

1

00:00:00,000 --> 00:00:04,080

Remember do not try anything you are about to see at home

2

00:00:09,120 --> 00:00:11,280

On this episode of mythbusters

3

00:00:12,200 --> 00:00:15,800

Adam and Jamie get feisty with a bar fight fable

4

00:00:19,840 --> 00:00:24,360

Want to know if an empty beer bottle really does more damage than a full one

5

00:00:25,120 --> 00:00:27,120

God

6

00:00:28,720 --> 00:00:35,760

Meanwhile you have to massage the leather makes a better cannon in a ballistic material mystery from history

7

00:00:36,720 --> 00:00:43,600

These are the legs were Carrie Grant and Tori take on the tall tail of the Swedish and Irish cannons

8

00:00:46,600 --> 00:00:48,600

Made from leather

9

00:00:49,160 --> 00:00:55,520

Are the mythbusters Adam Savage comes chaos

10

00:00:56,200 --> 00:01:03,520

And Jamie Hyneman, I call him my little pop gun between them more than 30 years of special effects experience

11

00:01:04,280 --> 00:01:05,760

joining them

12

00:01:05,760 --> 00:01:07,760

Carrie Byron explosives in electricity

13

00:01:09,600 --> 00:01:16,880

Tori Bellachy is your bitch it's at Grant imahara now for something completely gratuitous. They don't just tell the kids

14

00:01:17,480 --> 00:01:19,480

They put them to the test

15

00:01:31,800 --> 00:01:37,040

We're not gonna have to start drinking in the middle of the day again, are we luckily no this is not a myth about

16

00:01:37,280 --> 00:01:42,560

Getting drunk it's a myth about what happens after you've already gotten drunk and gotten yourself into a bar fight

17

00:01:42,560 --> 00:01:48,800

And the myth is that getting hit with an empty bottle is worse for you than getting hit with a bottle

18

00:01:48,800 --> 00:01:50,800

That's full allow me to demonstrate

19

00:01:56,840 --> 00:02:01,040

No silver screen bar fight scene is complete without one

20

00:02:02,120 --> 00:02:08,200

However unlike the movies in real life a bottle bash is extremely dangerous

21

00:02:08,520 --> 00:02:16,040

How dangerous well award-winning forensic scientists list skull fractures

22

00:02:17,360 --> 00:02:19,600

Concussions and scalp lacerations

23

00:02:21,440 --> 00:02:23,440

Among the possible injuries

24

00:02:24,160 --> 00:02:28,560

They also conclude that an empty bottle smash will do more damage

25

00:02:28,680 --> 00:02:35,600

But is this really possible could a lighter empty bottle really harm you more than a heavier full one

26

00:02:36,480 --> 00:02:39,000

So how do you want to test this one?

27

00:02:41,600 --> 00:02:47,480

Fake bottle don't do this at home. No seriously. How are you thinking we should test this exactly like that?

28

00:02:47,480 --> 00:02:54,680

But with real bottles except with head protection. We'll have a closer look at what kind of forces are involved, okay?

29

00:02:58,160 --> 00:03:00,280

So let the bar fight come ends

30

00:03:01,280 --> 00:03:06,600

Even though after a few beers it might seem like a good idea to hit somebody over the head with a beer bottle

31

00:03:06,640 --> 00:03:08,560

It's probably not

32

00:03:08,560 --> 00:03:14,680

Nevertheless, we feel inclined to get up close and personal on our testing and that's where this comes in

33

00:03:14,680 --> 00:03:20,760

This is a football helmet outfitted with a specially designed array of accelerometers that will register

34

00:03:20,840 --> 00:03:26,840

Any movement of our skull and help us determine whether a full versus an empty beer bottle is more harmful

35

00:03:27,520 --> 00:03:33,040

Plus it's a nice excuse for me to hit at him over the head with a bottle which I regularly want to do

36

00:03:33,680 --> 00:03:35,080

You ready?

37

00:03:35,080 --> 00:03:37,840

You know before I put this on and take some hits to the head

38

00:03:37,840 --> 00:03:43,840

Let's put this on a non-human analog just to make sure it's safe see what kind of forces are involved, okay?

39

00:03:47,640 --> 00:03:54,040

It's ready. I'm ready. We're ready. Okay safety systems check

40

00:03:57,080 --> 00:03:59,080

Wow

41

00:03:59,720 --> 00:04:01,720

That's not what happens in the movies

42

00:04:03,040 --> 00:04:05,440

Now it seems like these are a lot harder to break than we thought

43

00:04:07,120 --> 00:04:09,240

And I think that's because of a couple of vain reasons

44

00:04:09,240 --> 00:04:13,080

What's the matter old man been too long since your last bar fight one is in the movies

45

00:04:13,080 --> 00:04:17,280

You're always seeing people smack each other over the head with bottles and the bottles break really easily

46

00:04:17,280 --> 00:04:23,520

Well, those are fake bottles. It's the movies and number two who among us hasn't dropped in broken bottles

47

00:04:23,520 --> 00:04:27,800

They seem quite fragile. The fact is they're not they're actually built to ship

48

00:04:27,840 --> 00:04:30,640

They're built to last and when you look at shots like this

49

00:04:31,360 --> 00:04:33,360

this and this

50

00:04:34,440 --> 00:04:37,460

It's pretty clear these things are tougher than they look

51

00:04:38,040 --> 00:04:44,920

Adam however is as tough as he looks out. Not very so when our expert crunches the numbers

52

00:04:44,920 --> 00:04:46,920

I was about a hundred and seven G's

53

00:04:47,760 --> 00:04:50,640

the experiment takes a safer turn and

54

00:04:51,080 --> 00:04:54,980

About a hundred G's is the average concussion that we see in the field. I

55

00:04:55,800 --> 00:04:59,040

Don't think I'm gonna be wearing that helmet today. I don't blame you

56

00:05:00,760 --> 00:05:05,160

The helmet doing what it was designed to do was flexing on impact

57

00:05:05,680 --> 00:05:09,240

absorbing energy and making it difficult to break the bottle

58

00:05:09,880 --> 00:05:14,880

Q our hard-headed head stuntman with his crown of data collecting

59

00:05:15,680 --> 00:05:17,680

accelerometers

60

00:05:18,600 --> 00:05:19,960

Oh

61

00:05:19,960 --> 00:05:28,520

There you go. Did you get a reading? Yeah, it's about 54 G's awesome awesome, but one data point does not a sample make

62

00:05:30,480 --> 00:05:33,360

So in a frenzy of beer and broken glass

63

00:05:34,280 --> 00:05:36,080

33 hard man

64

00:05:36,080 --> 00:05:36,880

Heinemann's

65

00:05:36,880 --> 00:05:42,480

Smashes away 11 G's until he satisfied with a sample set of seven

66

00:05:43,880 --> 00:05:47,640

34 which yields an average of 28 G's

67

00:05:48,440 --> 00:05:56,400

Awesome, let's continue with an empty bottle remember the myth is that an empty bottle when smashed is more damaging than the full

68

00:05:56,400 --> 00:05:58,600

Are you peeing? No, okay?

69

00:05:59,720 --> 00:06:01,800

It's the comparison that's the key

70

00:06:04,000 --> 00:06:06,480

Okay, here we go empty beer bottle

71

00:06:07,600 --> 00:06:12,880

And as the numbers come in it's clear that comparison does not favor the myth

72

00:06:13,880 --> 00:06:15,880

13 G's

73

00:06:16,880 --> 00:06:24,920

So it's about 11 G's less G force to the head from the empties appears to indicate they do less damage than the full ones

74

00:06:25,840 --> 00:06:29,240

But Adams got an issue with the experimental design

75

00:06:29,880 --> 00:06:35,080

In general the data seems to support the idea that it's not looking very good for the myth

76

00:06:35,080 --> 00:06:40,280

But we're seeing huge variances in the G load on this guy depending on how hard Jamie swings

77

00:06:40,280 --> 00:06:43,160

Which is very hard to control clearly moving forward

78

00:06:43,160 --> 00:06:49,680

We're going to need to remove the variance of the human arm and go with a mechanical solution to solving this problem

79

00:06:57,320 --> 00:07:01,760

All right, Carrie what do these things have in common?

80

00:07:02,040 --> 00:07:09,480

Okay, creamer cheese leather chicken duct tape and a steel pipe Saturday night at Adams adives house very close

81

00:07:09,480 --> 00:07:11,080

No

82

00:07:11,080 --> 00:07:16,520

Saturday night at Jamie Heinemann's house. No cannon. Okay, get everything but the leather. Well, that's the next myth

83

00:07:16,520 --> 00:07:19,160

We are gonna try to build a cannon out of nothing but leather

84

00:07:19,880 --> 00:07:21,560

Okay, really?

85

00:07:21,560 --> 00:07:26,520

Absolutely in the 17th century King Gustavus Adolphus of Sweden came up with the idea

86

00:07:26,520 --> 00:07:29,600

It was a copper core with iron bands reinforcing it

87

00:07:29,880 --> 00:07:34,880

Massive soap fabric and finally the entire thing was wrapped in leather. That's not a leather cannon

88

00:07:34,880 --> 00:07:39,840

That's a cannon covered in leather. But wait, there's more later that century at the siege of Balli Nali castle

89

00:07:40,080 --> 00:07:46,960

Irish troops actually built a cannon using nothing but leather. It was about five feet long and about five inches thick leather cannon

90

00:07:46,960 --> 00:07:48,960

I like it

91

00:07:49,120 --> 00:07:53,800

The mythbusters and cannons have a long and explosive history

92

00:07:54,680 --> 00:07:59,320

I think we killed captain Kirk. There was a cheese firing cannon a

93

00:07:59,960 --> 00:08:06,200

Cannon made from duct tape and not to mention the famous cannon that fired chicken

94

00:08:08,120 --> 00:08:13,960

So who better to get to the bottom of this mystery of history did the Swedes and Irish

95

00:08:14,200 --> 00:08:18,320

Really make a viable and effective cannon from cow skin

96

00:08:20,560 --> 00:08:22,720

So my leather man, what's the plan?

97

00:08:22,840 --> 00:08:27,520

Well, we definitely need to build both versions Swedish and Irish but before we do that

98

00:08:27,520 --> 00:08:32,600

I think we need a benchmark. What do you mean? Well, we've built proof of concept cannons before like the duct tape cannon

99

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

But those weren't weapons of war. I mean we need something that can compete on the battlefield

100

00:08:36,600 --> 00:08:39,840

So we need to compare it to a cast iron period cannon

101

00:08:40,040 --> 00:08:44,120

Exactly, we'll find out how much black powder they use and how fast the projectiles come out

102

00:08:44,120 --> 00:08:47,760

Yeah, and on those specs we'll be able to judge how well our two cannons are doing

103

00:08:47,760 --> 00:08:48,920

I like it

104

00:08:48,920 --> 00:08:57,240

So first up it's down to the bomb range to get the lowdown on period accurate hardware from period accurate experts

105

00:08:57,900 --> 00:09:04,320

Haha, this is Bonnie blue the Confederates tended to name their cannon. Yeah, we have a tendency to do that too

106

00:09:04,320 --> 00:09:06,320

Let's get her off the truck and fire it up

107

00:09:07,240 --> 00:09:09,480

We're at the Alameda County bomb range

108

00:09:09,480 --> 00:09:13,520

We're about to fire off a civil war period cannon known as the parrot gun

109

00:09:14,960 --> 00:09:22,640

Now the myth that we're working on says that the Irish and the Swedish created a leather cannon now this cannon's approximately the same size and

110

00:09:22,760 --> 00:09:26,480

Fires approximately the same size ammunition as the leather cannon

111

00:09:26,680 --> 00:09:29,080

You know it's go time with grants got his game face on

112

00:09:30,080 --> 00:09:32,080

It's go time

113

00:09:32,280 --> 00:09:38,920

So we're going to fire this off check the muzzle velocity and use that as a yardstick against the ones that we want to build

114

00:09:38,920 --> 00:09:45,000

We have perfect if this doesn't stop cannonball. I don't know what will have a stack of Union soldiers

115

00:09:45,920 --> 00:09:51,760

Meanwhile Grant is getting set up to measure what old Bonnie blue can do as you know on our show

116

00:09:51,760 --> 00:09:57,840

We'd love to use the high-speed camera because it gives us all these juicy gorgeous shots things that happen in a blink of an eye

117

00:10:03,160 --> 00:10:05,320

But today it's going to be a scientific tool

118

00:10:08,600 --> 00:10:12,520

So we've aimed the high-speed camera at this scale which is set up next to the cannon

119

00:10:12,520 --> 00:10:15,720

It has one foot increments given a known frame rate

120

00:10:15,720 --> 00:10:20,120

We can count how many frames it takes for a cannonball to cross one of the increments

121

00:10:20,120 --> 00:10:26,240

That would give us a cannonball speed which will form the benchmark for how well our Swedish and Irish cannons perform

122

00:10:27,520 --> 00:10:32,320

Okay, let's talk black powder firing off the cheese cannon, maybe this much black powder

123

00:10:35,160 --> 00:10:37,160

Duck tape cannon maybe this much

124

00:10:39,120 --> 00:10:41,800

And when we blew off Buster's leg maybe that much

125

00:10:42,440 --> 00:10:52,760

This is six ounces of black powder that is what we'll be firing in our paired gun gun is loaded

126

00:10:53,360 --> 00:10:55,820

Alright muzzle velocity test on your go

127

00:11:12,320 --> 00:11:14,320

Nice shot

128

00:11:14,680 --> 00:11:18,960

So the whole point of today's experiment is not to find out whether that cannon fire we know it does

129

00:11:20,320 --> 00:11:28,800

Point find out how fast a real cannon could fire a cannonball the same size that the Swedish and Irish leather cannons were supposed to have fired

130

00:11:29,000 --> 00:11:31,000

Okay, I believe we have

131

00:11:31,720 --> 00:11:34,360

389 miles per hour and we have that answer

132

00:11:35,520 --> 00:11:37,520

389 miles per hour

133

00:11:37,520 --> 00:11:45,740

So that's the benchmark if the team can get their mythical leather cannon to fire that fast there could be some fact to this

134

00:11:46,320 --> 00:11:48,320

historical fable

135

00:11:48,680 --> 00:11:50,680

Next on myth Buster's

136

00:11:51,560 --> 00:11:53,560

Adam packs up porky punch

137

00:11:59,120 --> 00:12:05,080

So where do we stand with the bottle bash well sadly we weren't able to bash each other over the heads with bottles

138

00:12:05,480 --> 00:12:08,520

We had to settle for this guy and what did he have to tell us?

139

00:12:09,800 --> 00:12:13,840

Yes, that the full bottle somehow imparted more force than the empty bottle

140

00:12:15,160 --> 00:12:21,440

Which contradicts the myth right which is that somehow the empty bottle is worse for you and given that I can't precisely

141

00:12:21,680 --> 00:12:28,040

Control exactly how hard I hit it's impossible to know whether it's the bottle or my hit that is causing a result

142

00:12:28,120 --> 00:12:34,760

So what we need then is some kind of mechanical bottle bashing rig and a setup that helps us compare the injuries

143

00:12:34,760 --> 00:12:40,960

It's like a bar fight robot. Okay. Well you get started on that and I'll go talk to the neuro guy and see what kind of

144

00:12:41,280 --> 00:12:43,680

Injuries we're looking for on heads. Okay

145

00:12:45,560 --> 00:12:50,260

So while Adam builds a rig to bash brains with rigorous regularity

146

00:12:52,680 --> 00:13:00,760

Jamie talks to a bashed brain expert. So what exactly happens in a concussion a concussion is when you transfer a force

147

00:13:01,600 --> 00:13:08,520

External through the skull to the brain think of the skull is a box and you've got the brain inside that has the consistency of Jello

148

00:13:08,720 --> 00:13:14,080

This is your brain. I'm about to turn it into a Jello mold. Here we go

149

00:13:16,040 --> 00:13:18,040

There we go one

150

00:13:18,280 --> 00:13:25,080

gelatin brain mold when a concussion occurs and forces delivered to the skull itself the skull moves relative to the brain

151

00:13:25,080 --> 00:13:29,280

Brain stays in one place the skull moves against it that can bruise the brain

152

00:13:29,280 --> 00:13:33,440

It's hitting the skull and it can actually damage the brain opposite that oh

153

00:13:35,240 --> 00:13:40,560

What am I doing? I'm making gelatin brains. What are you doing?

154

00:13:41,160 --> 00:13:43,160

It's all a function of force Jamie

155

00:13:43,160 --> 00:13:49,760

It's how much energy is transmitted to the skull and to the brain that determines how severe the concussion is or how much

156

00:13:49,760 --> 00:13:51,760

Injury there is to the brain

157

00:13:51,760 --> 00:13:53,040

Go

158

00:13:53,040 --> 00:13:55,040

That's what I'm thinking

159

00:13:55,480 --> 00:14:01,680

It sounds like the bottom line is that whatever kind of blow moves the head more violently is what's gonna cause more of a concussion, right?

160

00:14:02,480 --> 00:14:03,560

Absolutely

161

00:14:03,560 --> 00:14:04,120

All right

162

00:14:04,120 --> 00:14:11,160

The whole purpose of this rig is to precisely and at the same speed every time swing a beer bottle into our model head to see if

163

00:14:11,160 --> 00:14:16,680

We get a concussion or how bad a concussion we get so first the arm is held in tension by this spring

164

00:14:16,680 --> 00:14:21,000

The vice grip here holds on to the beer until it swings into the head

165

00:14:21,000 --> 00:14:24,920

So we release the pin the arm swings around all the way to the head

166

00:14:24,920 --> 00:14:32,080

Here's the head on the neck weighing roughly about the same as a human head hold on. Let me add the piece through his stones a

167

00:14:33,440 --> 00:14:36,920

Nice gelatin brain now we'll watch this on high speed

168

00:14:36,920 --> 00:14:42,720

We'll see the brain bounce around and if we can see a difference in how much the head moves and the brain bounces around

169

00:14:42,720 --> 00:14:47,200

We might be able to tell something about the kind of concussion you'll get when someone breaks a bottle over your head

170

00:14:47,800 --> 00:14:56,120

But before the brain bashing begins Adam needs to know exactly how fast he needs to swing his bottles to ensure they break

171

00:14:56,400 --> 00:15:00,000

for that he's got a smaller version of the rig and a

172

00:15:00,640 --> 00:15:02,480

pig

173

00:15:02,480 --> 00:15:03,840

Here's the experimental setup

174

00:15:03,840 --> 00:15:07,920

I'm gonna take these bottles and thwack this pig right in the brain until they shatter

175

00:15:08,200 --> 00:15:15,120

This arrow right here and the high-speed camera above it will tell me the exact speed at which these bottles shatter both full and empty

176

00:15:15,280 --> 00:15:20,640

This is gross science in action in three two one

177

00:15:27,000 --> 00:15:28,760

Awesome

178

00:15:28,760 --> 00:15:34,960

Gross but awesome. It's a horror movie. All right, but throughout the violence of the hams

179

00:15:36,160 --> 00:15:38,040

This is for the money right here. All right

180

00:15:41,040 --> 00:15:43,040

Adam gets enough hits

181

00:15:44,040 --> 00:15:47,520

That has to hurt with full and empty bottles

182

00:15:48,240 --> 00:15:49,520

success

183

00:15:49,520 --> 00:15:54,240

To get a good idea of the speed they need for a guaranteed smash

184

00:15:55,840 --> 00:16:00,520

And that speed turns out to be about 50 feet per second or 34 miles per hour

185

00:16:01,240 --> 00:16:07,640

So now that they can calibrate the big rig swing speed Jell-O head is ready to take one for the team

186

00:16:13,680 --> 00:16:23,040

Carrie Grant and Tory are delving deep into ballistics history to uncover the mystery of two cannons made in a tannery

187

00:16:25,000 --> 00:16:31,800

We're trying to replicate two historical cannons both referred to as leather cannons the first one is the Swedish cannon

188

00:16:31,800 --> 00:16:37,440

It's got a copper core tube that's wrapped in some iron bands and some other stuff and basically has a leather veneer

189

00:16:37,440 --> 00:16:41,900

The second cannon is the Irish cannon this is from the early 1700s now

190

00:16:41,900 --> 00:16:47,520

This one is a more authentic leather cannon if you ask me this one's entirely made out of leather

191

00:16:47,960 --> 00:16:54,860

With the hide soak to make it more malleable. It's time to focus on the first of the builds guess which one it is

192

00:16:55,360 --> 00:16:58,480

The new dance is called directing traffic

193

00:17:00,600 --> 00:17:07,360

So here's how you build an authentic 17th century all-leather Irish cannon paint on the glue

194

00:17:07,960 --> 00:17:10,480

Insert a one-inch thick plug at the back end

195

00:17:11,720 --> 00:17:14,000

Roll the hide around a steel fork

196

00:17:14,960 --> 00:17:18,800

Hopefully this is gonna be strong enough to withstand

197

00:17:19,920 --> 00:17:21,480

Exploding black powder

198

00:17:21,480 --> 00:17:26,720

Laminate enough layers to ensure a one-inch thick barrel with a five-inch diameter

199

00:17:26,880 --> 00:17:31,080

Is it just me or does our bad-ass cannon look more like a hot dog?

200

00:17:31,200 --> 00:17:36,120

Tie it off and wait for it to dry. It's not the prettiest thing, but I think it'll work

201

00:17:36,880 --> 00:17:38,880

That's what they said when they hired me

202

00:17:40,840 --> 00:17:43,760

With the Irish cannon wrapped up and ready to blow

203

00:17:45,000 --> 00:17:51,360

Grant in a more culturally sensitive fashion than Tori is going to give us the background on the Swedish cannon

204

00:17:51,360 --> 00:17:55,280

Now in the 1600s in Europe everybody had pretty much the same design for cannon

205

00:17:56,120 --> 00:17:58,120

giant cast iron

206

00:17:58,320 --> 00:18:05,720

Unfortunately, these cannons work incredibly heavy and cumbersome and it took several men and several horses just to move them into position

207

00:18:06,640 --> 00:18:08,520

Long came the king of Sweden

208

00:18:08,520 --> 00:18:15,920

King Gustavus Adolphus II who had a brand new idea for an army an army that was incredibly mobile that could deploy quickly

209

00:18:16,240 --> 00:18:22,360

He threw out this idea of a cannon and came up with something that was lighter and more portable

210

00:18:24,000 --> 00:18:27,360

Now in truth there wasn't much leather in a Swedish leather cannon

211

00:18:27,360 --> 00:18:30,640

In fact, it had a thin wall copper tube for its barrel

212

00:18:31,080 --> 00:18:35,120

It's basic sawed-off leather cannon with a brass plug on the end

213

00:18:37,080 --> 00:18:42,600

That was covered with several layers of canvas soaked in mastic. What the heck is mastic?

214

00:18:42,600 --> 00:18:45,520

Well, it's a type of resin now we don't have mastic

215

00:18:45,520 --> 00:18:49,400

But what we do have is a two-part epoxy resin on top of that

216

00:18:49,800 --> 00:18:56,520

We're for iron bands to reinforce it then more canvas and mastic then paint another layer that way it gets embedded

217

00:18:56,560 --> 00:19:01,920

When it hardens it's gonna be very strong and finally on the top was leather

218

00:19:01,920 --> 00:19:06,840

That was called a leather cannon, but in fact it was a hybrid it had a metal barrel

219

00:19:06,960 --> 00:19:10,160

The important thing is that was lightweight and mobile

220

00:19:11,040 --> 00:19:15,440

Mobile you say well with these wheels they can roll on down to the bomb range

221

00:19:16,760 --> 00:19:21,960

Where we'll find out whether these mythical cannons built to spec could have really worked

222

00:19:22,920 --> 00:19:25,560

After the break Jello head is left dazed

223

00:19:27,080 --> 00:19:29,880

And lobotomized it's a delicious memory

224

00:19:32,520 --> 00:19:34,520

It's a

225

00:19:35,520 --> 00:19:42,240

Counter-intuitive conundrum forensic scientists tell us an empty beer bottle broken on your brain box

226

00:19:42,280 --> 00:19:45,720

Will cause more damage than a heavier full one

227

00:19:48,960 --> 00:19:54,880

Looking for answers Jamie and Adam are lining up Jello head for a comparative concussion test

228

00:19:55,600 --> 00:20:00,720

Okay, here we go one full beer bottle concussion test in three

229

00:20:01,160 --> 00:20:03,160

two one

230

00:20:08,120 --> 00:20:10,120

It looks great

231

00:20:10,320 --> 00:20:12,080

Seems to work

232

00:20:12,080 --> 00:20:14,580

Except it doesn't I look at the high speed

233

00:20:17,160 --> 00:20:25,000

Confirms the beer isn't clear problem is the beer is obstructing our ability to see the brain.
Yeah, isn't that always the way?

234

00:20:25,240 --> 00:20:30,920

So the way to go is carbonated H₂O

235

00:20:31,840 --> 00:20:37,680

We're ready. Let's do it full beer bottle cousin test three two one

236

00:20:42,400 --> 00:20:44,940

Didn't break high speed high speed

237

00:20:49,280 --> 00:20:52,400

Wow, that's a lot of force

238

00:20:53,400 --> 00:20:57,000

You see how the skull moves and then the brains in one place

239

00:20:57,080 --> 00:21:04,160

Yeah, it's the side of the skull on the front side and then look at that the brains going completely to the opposite

240

00:21:04,160 --> 00:21:09,240

Oh, wow, maybe the waves inside the Jello. That's what happens in real life

241

00:21:10,480 --> 00:21:18,560

The full bottle hit clearly falls into the not good category another wasted beer cue the empty bottle comparison

242

00:21:18,640 --> 00:21:20,640

Somewhere kittens are crying

243

00:21:22,400 --> 00:21:24,400

What do you think's gonna happen buddy?

244

00:21:29,680 --> 00:21:31,680

Really

245

00:21:32,880 --> 00:21:34,880

No, I never saw it that way before

246

00:21:37,080 --> 00:21:44,100

Okay, you ready for the empty bottle ready. All right empty bottle concussion test three two one

247

00:21:44,700 --> 00:21:46,700

I

248

00:21:48,340 --> 00:21:50,180

Don't even need to see the high speed

249

00:21:50,180 --> 00:21:52,860

I can tell by looking at the guy's face that he's messed up

250

00:21:53,260 --> 00:21:55,140

Sure, he's not a pretty sight

251

00:21:55,140 --> 00:22:01,580

But he's actually a lot better off than he was after the last test the lateral movement of the skull is

252

00:22:01,940 --> 00:22:08,000

Significantly reduced with the empty bottle was nowhere near the amount of head movement relative to brain

253

00:22:08,300 --> 00:22:12,980

So it is moving around but not near as much as it was with full bottle. Yeah

254

00:22:13,260 --> 00:22:16,720

Yeah, we're delivering less force with the empty bottle no question

255

00:22:17,740 --> 00:22:24,420

Awesome, that's like a result. Let's put the two up next to each other on the screen just like that. Okay now play

256

00:22:25,620 --> 00:22:29,780

Look at that. It couldn't be clearer. The full bottle is far worse

257

00:22:30,180 --> 00:22:37,940

That's another headache for this forensic science inspired myth so far Adam and Jamie have yet to see a sign

258

00:22:38,060 --> 00:22:42,140

That an empty bottle when smashed can cause more damage

259

00:22:42,340 --> 00:22:44,340

But they're not done yet

260

00:22:44,460 --> 00:22:50,180

The additional mass in a full bottle does seem to impart more energy to a target skull when it's broken over it

261

00:22:50,180 --> 00:22:52,180

And that could lead to a concussion

262

00:22:52,500 --> 00:22:59,260

But we're talking about head injury here and so that could also be skull fractures. It could be skin lacerations

263

00:22:59,700 --> 00:23:01,780

So we're gonna have a close look at those two

264

00:23:02,340 --> 00:23:06,700

But remember that time I built the machine to swing bottles of beer at your head

265

00:23:07,940 --> 00:23:11,060

No, you don't

266

00:23:12,340 --> 00:23:14,340

It's a delicious memory

267

00:23:14,540 --> 00:23:18,900

Coming up on myth busters. Can you really build a leather cannon that works?

268

00:23:21,380 --> 00:23:25,900

Don't try anything you see on the show at home. We're what you call experts

269

00:23:29,300 --> 00:23:33,040

All right, so here's where we're at so far we've tested out the parrot rifle

270

00:23:35,420 --> 00:23:37,700

Which is an all metal barrel cannon

271

00:23:37,940 --> 00:23:43,900

We found out how fast that can fire a cannonball

272

00:23:45,260 --> 00:23:52,780

389 miles per hour well now we're gonna do is test out the Swedish leather cannon in which most of the metal of the barrel has been

273

00:23:52,940 --> 00:23:55,420

Replaced by other materials to make it lighter

274

00:23:57,620 --> 00:24:02,220

Then we'll move on to the Irish leather cannon in which it's all leather

275

00:24:02,260 --> 00:24:06,260

All right, folks what I have here is six ounces of black powder

276

00:24:06,260 --> 00:24:11,300

This is what we're gonna be using to propel our cannonball now when we fired the paragon it was traveling at

277

00:24:11,900 --> 00:24:15,540

389 miles per hour that is fast the same amount of energy

278

00:24:15,540 --> 00:24:19,620

It would be like hitting a baseball going 1200 miles per hour folks

279

00:24:19,620 --> 00:24:27,540

This is something you do not want to play with so with a firm grip on the explosive potential involved and all of the technical jargon

280

00:24:27,540 --> 00:24:31,820

Okay, where's the pokey stick the team lock and load venting

281

00:24:32,820 --> 00:24:37,360

All right loaded, okay, I'm gonna go hot you ready. I'm ready

282

00:24:39,260 --> 00:24:44,300

This is Swedish cannon in three two one

283

00:24:49,500 --> 00:24:51,500

Look at that it was

284

00:24:52,100 --> 00:24:54,100

or did it

285

00:24:54,620 --> 00:24:59,660

Now we came out here some of us thought that this was going to shoot off like a cannon some of us thought it might explode

286

00:25:00,140 --> 00:25:02,140

Pretty much did both

287

00:25:05,260 --> 00:25:09,940

Look at this it just completely blew out the back

288

00:25:13,060 --> 00:25:19,740

One-shot wonder we actually had the cannonball shoot out of one end while the in bits shot out the other

289

00:25:20,460 --> 00:25:22,460

That's not looking too good

290

00:25:23,260 --> 00:25:29,260

But a quick assessment of the targets and the team are much more positive. Hey, it did the job

291

00:25:29,260 --> 00:25:35,100

Yeah, give it up for the Swedish cannon. It didn't make it through the sandbags, but it did make it through the second barrel

292

00:25:35,100 --> 00:25:39,260

And once the numbers are crunched it gets even more interesting

293

00:25:39,260 --> 00:25:45,100

So we tested our Swedish can the same size and weight cannonball the same amount of black powder and getting

294

00:25:46,100 --> 00:25:49,700

667 feet per second, which is over 450 miles an hour

295

00:25:49,820 --> 00:25:58,460

That's 50 miles an hour faster than our parrot gun what I've got to say its performance was equal to or a little bit better

296

00:25:58,740 --> 00:26:02,540

Than the all-metal cannon it had a muzzle velocity that was higher

297

00:26:03,060 --> 00:26:09,440

Maybe it was a tighter pack so that way it shot the ball faster. Who knows we only missed the x-pipe that much

298

00:26:09,820 --> 00:26:13,220

Minor problem. We blew out the breach, but bear in mind

299

00:26:13,340 --> 00:26:16,460

This was our first attempt to make this type of cannon

300

00:26:16,460 --> 00:26:22,540

I'm sure the Swedish didn't get right the first time so as far as a battlefield weapon the Swedish cannon had

301

00:26:22,860 --> 00:26:25,660

Superior maneuverability with very good accuracy

302

00:26:26,620 --> 00:26:31,620

Unfortunately longevity could be a problem and as it turns out historically it was

303

00:26:32,100 --> 00:26:38,460

So in the context of the parrot rifle performance benchmark the lightweight hybrid cannon matched up

304

00:26:38,980 --> 00:26:44,060

Which just leaves the Irish question wheels came off good sign

305

00:26:44,140 --> 00:26:47,020

So we've got six ounces of black powder right ready to load

306

00:26:47,380 --> 00:26:49,660

Black powder a three pound cannonball

307

00:26:50,420 --> 00:26:55,460

That's nice and tight and a barrel that's one inch thick of leather you got all that up

308

00:26:55,460 --> 00:27:03,060

I think you're gonna get boom. All right, everybody clear muzzle from now on this whole idea of building a cannon out of leather

309

00:27:03,060 --> 00:27:05,060

It's absurd run away

310

00:27:05,300 --> 00:27:09,100

Loaded but I mean if you're desperate and that's the only material you have available to you

311

00:27:09,100 --> 00:27:15,340

I guess sure why not try it, but I mean we know how powerful exploding black powder is what Irish leather cannon

312

00:27:15,340 --> 00:27:18,940

All right, this is Irish leather cannon ready the force is involved

313

00:27:18,940 --> 00:27:24,940

I mean is a one inch wall of leather gonna be enough to contain it in order to launch this cannonball

314

00:27:26,140 --> 00:27:31,980

I'm very curious to find out in three my feeling is it's probably not gonna work two

315

00:27:32,660 --> 00:27:34,660

one

316

00:27:39,420 --> 00:27:41,420

Nice

317

00:27:45,340 --> 00:27:47,340

Like

318

00:27:48,260 --> 00:27:51,960

It was more dangerous to be behind this cannon than in front of the camera

319

00:27:53,860 --> 00:27:58,020

Yep, it's pretty clear the Irish cannon failed on all counts

320

00:27:58,460 --> 00:28:05,300

The back end blew out and even with modern glue the barrel unraveled so the guys can't even try again

321

00:28:06,060 --> 00:28:12,300

And what we were looking for for this myth to be confirmed is very simple lethality say the Irish were fighting leprechauns

322

00:28:12,500 --> 00:28:14,500

It might be

323

00:28:16,060 --> 00:28:21,860

We tested the parrot rifle and the Swedish leather cannon and with the same size cannonball and same amount of gunpowder

324

00:28:21,900 --> 00:28:26,180

They were able to launch the ball at 350 to 450 miles per hour

325

00:28:26,700 --> 00:28:33,180

Now as far as the Irish leather cannon goes I can't call that lethal no with the best available information built to those

326

00:28:33,540 --> 00:28:38,260

Specifications this one is busted, but that does not mean we're gonna end here

327

00:28:38,260 --> 00:28:44,700

We are gonna see what it would take to build a working cannon out of nothing, but leather might not be possible

328

00:28:45,020 --> 00:28:49,260

But we're gonna try coming up Jamie brings meat head to life

329

00:28:49,820 --> 00:28:52,340

Before bashing his brain box with a beer bottle

330

00:28:57,220 --> 00:29:01,360

What Adam and Jamie have already seen that as far as concussions go

331

00:29:01,740 --> 00:29:06,740

Contrary to the myth a full bottle smash is worse for you than an empty

332

00:29:08,260 --> 00:29:12,580

But what about other types of head trauma? What about a skull fracture?

333

00:29:13,100 --> 00:29:18,820

To find out Jamie. That's what I'm talking about is taking a piece of pig skull

334

00:29:19,940 --> 00:29:25,220

7 millimeters same thickness as a human skull to calibrate and manufacture a

335

00:29:25,980 --> 00:29:31,140

polyurethane plastic that fractures in exactly the same way as a human skull

336

00:29:31,780 --> 00:29:36,500

Pulled from the pan while pliable. He forms it into shape before it hardens

337

00:29:37,420 --> 00:29:41,820

We've got the base and we've got this insert that goes over this cavity

338

00:29:41,820 --> 00:29:46,060

And when we hit it with a beer bottle like so if we get a fracture

339

00:29:46,500 --> 00:29:54,160

We know that we would have fracture a real skull to get a realistic mass Jamie adds a brain's weight of ground beef

340

00:29:54,160 --> 00:29:56,160

That's it six pounds

341

00:29:56,420 --> 00:30:00,500

Meanwhile Adam has built a bar for the soon-to-breakout bar fight

342

00:30:01,100 --> 00:30:04,700

Welcome to the myth busters bar. Can I interest you in an empty beer?

343

00:30:06,940 --> 00:30:12,940

Which means meat head with his inability to duck is about to get a headache

344

00:30:13,140 --> 00:30:18,500

Mr. Heineman says it's time to bash some heads in and chew some gum and he's fresh out of gum

345

00:30:19,460 --> 00:30:21,460

Take it away. Okay

346

00:30:21,740 --> 00:30:25,420

skull fracture rig and three two one

347

00:30:28,460 --> 00:30:30,460

All hell broke loose

348

00:30:30,460 --> 00:30:38,700

We got broken bottles we got broken head meat spilling out all over the place

349

00:30:39,140 --> 00:30:45,900

Adams no doctor, but broken head and meat spilling out is a fairly accurate diagnosis

350

00:30:47,780 --> 00:30:50,280

Man that is it's clearly

351

00:30:50,980 --> 00:30:56,260

Shattered the skull totally shattered the skull the rig worked. Yep meat head did us proud, huh?

352

00:30:56,260 --> 00:30:59,340

All we need now is to try this with an empty bottle. Yep

353

00:30:59,980 --> 00:31:01,580

More data

354

00:31:01,580 --> 00:31:07,940

More data with a side of sampling at a comparative observation salad coming right up

355

00:31:09,340 --> 00:31:15,020

Empty bottle of beer coming right up buddy. We're gonna do this at least one more time and if it's any consolation

356

00:31:15,700 --> 00:31:18,260

It's gonna hurt you a lot more than it's gonna hurt me

357

00:31:19,300 --> 00:31:25,420

When you're ready empty bottle into skull fracture rig three two one

358

00:31:25,980 --> 00:31:29,160

That's what I'm talking about one

359

00:31:31,940 --> 00:31:35,020

Now you broke it that's why we can't have nice things

360

00:31:36,740 --> 00:31:38,900

No, scratcher no fracture on the skull

361

00:31:40,620 --> 00:31:46,620

The whole purpose of this experiment is to figure out if it's worse to get a full bottle broken over your head or an empty

362

00:31:46,620 --> 00:31:49,180

Bottle broken over your head personally. I want neither

363

00:31:50,020 --> 00:31:56,700

But if I had to choose especially when it comes to skull fractures like this test here the full bottle deliberate more

364

00:31:56,940 --> 00:32:01,860

damaging skull fracturing force in the empty bottle, but we're not done for a puncture examination

365

00:32:02,260 --> 00:32:08,680

Jamie and I know many lacerations in the skull of this meat head and we wonder

366

00:32:09,420 --> 00:32:14,820

Perhaps in the area of lacerations an empty bottle might be worse than a full bottle

367

00:32:14,860 --> 00:32:20,900

We don't know so we're gonna stretch some skin over one of these heads and start hitting that with broken bottles. Yeah

368

00:32:23,820 --> 00:32:28,820

Three down at the bomb range the myth of the Irish all-leather cannon

369

00:32:29,340 --> 00:32:33,860

Took a hiding. I just can't call that lethal. No, I mean that's pathetic

370

00:32:35,060 --> 00:32:37,740

But our team of tanners aren't done yet

371

00:32:38,180 --> 00:32:45,140

They've set themselves the challenge of building an effective viable cannon from nothing but cowhide

372

00:32:45,140 --> 00:32:47,900

I have to massage the leather makes a better cannon

373

00:32:48,300 --> 00:32:55,900

Actually what makes a better leather cannon is a tension to detail and this time around the team is going all out to iron out

374

00:32:55,900 --> 00:32:58,460

The issues from its last outing. All right

375

00:32:58,460 --> 00:33:03,860

So one thing we figured out the other day when we fired off our pure leather cannon when the ball came out it actually

376

00:33:04,380 --> 00:33:10,480

Delaminated the inside of the cannon so what I'm doing right now is scraping up this leather enough so that the glue will

377

00:33:10,480 --> 00:33:14,080

Bite down on this leather and it'll stay together when we fire off the next cannon

378

00:33:14,500 --> 00:33:20,640

So just like everything else on this cannon. We're beefing it up so to speak this is our super breach plug

379

00:33:21,260 --> 00:33:25,540

Made out of 42 layers of leather. This is gonna get rolled into the cannon

380

00:33:25,860 --> 00:33:32,020

Charge goes here cannonball goes here when we set it off. Hopefully it goes like baboom and not like

381

00:33:34,860 --> 00:33:40,820

Now I'm working on the breach section what I've done is take the same cowhide cut it down to two inch wide strips

382

00:33:40,820 --> 00:33:47,620

I'm putting on the contact cement on both sides and then I'm laying those strips lengthwise around the back end of the cannon

383

00:33:47,620 --> 00:33:49,820

This is gonna strengthen up our breach area

384

00:33:49,820 --> 00:33:57,540

So that way it is strong enough to withstand the explosion of black powder in order to get our cannonball to launch with the back end

385

00:33:57,820 --> 00:33:59,820

sufficiently built up glued and

386

00:34:00,060 --> 00:34:04,460

Beaten into submission the team is optimistic about their chances of success

387

00:34:04,860 --> 00:34:08,660

This is the glass chamber. We're talking about a 12 inch diameter

388

00:34:08,660 --> 00:34:15,060

Not only that but the breach has been reinforced with so many straps that we have about that much holding up the back end

389

00:34:15,060 --> 00:34:20,620

I think there might be a possibility that we've made ourselves a working leather cannon

390

00:34:21,260 --> 00:34:23,720

Now I have a few finishing touches

391

00:34:24,260 --> 00:34:26,300

Just you know give it a little bit of beauty

392

00:34:26,900 --> 00:34:33,340

So under a veil of secrecy our material girl applies her fashionable finishing touches

393

00:34:34,780 --> 00:34:38,420

Then it's back down to the bomb range drum roll, please

394

00:34:40,140 --> 00:34:46,620

The big reveal I was getting bored with the plain old leather cannons since we did so many I thought why not

395

00:34:49,420 --> 00:34:51,420

It's a designer

396

00:34:51,580 --> 00:34:54,100

That's crazy that is funny

397

00:34:54,100 --> 00:35:01,500

You just pimp this cannon out it looks the business but can it pack the punch a six ounce black powder punch

398

00:35:01,500 --> 00:35:05,940

When we ignite this it's gonna expand to three 55 gallon drums of gas

399

00:35:06,180 --> 00:35:11,500

That is a lot of energy and that is what's gonna fire our ball out of our cannon or blow our cannon up

400

00:35:12,180 --> 00:35:13,780

Either way, it's gonna be cool

401

00:35:13,780 --> 00:35:19,660

Next violence of the hams may be over but Jamie puts the lotion on the skin

402

00:35:19,700 --> 00:35:26,740

And finally carries disguised our cannon as a purse will the luggage leather be lethal

403

00:35:32,020 --> 00:35:36,140

As far as having a bottle smashed over your head at this point we've looked at concussions

404

00:35:38,060 --> 00:35:44,280

So it is moving around but not near as much as it was with full bottle. Yeah, we've looked at skull fractures

405

00:35:44,640 --> 00:35:46,640

No

406

00:35:47,280 --> 00:35:51,960

Skull fracture no skull fracture, but check out how nasty the lacerations are

407

00:35:52,120 --> 00:35:57,360

But we also need to look at lacerations because after all it's broken glass skin

408

00:35:57,560 --> 00:36:03,600

We're gonna get cut if I'm gonna be testing what happens to someone's scalp when they're hit over the head with a bottle

409

00:36:03,600 --> 00:36:07,960

I need a suitable scalp analog and to find it. Dr.

410

00:36:08,000 --> 00:36:16,600

Frankenheim nummon figures out some scalp attributes he wants to emulate that's moving about the same as the skin over my skull

411

00:36:18,760 --> 00:36:21,480

Poke through it 2.43 pounds

412

00:36:21,880 --> 00:36:31,160

This is very sort of fibrous next he finds the artificial materials with those physical attributes a vinyl epidermis

413

00:36:31,560 --> 00:36:36,400

absorbent subcutaneous layer and of course blood lots of blood

414

00:36:36,760 --> 00:36:43,000

What everywhere it all comes together in a disturbingly accurate avalogue of human skin

415

00:36:43,000 --> 00:36:49,000

Yep, the dermis goes on it like so and when I cut it with any luck, it's gonna bleed

416

00:36:51,560 --> 00:36:58,600

And with that there you go our fake skinned meathead is ready to take one for the team

417

00:36:59,480 --> 00:37:04,980

Let the lacerations begin laceration test with a full beer bottle three two

418

00:37:06,400 --> 00:37:08,400

Oh

419

00:37:19,640 --> 00:37:25,560

There's definitely some cuts there. Yep. Oh, it bleeds nasty nasty

420

00:37:25,560 --> 00:37:32,880

And if it was needed a further graphic illustration of how dangerous it is to use a bottle as a weapon

421

00:37:32,880 --> 00:37:38,800

Put that there and we'll put the other one there and we know that that's our full bottle

422

00:37:39,440 --> 00:37:41,440

compare to the empty one, okay

423

00:37:45,080 --> 00:37:50,920

Okay, here we go laceration test empty beer bottle into our meat buster

424

00:37:52,640 --> 00:37:54,640

Three two one

425

00:37:54,800 --> 00:37:56,800

A

426

00:37:58,360 --> 00:38:05,680

Successful smash and as with the full bottle it's immediately obvious damage was done. I like my fake skin

427

00:38:05,680 --> 00:38:07,680

It's a nice fake skin

428

00:38:07,840 --> 00:38:14,640

And an up close comparison sees very little difference in the damage to that skin between the two tests

429

00:38:14,640 --> 00:38:17,720

I don't know about you, but I look at these and they look pretty much equivalent to me

430

00:38:17,720 --> 00:38:21,040

Yeah, give or take a nick or two. It's the same. Yeah

431

00:38:22,040 --> 00:38:27,900

The original myth is that having an empty bottle broken over your head is worse for you than having a full bottle broken over your head

432

00:38:28,160 --> 00:38:31,080

Well from our testing from the standpoint of your brains

433

00:38:31,080 --> 00:38:32,200

It's not true

434

00:38:32,200 --> 00:38:37,880

You'll get a much worse concussion from a full bottle than an empty one and also from our testing on bones

435

00:38:37,920 --> 00:38:44,960

The full bottle is also worse. It's much more likely to cause a skull fracture than an empty bottle now with the skin laceration test

436

00:38:45,360 --> 00:38:50,920

Actually for the first time they're about even but that still doesn't make the statement that the empty bottle is worse

437

00:38:51,440 --> 00:38:56,520

Supportable so it's still not looking very good. In fact, I don't most say it's busted

438

00:38:58,000 --> 00:39:01,560

Okay, the myth that it's worse to have an empty bottle broken over your head than a full bottle

439

00:39:01,560 --> 00:39:04,560

Let's recap where we stand from the standpoint of your brains

440

00:39:04,560 --> 00:39:10,040

It's busted from the standpoint of your skull bone also busted from the standpoint of your skin

441

00:39:10,280 --> 00:39:14,120

No difference. Well, you know where that leaves us myth busted totally busted

442

00:39:22,040 --> 00:39:24,040

You

443

00:39:28,280 --> 00:39:29,080

Carrie

444

00:39:29,080 --> 00:39:33,680

Grantentory are about to find out if leather can be a lethal cannon

445

00:39:34,160 --> 00:39:38,800

This is our target. We have a barrier of milk backed by a triangulation of three water barrels

446

00:39:39,080 --> 00:39:44,280

Why milk? Well because it's gonna look really cool on high speed when our cannonball crashes into it

447

00:39:44,280 --> 00:39:47,680

And speaking of high speed with the aid of the high speed and this scale here

448

00:39:47,680 --> 00:39:53,520

We're going to be able to catch the velocity of the ball and see if it matches our parrot gun and finally here

449

00:39:53,520 --> 00:39:59,800

We have our designer inspired ultimate completely reinforced 100% genuine leather cannon

450

00:40:00,040 --> 00:40:04,280

If only the Irish had something this stylish at the siege of Balli Nally Castle

451

00:40:04,640 --> 00:40:08,720

Well, who knows if the cannon would have exploded, but at least they'd be fighting in style

452

00:40:09,040 --> 00:40:14,000

However, it's not style but performance substance that ultimately matters

453

00:40:14,600 --> 00:40:19,120

Remember the benchmark we're using is the parrot rifles muzzle velocity of

454

00:40:20,040 --> 00:40:24,460

389 miles per hour plus it has to be capable of multiple

455

00:40:25,120 --> 00:40:27,120

successful fire

456

00:40:27,120 --> 00:40:29,400

Man, this is the prettiest can I ever seen

457

00:40:29,960 --> 00:40:32,280

Carrie's disguise your cannon is a purse

458

00:40:32,840 --> 00:40:40,520

All it needs now is Jamie's favorite slippery solution. I saw this on dirty jobs once really yeah, except for it was a cow

459

00:40:40,560 --> 00:40:43,080

Isn't it yeah, whatever don't worry Betsy

460

00:40:44,840 --> 00:40:51,520

So why are we lubing up the barrel? Well the last time we tried the Irish leather cannon built to historical specifications

461

00:40:51,520 --> 00:40:56,280

The cannonball had a difficult time getting out of the barrel and it delaminated the innermost

layer

462

00:40:56,320 --> 00:41:02,280

You don't want that to happen this time. So we're adding lube and hopefully it'll go shooting right out the end

463

00:41:02,920 --> 00:41:04,920

Are you in? Yep

464

00:41:05,320 --> 00:41:07,720

That's it. Okay, let's do it. I

465

00:41:08,560 --> 00:41:10,560

Think we have a very good chance

466

00:41:11,160 --> 00:41:14,240

80% at least the other 20% is it explodes

467

00:41:15,000 --> 00:41:19,360

So it's time to find out if the bling leather cannon can

468

00:41:20,080 --> 00:41:22,080

Here we go

469

00:41:22,240 --> 00:41:26,640

Inspired cannon three two one

470

00:41:38,080 --> 00:41:40,080

Oh

471

00:41:45,520 --> 00:41:47,520

The reaction says it all

472

00:41:50,800 --> 00:41:54,440

From back behind the blast shields the test looks to be a success

473

00:41:54,520 --> 00:41:59,680

But up close the evidence begins to contradict their initial reaction

474

00:42:00,760 --> 00:42:02,760

Punch through the cart no problem

475

00:42:03,040 --> 00:42:05,040

Hey

476

00:42:05,320 --> 00:42:12,840

Unlike the parrot rifle which easily punched through two water barrels the leather cannon only just pierced the milk cart

477

00:42:14,000 --> 00:42:16,640

You're definitely gonna give somebody a bruise with that

478

00:42:18,280 --> 00:42:26,360

I'll leave Thaladee assessment that's backed up by the numbers from the high speed. So I've got 52 point five miles per hour

479

00:42:26,560 --> 00:42:31,560

Wow, you could drive faster than that cannonball came out of the cannon

480

00:42:31,560 --> 00:42:35,600

Yep, but look it's entirely made out of leather. He's right. That is awesome

481

00:42:35,600 --> 00:42:42,600

The less than lethal muzzle velocity was caused by what is the final nail in the leather cannon coffin the

482

00:42:43,160 --> 00:42:45,160

delamination of the barrel and

483

00:42:45,240 --> 00:42:50,040

Deformation of the combustion chamber and that can only mean one thing

484

00:42:50,400 --> 00:42:53,120

It looked like it was gonna be plausible for a second there

485

00:42:53,120 --> 00:42:58,520

But you can only get one shot out of it. I think this one's busted busted that man

486

00:42:58,880 --> 00:43:03,120

What a way to go out this looking cool. Yes, we got one good shot out of it

487

00:43:11,520 --> 00:43:15,400

Leather it's good for fashion not good for artillery