00:38:46,180

That's a tight fit.

728

00:38:46,380 --> 00:38:48,480

We might have a bomb here instead of a cannon.

729

00:38:49,380 --> 00:38:51,980

So if it loses its shape there's a potential that the ball

730

00:38:51,980 --> 00:38:53,480

gets stuck inside the barrel.

731

00:38:54,880 --> 00:38:56,780

This is just gotten a lot scarier.

732

00:38:57,080 --> 00:38:59,280

If that happens it's going to trap all that pressure from

733

00:38:59,280 --> 00:39:00,280

the burning black powder.

734

00:39:00,480 --> 00:39:02,780

Instead of getting a cannon firing off we're going to get

735

00:39:02,780 --> 00:39:03,880

a giant explosion.

736

00:39:04,380 --> 00:39:04,980

That would be okay.

737

00:39:05,680 --> 00:39:09,480

When catastrophic failure equals an explosion.

738

00:39:09,480 --> 00:39:12,080

Lighting it in three, two, one.

739

00:39:12,280 --> 00:39:14,880

It's a win-win as far as Tori's concerned.

740

00:39:15,080 --> 00:39:15,780

Get out of here.

741

00:39:15,780 --> 00:39:16,880

This would be dangerous.

742

00:39:17,080 --> 00:39:17,680

Run!

743

00:39:18,280 --> 00:39:20,280

Alright use this late it looks good.

744

00:39:20,380 --> 00:39:21,280

So this is it.

745

00:39:21,880 --> 00:39:25,480

Can a duct tape cannon withstand and brace the force

746

00:39:25,480 --> 00:39:29,980

required to throw an 18 and a half pound cannonball 500

747

00:39:29,980 --> 00:39:33,980

yards or will the soft and malleable barrel grip the

748

00:39:33,980 --> 00:39:36,180

ball and cause it to bomb.

749

00:39:37,580 --> 00:39:38,380

It's going to be soon.

750

00:39:38,780 --> 00:39:39,380

It worked!

751

00:39:39,380 --> 00:39:40,380

It didn't blow up!

752

00:39:41,380 --> 00:39:43,380

We need a duct tape cannon!

753

00:39:43,380 --> 00:39:44,380

I love it!

754

00:39:44,380 --> 00:39:44,880

I love it!

755

00:39:45,380 --> 00:39:46,380

Let's shoot another one off.

756

00:39:47,380 --> 00:39:48,380

It worked.

757

00:39:49,380 --> 00:39:52,380

At a happier bunch of ballistic mythbusters you're

758

00:39:52,380 --> 00:39:53,380

unlikely to see.

759

00:39:53,380 --> 00:39:54,380

It's gorgeous.

760

00:39:54,380 --> 00:39:55,380

Look at that.

761

00:39:55,380 --> 00:39:56,380

There's no deformation.

762

00:39:56,380 --> 00:39:58,380

Everything is still pretty much intact.

763

00:39:58,380 --> 00:40:00,380

And we launched the ball pretty far.

764

00:40:00,380 --> 00:40:02,380

But exactly how far?

765

00:40:02,380 --> 00:40:05,380

That is cool!

766

00:40:05,380 --> 00:40:08,380

It went like 125 yards.

767

00:40:08,380 --> 00:40:11,380

So according to my calculations our duct tape cannon

768

00:40:11,380 --> 00:40:15,380

fired the cannonball at 136 miles per hour which is

769

00:40:15,380 --> 00:40:18,380

only a 30% reduction over Tori's cannon.

770

00:40:18,380 --> 00:40:20,380

It suffered a little bit in the distance it only went

771

00:40:20,380 --> 00:40:23,380

a quarter of the way but that's still 125 yards.

772

00:40:23,380 --> 00:40:25,380

And just bear this in mind.

773

00:40:25,380 --> 00:40:27,380

We're going to be doing a little bit of a test.

774

00:40:27,380 --> 00:40:29,380

The distance only went a quarter of the way but that's

775

00:40:29,380 --> 00:40:31,380

still 125 yards.

776

00:40:31,380 --> 00:40:32,380

And just bear this in mind.

777

00:40:32,380 --> 00:40:34,380

That cannonball is 18 and a half pounds.

778

00:40:34,380 --> 00:40:37,380

One cannon is made out of solid steel.

779

00:40:37,380 --> 00:40:40,380

And the other cannon is made out of cloth back

780

00:40:40,380 --> 00:40:43,380

polyethylene coated rubberized adhesive tape.

781

00:40:44,380 --> 00:40:47,380

So performance wise it didn't quite match up.

782

00:40:47,380 --> 00:40:50,380

But there's no doubt it's a fully functioning cannon.

783

00:40:51,380 --> 00:40:53,380

And with a fat lady warming her tonsils for the

784

00:40:53,380 --> 00:40:57,380

confirmation area the guys load up one more time.

785

00:40:57,380 --> 00:40:59,380

You know, just to be sure.

786

00:40:59,380 --> 00:41:00,380

I always get really excited when we actually get to confirm

787

00:41:00,380 --> 00:41:02,380

a myth because we always are busting them.

788

00:41:02,380 --> 00:41:04,380

Overwhelmingly we bust myths.

789

00:41:04,380 --> 00:41:07,380

This one, duct tape cannon is actually confirmed.

790

00:41:09,380 --> 00:41:12,380

And now we have a duct tape cannon.

791

00:41:13,380 --> 00:41:15,380

You know what that looks like to me?

792

00:41:15,380 --> 00:41:16,380

Confirmed.

793

00:41:16,380 --> 00:41:17,380

Yeah absolutely.

794

00:41:17,380 --> 00:41:20,380

It didn't go as far as the regular cannon but it did work.

795

00:41:20,380 --> 00:41:21,380

That's right.

796

00:41:21,380 --> 00:41:23,380

It exploded and it went the distance.

797

00:41:23,380 --> 00:41:24,380

Confirmed.

798

00:41:24,380 --> 00:41:25,380

Woo!

799

00:41:25,380 --> 00:41:26,380

More duct tape.

800

00:41:26,380 --> 00:41:27,380

I love it.

801

00:41:27,380 --> 00:41:29,380

Duct tape and black powder.

802

00:41:29,380 --> 00:41:30,380

Two of my favorite things.

803

00:41:30,380 --> 00:41:33,380

And here on MythBusters we figure out a way to bring them together

804

00:41:33,380 --> 00:41:35,380

in the form of a cannon.

805

00:41:35,380 --> 00:41:37,380

And a cannon that worked.

806

00:41:37,380 --> 00:41:38,380

That didn't explode.

807

00:41:38,380 --> 00:41:39,380

We confirm this.

808

00:41:40,380 --> 00:41:42,380

I just can't tell you how happy I am.

809

00:41:43,380 --> 00:41:44,380

Good times everybody.

810

00:41:45,380 --> 00:41:46,380

Good times.

811

00:41:52,380 --> 00:41:58,380

If you're like us and you can't get enough black powder and duct tape

812

00:41:58,380 --> 00:42:02,380

go to [discovery.com slash myth busters](http://discovery.com/slash-myth-busters) and check it out.

813

00:42:05,380 --> 00:42:09,380

You could say Adam and Jamie are enjoying themselves.

814

00:42:09,380 --> 00:42:12,380

Scotty, I need more power.

815

00:42:12,380 --> 00:42:17,380

I'm giving it all we got captain but I just can't push it any further.

816

00:42:17,380 --> 00:42:21,380

They've managed to make a sailing boat out of duct tape.

817

00:42:23,380 --> 00:42:27,380

I gotta say we knew that duct tape, duct together was reasonably waterproof

818

00:42:27,380 --> 00:42:29,380

but it also has a really nice tensile strength.

819

00:42:29,380 --> 00:42:32,380

It's made of just a fabulous skin on this boat.

820

00:42:32,380 --> 00:42:36,380

I think the key to it is making one nice piece of fabric out of the whole skin.

821

00:42:36,380 --> 00:42:37,380

Hesed did.

822

00:42:37,380 --> 00:42:41,380

Hesed was miles ahead of just putting tape on any which way.

823

00:42:41,380 --> 00:42:44,380

So with a couple of days and a couple of dozen rolls of duct tape

824

00:42:44,380 --> 00:42:48,380

we sent ourselves the task of making a viable sea worthy vessel.

825

00:42:48,380 --> 00:42:52,380

And while it's true that failure is always an option

826

00:42:52,380 --> 00:42:55,380

I have to say success is pretty sweet.

827

00:42:55,380 --> 00:43:00,380

And as far as Adam's concerned it's a financial success as well.

828

00:43:00,380 --> 00:43:02,380

Dude I can't stay out here all day.

829

00:43:02,380 --> 00:43:04,380

This boat is not going to fail anytime soon.

830

00:43:04,380 --> 00:43:07,380

I don't think I have to pay 500 bucks.

831

00:43:07,380 --> 00:43:09,380

You're absolutely right.

832

00:43:10,380 --> 00:43:12,380

I love being like that.

833

00:43:13,380 --> 00:43:15,380

Well Adam you know what they say.

834

00:43:15,380 --> 00:43:16,380

Yeah.

835

00:43:16,380 --> 00:43:18,380

Whatever floats your boat.

836

00:43:18,380 --> 00:43:21,380

Somehow didn't think it was going to be duct tape though.