

1

00:00:00,000 --> 00:00:07,560

I know it looks like we have fun on this show, but we spend weeks and sometimes months planning how to do our mitts safely

2

00:00:07,560 --> 00:00:09,200

So please

3

00:00:09,200 --> 00:00:11,200

Don't try this at home

4

00:00:14,480 --> 00:00:16,600

On this episode of mythbusters

5

00:00:18,480 --> 00:00:20,480

Adam and Jamie have a blast

6

00:00:24,440 --> 00:00:29,520

Testing the cinematic cliché that you can dive underwater building your body and

7

00:00:30,000 --> 00:00:33,360

Your mind to survive an above water boom

8

00:00:35,320 --> 00:00:39,080

Yeah, meanwhile Carrie Grant and Tori

9

00:00:42,600 --> 00:00:47,440

Let their trigger fingers do the talk science gets more fun when I get a bigger gun

10

00:00:49,200 --> 00:00:51,800

To find out if you can bulletproof a car

11

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

I'm having an AT moment

12

00:00:55,480 --> 00:00:57,480

With nothing but

13

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

I

14

00:01:05,720 --> 00:01:07,720

Don't savage

15

00:01:07,880 --> 00:01:14,520

And Jamie Heinemann we're gonna have an adventure between them more than 30 years of special effects experience

16

00:01:15,880 --> 00:01:17,320

Joining them

17

00:01:17,320 --> 00:01:24,320

Grant immahara. It's lethal people Carrie Byron, but at least we still have good chemistry and Tori Bellachie

18

00:01:24,920 --> 00:01:31,200

Crashes and fire this is awesome. They don't just tell the myths they put them to the test

19

00:01:42,240 --> 00:01:43,640

So what's the story?

20

00:01:43,640 --> 00:01:49,440

Well, I've been thinking wouldn't it be cool if we were action heroes in our own movie and some bad guys were trying to blow

21

00:01:49,440 --> 00:01:51,440

Us up, but we managed to escape

22

00:01:51,680 --> 00:01:55,240

Is that a harp I'm hearing shush here comes a clip

23

00:01:57,920 --> 00:02:00,400

It's a climactic cinema cliche

24

00:02:01,400 --> 00:02:03,920

our heroes are trapped on a boat and

25

00:02:04,360 --> 00:02:06,360

A bomb's about to explode

26

00:02:06,720 --> 00:02:10,000

To escape certain death they take the punch

27

00:02:12,200 --> 00:02:16,920

And after a huge kaboom resurface completely unharmed

28

00:02:17,480 --> 00:02:23,940

So you're wondering whether diving underwater could help protect you from an injury in the case of an explosion

29

00:02:24,800 --> 00:02:26,800

exactly

30

00:02:27,000 --> 00:02:29,000

Sounds like a blast a

31

00:02:29,880 --> 00:02:34,280

Shockwave is created when the rapidly expanding gases inside an explosion

32

00:02:35,080 --> 00:02:40,820

Travel faster than the speed of sound and it's this shock front that causes a wave of destruction

33

00:02:41,520 --> 00:02:45,960

But can you avoid imminent annihilation by leaping into water?

34

00:02:46,440 --> 00:02:51,880

Well to find out the mythbusters are hunkering in the bunker for a proof of concept

35

00:02:51,880 --> 00:02:58,640

I put together this bifurcated tank with a plan to fill this half with water and that half with dry ice fog or

36

00:02:58,800 --> 00:03:02,640

Air that we can visualize we're gonna put a firecracker right up here in the center

37

00:03:03,720 --> 00:03:10,880

Explode it and hopefully we'll be able to view that same shockwave in the two different media and see if there's a difference on the high speed camera

38

00:03:11,480 --> 00:03:18,800

And for that Jamie's turn to string theory these will hang in the water and move if a shockwave

hits

39

00:03:19,520 --> 00:03:22,280

With the tanks filled and a firecracker primed

40

00:03:23,000 --> 00:03:25,480

Standby for mayhem in miniature

41

00:03:26,640 --> 00:03:28,640

Everything's perfect

42

00:03:31,720 --> 00:03:34,280

I saw the water move. Let's see how it looked on the high speed

43

00:03:35,680 --> 00:03:40,280

But a closer look at the high speed reveals not much actually

44

00:03:40,880 --> 00:03:44,500

I think we need something bigger than this firecracker. I think we do

45

00:03:45,400 --> 00:03:49,360

Officer Smith, I think we need something a little bigger. Can you hook us up?

46

00:03:52,280 --> 00:03:54,280

The M80

47

00:03:54,840 --> 00:03:56,840

That ought to do it

48

00:03:57,200 --> 00:04:02,320

With shockwaves apparently size matters cue the M80

49

00:04:03,480 --> 00:04:05,480

Come on, baby

50

00:04:05,920 --> 00:04:07,920

Oh

51

00:04:09,520 --> 00:04:17,680

That was loud and interestingly I saw the fog move but not the water. Well, let's check it out on high speed. I

52

00:04:19,480 --> 00:04:23,440

Didn't see much because you I'm seeing the smoke move around

53

00:04:24,320 --> 00:04:28,880

See that divot there. Remember, they're looking for proof that a shockwave

54

00:04:29,720 --> 00:04:34,640

differently in water to air, but the shockwaves aren't showing up on the close-up

55

00:04:36,120 --> 00:04:41,400

So for a bigger boom, it's back to officer Smith the M1000

56

00:04:42,960 --> 00:04:45,200

More but a hundred times more

57

00:04:48,560 --> 00:04:53,280

Hopefully that should tie up Janie's loose threads. Oh, it's getting close

58

00:04:54,600 --> 00:04:56,600

There comes

59

00:04:56,880 --> 00:05:05,680

Whoa, I think we're going to have seen something I think so. Oh did that blow the door open?

60

00:05:08,040 --> 00:05:12,040

There's water on the ceiling that's always a good sign

61

00:05:16,400 --> 00:05:22,440

But once again the high-speed replay has the same problem, there's no clear shot of the shockwave

62

00:05:23,360 --> 00:05:27,280

It's reacting but they seem to be reacting differently somehow

63

00:05:27,280 --> 00:05:29,400

Well, they're not telling us what we want to see

64

00:05:29,400 --> 00:05:32,120

I think we're gonna have to concoct a different test if we're gonna learn

65

00:05:32,440 --> 00:05:37,680

Whether or not there's a difference between a shockwave in the water and a shockwave in the air. I think you're right. We're done here, okay?

66

00:05:43,840 --> 00:05:45,840

Every day is the 4th of July

67

00:05:46,560 --> 00:05:52,960

Next up the team calls for directory assistance

68

00:05:54,640 --> 00:05:56,640

So phone book freedom, what is this one all about?

69

00:05:57,000 --> 00:06:01,160

Okay, so this myth comes from a spy TV show and they say that if you're desperate and penniless

70

00:06:01,320 --> 00:06:05,400

There is an easy way to make your vehicle bulletproof using phone books

71

00:06:05,720 --> 00:06:06,440

That's right

72

00:06:06,440 --> 00:06:11,760

If you put the phone books in the panels of your car you can actually stop non armor piercing rounds easily

73

00:06:12,000 --> 00:06:14,600

Okay, I can see how that could work the bullet hits the car door

74

00:06:14,600 --> 00:06:18,200

It's the metal first absorbs most of the energy in the rest gets absorbed by the phone books

75

00:06:18,200 --> 00:06:21,680

It could work. Wow sounds like they really phoned this one in

76

00:06:24,760 --> 00:06:26,760

Well according to this small screen

77

00:06:27,360 --> 00:06:35,400

Spice scene you can bulletproof by numbers just one layer of phone books inside the doors and it's a free ride to safety

78

00:06:36,040 --> 00:06:40,960

Okay, this one should be pretty simple. We get a bunch of car doors a bunch of phone books shoot out and see if they're bulletproof

79

00:06:40,960 --> 00:06:43,640

Yeah, that's pretty much it but just to be thorough

80

00:06:43,720 --> 00:06:48,920

We should fire a bunch of different types of guns because in the real world you never know what you're gonna be up against

81

00:06:48,920 --> 00:06:51,920

All right. Well, I think our first trip should be the junkyard and we'll get some doors

82

00:06:53,080 --> 00:06:58,600

They'll test this myth by the book so first things first they need something to stuff

83

00:07:00,400 --> 00:07:02,400

Okay, my way is not working

84

00:07:04,360 --> 00:07:06,360

So we got four doors off of this car

85

00:07:06,800 --> 00:07:10,480

That's pretty much all we need to take down to the range. They're already hollowed out

86

00:07:10,520 --> 00:07:14,100

So we can just stick the phone books in there. This should be a piece of cake

87

00:07:16,920 --> 00:07:24,280

Back at the shop the cake comes together in what has to be the most low-tech build in Mythbusters history

88

00:07:24,640 --> 00:07:26,640

Wait round hole square peg

89

00:07:27,160 --> 00:07:32,800

This doesn't seem to fit and with one layer of phone books wedged inside the doors

90

00:07:32,840 --> 00:07:34,840

They head for the shooting range

91

00:07:34,840 --> 00:07:39,040

Guys ready to start shooting to hit the books for this experiment

92

00:07:39,040 --> 00:07:41,520

We have car doors lined with a single layer of phone books

93

00:07:41,520 --> 00:07:46,240

Which according to the myth is all it took to stop a bullet and on this side we've painted a target

94

00:07:47,640 --> 00:07:52,840

Then we'll set up the doors at the end of the firing range and we'll start shooting out with a variety of guns from 30 feet away

95

00:07:54,320 --> 00:07:57,360

We'll be firing a 9 millimeter handgun a

96

00:07:58,160 --> 00:08:00,160

357 magnum

97

00:08:00,160 --> 00:08:02,160

45 caliber finally

98

00:08:02,880 --> 00:08:04,880

12-gauge shotgun

99

00:08:05,360 --> 00:08:09,160

Right and before they take a shot at the myth how about a prediction?

100

00:08:09,480 --> 00:08:11,480

We're starting out with the 9 millimeter handgun

101

00:08:11,840 --> 00:08:17,120

I'm thinking two and a half inches of phone book eighth of an inch on the outside of the car door

of sheet metal

102

00:08:17,680 --> 00:08:23,360

Yeah, we could be bulletproof right now. All right. This is the 9 millimeter the smallest round in our arsenal

103

00:08:23,720 --> 00:08:25,720

Here we go

104

00:08:26,500 --> 00:08:32,440

There's an entry hole, but no exit for the 9 millimeter

105

00:08:34,680 --> 00:08:36,680

Meaning that's one for the books

106

00:08:36,840 --> 00:08:41,280

But can they get the same result with gun number two firing at

107

00:08:42,320 --> 00:08:46,040

1,450 feet per second. It's the 357 magnum

108

00:08:48,160 --> 00:08:53,840

Nice shot text a clean strike, but what's the verdict? No way

109

00:08:54,160 --> 00:08:59,320

So it didn't make it all the way through that means the phone book actually made this bullet proof

110

00:09:00,600 --> 00:09:05,900

The phone books blocked the 9 millimeter they blocked the 357 magnum, but I've got one of these

111

00:09:06,560 --> 00:09:11,440

45 caliber if this doesn't make it through I've been really surprised going hot

112

00:09:15,720 --> 00:09:17,920

The bullet punched through the front panel

113

00:09:18,680 --> 00:09:20,680

But the phone book

114

00:09:21,960 --> 00:09:25,320

That's astounding this myth is looking really good

115

00:09:26,400 --> 00:09:31,440

That's three zero to the phone books the handgun rounds didn't penetrate

116

00:09:31,520 --> 00:09:37,560

But next it's the toughest round so far the 12 gauge shotguns deer slug

117

00:09:39,560 --> 00:09:41,400

Nice

118

00:09:41,400 --> 00:09:45,840

Tori's aim is dead on resulting in the first phone book casualty

119

00:09:47,960 --> 00:09:52,200

So the 12 gauge deer slug went right through the door it went through the front panel the steel

120

00:09:52,640 --> 00:09:56,960

Reinforcement the phone book and the inside panel now that is an intense shot

121

00:09:57,680 --> 00:10:02,000

Intense is right with the shotgun firing a 385 grain slug at

122

00:10:02,760 --> 00:10:06,840

1,850 feet per second the phone book at last met its match

123

00:10:09,200 --> 00:10:14,680

But now it's gonna meet its maker cuz grads packing an M14 assault rifle

124

00:10:15,680 --> 00:10:17,680

Okay, you guys ready

125

00:10:25,160 --> 00:10:27,840

Well, no surprise that the bull went right through the door

126

00:10:27,840 --> 00:10:29,840

I think that didn't even slow down

127

00:10:30,040 --> 00:10:35,840

More like a tour through the door with a muzzle velocity a thousand feet a second faster than the shotgun

128

00:10:35,840 --> 00:10:42,000

It's no surprise that this round also sailed clean through but where does that leave the myth?

129

00:10:42,000 --> 00:10:48,040

So this myth is about non-hour piercing rounds being stopped by car doors filled with phone books like these

130

00:10:48,040 --> 00:10:53,520

This is true the 9 millimeter the 357 magnum and the 45 caliber all handguns

131

00:10:53,680 --> 00:11:00,680

Once you get anything larger than a handgun the bullets go right through so this myth could be busted right here right now

132

00:11:00,880 --> 00:11:04,800

Or is it coming up next in the dive to survive?

133

00:11:05,440 --> 00:11:13,280

Good morning the myth busters make boom for improvement

134

00:11:22,440 --> 00:11:28,720

In this movie myth our heroes take cover underwater to escape injury from a bomb

135

00:11:29,240 --> 00:11:32,040

But could taking a dive save your life

136

00:11:32,680 --> 00:11:41,040

It's time to up the end at the myth busters home away from home a good day to blow some crap up, huh?

137

00:11:41,360 --> 00:11:43,040

You bet

138

00:11:43,040 --> 00:11:47,920

Blow crap up they will but this time instead of trying to visualize the shockwave

139

00:11:47,960 --> 00:11:54,800

They'll measure it this plumbing equipment here is a matrix for holding together our key piece of detection equipment in this myth

140

00:11:54,800 --> 00:12:01,880

And that is this an oscico rupture disc basically a calibrated piece of aluminum foil when this is properly held

141

00:12:01,880 --> 00:12:07,600

In the plumbing and it finds itself in an environment over 13 pounds per square inch of pressure it will

142

00:12:08,560 --> 00:12:14,640

Burst telling you that if you were standing where this disc was you'd encounter physical injury

143

00:12:15,400 --> 00:12:20,560

And our regular explosives expert JD has the C4 to test them

144

00:12:21,080 --> 00:12:23,080

That may blow up but it

145

00:12:23,400 --> 00:12:25,400

JD it's not very pretty

146

00:12:25,600 --> 00:12:28,760

Better make a one like the cartoons. Yeah

147

00:12:29,760 --> 00:12:32,680

Have no doubt in my mind you're gonna get that roadrunner this time

148

00:12:33,760 --> 00:12:37,880

Then it's over to Adam to explain exactly how this all fits together

149

00:12:38,400 --> 00:12:43,180

We're going to ignite this calibrated block of C4 and it will generate a pressure wave

150

00:12:43,180 --> 00:12:48,960

A quite a dangerous pressure wave that will burst some but not all of the burst discs in this line

151

00:12:49,040 --> 00:12:55,560

Let's say it bursts all of them up to here and none after that that tells me that this point is the farthest point at which

152

00:12:55,560 --> 00:13:00,800

That explosive generates a dangerous injurious amount of pressure. Are you ready?

153

00:13:01,160 --> 00:13:03,160

All right JD go ahead and light it

154

00:13:03,760 --> 00:13:05,760

This is calculating

155

00:13:05,760 --> 00:13:07,760

injurious distance of C4

156

00:13:08,440 --> 00:13:11,440

We're gonna feel this one. Yeah, I think so

157

00:13:18,800 --> 00:13:22,920

Wow that was a rush. No wake you up in the morning. Let's go check them out

158

00:13:23,560 --> 00:13:31,620

Great one act me explosion down and the mythbusters have the dangerous distance data they need

159

00:13:32,120 --> 00:13:34,120

All the way up to here

160

00:13:34,440 --> 00:13:41,260

Ten feet is it then that's our danger zone our danger zone. All right ten feet now. It's time for phase two

161

00:13:44,480 --> 00:13:50,760

What we want to know is how well an explosion that occurs in the air can make the transition

162

00:13:51,480 --> 00:13:57,760

Into the water and how potentially dangerous that it would be and to find out the guys rejig their rig

163

00:13:58,200 --> 00:14:05,000

So that for blast to it can simultaneously monitor the effect of the shockwave in air and in water

164

00:14:05,320 --> 00:14:10,280

So what's this test about? It's actually pretty simple one burst disc in air

165

00:14:10,560 --> 00:14:17,260

One burst disc in water if there's any truth to this myth what we should see when we set up that explosive is that this first

166

00:14:17,260 --> 00:14:19,260

Disc will blow and this one will not

167

00:14:20,040 --> 00:14:21,720

Okay, take it up

168

00:14:21,720 --> 00:14:26,220

Well, it's time to put that theory to the test with the same amount of C4

169

00:14:26,420 --> 00:14:30,920

10 feet away from the two pressure discs go for it JV light it up

170

00:14:32,980 --> 00:14:38,920

There it goes I don't know about you, but I'm predicting that there will be a difference. I think so

171

00:14:39,400 --> 00:14:43,020

I'm just thinking about the shockwave. That's a this is invigorating

172

00:14:49,400 --> 00:14:51,400

Oh

173

00:14:56,800 --> 00:15:03,080

Good morning, yep, I should do it now to find out how the burst discs compare

174

00:15:08,320 --> 00:15:10,320

To blown burst discs

175

00:15:11,360 --> 00:15:13,520

To intact burst discs

176

00:15:14,260 --> 00:15:22,740

Nice, that's what I call a result there might be something to this after all at a look at the high speed confirms Jamie's suspicions

177

00:15:23,580 --> 00:15:28,760

This high speed shot tells the whole story the rupture disc in the open air is burst immediately and

178

00:15:28,980 --> 00:15:32,780

Cleaned through as opposed to the one in the water which is affected

179

00:15:32,780 --> 00:15:38,820

But only with a ripple and an instant later now what this tells us is that the water is actually

180

00:15:39,320 --> 00:15:44,240

Diminishing the shockwave it's slowing it down and making it much less powerful

181

00:15:44,920 --> 00:15:51,240

It's looking good for the myth the water does appear to dampen the shockwave and reduce the risk of injury

182

00:15:51,240 --> 00:15:56,100

But they won't know for sure until they go full scale. So based on this test

183

00:15:56,100 --> 00:16:02,200

I figure we should take tanks of water out whenever we do tests with explosives, you know, get into the tanks

184

00:16:02,240 --> 00:16:06,000

That's a great idea. I know that one was cool

185

00:16:06,180 --> 00:16:11,540

And if you want to see what I'm talking about go to discovery comm slash myth busters and check it out

186

00:16:17,700 --> 00:16:24,980

When you're making a quick getaway from gun totem bad guys a little extra protection goes a long way

187

00:16:25,220 --> 00:16:29,020

But so far in this budget bullet proofing saga

188

00:16:30,980 --> 00:16:33,500

The phone numbers just don't add up

189

00:16:34,200 --> 00:16:41,800

The myth is that a single layer of phone books when added to a car door will make an impenetrable barrier to bullets

190

00:16:41,840 --> 00:16:47,000

This is busted both our deer slug and our m14 round went clean through

191

00:16:50,320 --> 00:16:53,280

And though that may be true for a single layer of phone books

192

00:16:53,280 --> 00:16:58,480

How many phone books deep are we gonna have to get to make our car bulletproof for the high-powered ammunition?

193

00:16:58,700 --> 00:17:04,460

So we're gonna carry on it's obvious that we need more phone books

194

00:17:04,460 --> 00:17:10,540

So what we're gonna do is we're gonna take the same doors stuff for the phone book and add more phone books tend to be exact

195

00:17:10,940 --> 00:17:15,740

And see if that's enough to make our cars bulletproof against these higher powered weapons

196

00:17:16,540 --> 00:17:21,380

The mythical one layer of phone books is busted, but by how much?

197

00:17:23,100 --> 00:17:27,540

Okay, this is deer slug into 10 phone books behind the car door

198

00:17:28,540 --> 00:17:30,540

I

199

00:17:30,980 --> 00:17:35,860

Shack once again the slug blew through the door phone book combo

200

00:17:35,940 --> 00:17:41,140

But how many more books did it take to stop it just one into the auto section?

201

00:17:43,860 --> 00:17:48,060

So it looks like two phone books is all you would need to stop a deer slug not bad

202

00:17:48,060 --> 00:17:52,580

But there's still that top gun to go. I think this is gonna cut right through

203

00:17:53,520 --> 00:17:58,840

Well hold the phone because it looks like Tori may have been wrong

204

00:17:59,180 --> 00:18:02,280

There it is still warm and we got

205

00:18:03,080 --> 00:18:08,200

Almost to the back side of the first phone book plus the one nestled inside the door

206

00:18:08,240 --> 00:18:15,560

That's still only two phone books to stop an M14 bullet. I thought it would easily have gone through half that stack

207

00:18:15,560 --> 00:18:17,380

I thought it was gonna go through the whole stack

208

00:18:17,400 --> 00:18:22,440

I mean that's it two layers of phone books and you can turn your car into a bulletproof vehicle

209

00:18:23,920 --> 00:18:27,160

After a hard day shooting the myth is busted

210

00:18:27,160 --> 00:18:31,920

But only just and that's giving the mythbusters something to think about

211

00:18:32,760 --> 00:18:36,080

So the idea that you can bulletproof a car door with one phone book

212

00:18:36,320 --> 00:18:40,120

Totally busted. Yes, but I don't think we can leave it there. Go on

213

00:18:40,120 --> 00:18:44,000

I think since we were able to stop all the bullets using two phone books in the doors

214

00:18:44,020 --> 00:18:50,500

This whole idea of a bulletproof car using phone books is possible. I say we try to build one a whole car. Yeah

215

00:18:51,140 --> 00:18:55,500

Completely bulletproof. Yep. I love it. Okay, but I see there are two problems

216

00:18:55,780 --> 00:19:00,380

First we've established that it takes two phone books to armor a door. What about the windows?

217

00:19:00,980 --> 00:19:04,940

Second we may need so many phone books that the car is too heavy to drive

218

00:19:05,060 --> 00:19:07,980

So we find out how many phone books it takes to bulletproof a window

219

00:19:07,980 --> 00:19:11,100

We do a little math and we find out if you load this thing up with phone books

220

00:19:11,100 --> 00:19:14,400

Well, it's still drive. All right, and then we build a bulletproof car

221

00:19:16,080 --> 00:19:21,200

Touries all fired up, but before any overhauling they're looking into those windows

222

00:19:22,760 --> 00:19:29,580

Just how many phone books will it take to make them stop a slug to find out carry and Tori position

223

00:19:29,580 --> 00:19:34,960

10 phone books behind the glass and take aim with the mighty M14

224

00:19:34,960 --> 00:19:37,760

Three two one

225

00:19:39,720 --> 00:19:44,500

It looks like it went through three phone books, let's go take a look. Oh, yeah

226

00:19:45,060 --> 00:19:47,060

Three phone books is right

227

00:19:49,940 --> 00:19:54,820

But there's a problem three phone books deep inside the car is

228

00:19:55,340 --> 00:19:57,340

Pretty much gonna crowd the driver out

229

00:19:57,340 --> 00:20:02,960

Right, there's not much point in bulletproofing if the driver won't fit so to give him some room

230

00:20:02,960 --> 00:20:07,780

They try a sandwich formation two on the outside and one on the inside

231

00:20:09,860 --> 00:20:12,460

In three two one

232

00:20:14,060 --> 00:20:17,940

But unfortunately it blasted out the backside

233

00:20:19,020 --> 00:20:22,820

The bullet makes a meal of the sandwich, but that's crazy

234

00:20:22,820 --> 00:20:27,180

I mean, it's the same amount of material that it's passing through its three phone books and a pane of glass

235

00:20:28,040 --> 00:20:31,640

Well, I guess that means that when the bullet hits the window

236

00:20:31,640 --> 00:20:37,320

Which is a hard surface that deforms and then just gets absorbed into the back three and that's key

237

00:20:37,520 --> 00:20:43,760

When the bullet hits a rigid surface like metal or glass first it expands a large part of its energy

238

00:20:44,040 --> 00:20:47,040

But when the bullet hits the flexible phone books first

239

00:20:47,480 --> 00:20:51,840

Less energy is expended and it can continue along its trajectory

240

00:20:52,740 --> 00:20:58,760

So what they need to know now is how many phone books in front of the glass will stop the slug

241

00:21:00,260 --> 00:21:02,780

In three two one

242

00:21:04,340 --> 00:21:10,580

Did that go all the way through I sure hope not well actually the bullet made it through four and a half phone books

243

00:21:11,140 --> 00:21:13,900

More than double the phone books needed for the doors

244

00:21:14,300 --> 00:21:20,260

Do you know how heavy it's gonna be to cover every single window surface with five phone books?

245

00:21:20,320 --> 00:21:23,700

That's better than ten phone books. Okay, bright side boy

246

00:21:26,360 --> 00:21:28,720

After the break Adam and Jamie find out

247

00:21:30,400 --> 00:21:36,920

Wow that was a lot if it really is better down where it's wet

248

00:21:44,800 --> 00:21:47,800

With a bomb about to blow and no escape

249

00:21:48,740 --> 00:21:54,780

With taking the plunge protect you from the blast Adam and Jamie are putting that to the test

250

00:21:57,340 --> 00:21:58,940

Good morning

251

00:21:58,940 --> 00:22:04,460

We've just seen that there does appear to be an advantage to being submerged when a bomb goes off the rupture disc

252

00:22:04,460 --> 00:22:08,700

That was under the water was intact the one that was in the air was ruptured

253

00:22:09,180 --> 00:22:15,860

Obviously we used a small tank though and the scale of the tank and the nature of the tank could have affected our results

254

00:22:15,880 --> 00:22:21,480

So they're not definitive what we need to do now is go full-scale in an open body of water

255

00:22:21,480 --> 00:22:27,120

And we're creating an aquatic rig that will give us the measurements we need both above and below water

256

00:22:28,280 --> 00:22:31,320

This is a complicated rig with lots of parts

257

00:22:35,120 --> 00:22:39,080

Some that float and some that don't yeah

258

00:22:40,800 --> 00:22:44,480

I know it doesn't look like much but trust me once this stuff all goes together

259

00:22:44,500 --> 00:22:48,540

You will see that there is a method to the madness you don't have to take my word for it

260

00:22:48,540 --> 00:22:51,220

Just probably one more commercial break and you'll get to see it all

261

00:22:51,860 --> 00:22:54,860

Well, actually you don't even have to wait that long

262

00:22:56,380 --> 00:22:59,320

Let's go scuba diving and blowing some stuff up all right

263

00:23:00,380 --> 00:23:05,140

With the rig flat pack it's off to location. It's a lovely lake isn't it in fact?

264

00:23:05,140 --> 00:23:11,220

It's not actually a lake. It's a man-made pit pit 232 to be exact here at Rancho Arroyo Seco

265

00:23:11,600 --> 00:23:15,920

And the fact that it has no wildlife at all living in it makes it ideal for what?

266

00:23:16,760 --> 00:23:18,760

Yes blowing stuff up

267

00:23:19,560 --> 00:23:21,560

It's gonna be a good day

268

00:23:22,160 --> 00:23:28,640

But before they start blowing anything up they've got to get their rig in position and make sure it floats

269

00:23:29,240 --> 00:23:31,240

It's a dock

270

00:23:31,600 --> 00:23:34,160

The other one will be just peachy

271

00:23:34,920 --> 00:23:39,960

So how are we gonna test the myth that jumping in the water can protect you from an explosion in full-scale?

272

00:23:40,740 --> 00:23:43,340

Well, it all starts with a body of water and

273

00:23:44,260 --> 00:23:49,940

Continues with this platform which soon will have various types of explosives placed right where I'm sitting

274

00:23:50,500 --> 00:23:58,260

For measurement, we're using Oseco rupture discs and we're mounting them in these things and they're calibrated for 13 psi

275

00:23:58,260 --> 00:24:00,260

Which is our threshold for human injury

276

00:24:01,180 --> 00:24:05,100

We'll be deploying our rupture disc masks at five

277

00:24:05,740 --> 00:24:06,780

ten

278

00:24:06,800 --> 00:24:09,600

Twenty and fifty feet away from the explosions

279

00:24:10,280 --> 00:24:12,280

We're gonna be mounting these things

280

00:24:13,040 --> 00:24:16,680

Like so on our floating mass at five feet above water

281

00:24:24,400 --> 00:24:28,720

And if the myth is true if jumping in the water really can protect you from an explosion

282

00:24:28,720 --> 00:24:35,800

We should find that one of our masks has its in-air disc burst, but the ones underwater intact

283

00:24:36,920 --> 00:24:43,040

And for an in-depth result they do three tests with 50 pounds of three different explosives

284

00:24:43,800 --> 00:24:44,940

starting with

285

00:24:44,940 --> 00:24:46,000

gasoline

286

00:24:46,000 --> 00:24:49,400

These are the buttons arm and fire when I push these

287

00:24:49,800 --> 00:24:53,200

50 pounds of gasoline on that tripod behind me are gonna go boom

288

00:24:53,520 --> 00:24:58,080

Will it demonstrate an improvement to being underwater supposed to above water? I don't know

289

00:24:59,400 --> 00:25:04,800

Well, there's only one way to find out you ready. I'm ready. I've had my coffee

290

00:25:05,580 --> 00:25:07,420

Good to blow

291

00:25:07,420 --> 00:25:12,740

With the gas bombing away on the surface of the lake Jamie utters those familiar words

292

00:25:13,700 --> 00:25:17,700

Fire in the hole fire in the hole fire in the hole

293

00:25:19,500 --> 00:25:23,900

And Adams on the button three two one

294

00:25:27,620 --> 00:25:29,700

That was a lot it was

295

00:25:30,080 --> 00:25:39,040

All of our little holders are still in place, but the platform is gone

296

00:25:41,080 --> 00:25:48,440

The pressure away from the gasoline may have destroyed the floating platform, but more importantly how did the burst discs fair?

297

00:25:50,360 --> 00:25:57,360

Above and below the water at 50 feet 20 feet and 10 feet. They're all intact no ruptures

298

00:25:59,840 --> 00:26:01,840

are intact

299

00:26:02,440 --> 00:26:09,120

At the five foot mast above water that perfect record is broken five feet away

300

00:26:11,560 --> 00:26:15,320

Clean through but underwater it's a different story

301

00:26:16,360 --> 00:26:19,280

The burst discs are totally intact

302

00:26:21,080 --> 00:26:23,360

Interesting I thought so

303

00:26:23,980 --> 00:26:28,620

It's looking good for the myth at five feet the above water disc burst

304

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

But the ones below the surface remained intact the gasoline explosion

305

00:26:33,940 --> 00:26:38,200

Didn't really create much of pressure wave it created a nice big fireball

306

00:26:38,200 --> 00:26:44,020

And I have to say that if I was near one of those I'd want to get underwater because I wouldn't get burned

307

00:26:44,980 --> 00:26:51,220

Indeed, but one shockwave does not a result make so the myth busters aren't gonna leave it there

308

00:26:53,360 --> 00:26:59,060

Next on myth busters. Can you really bulletproof a car using phone books? Oh my god

309

00:27:03,460 --> 00:27:07,960

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

310

00:27:14,420 --> 00:27:17,980

The team has their data for the automobile phone book armor

311

00:27:18,200 --> 00:27:23,660

Two books behind a door and five in front of a window will pull it proof a car

312

00:27:25,360 --> 00:27:28,500

So they're about to throw the books at this

313

00:27:29,240 --> 00:27:35,500

Dude nice car. Thanks, but there's a problem. What well that car's carrying capacity is

314

00:27:35,940 --> 00:27:38,540

1,800 pounds now to totally bulletproof it

315

00:27:38,540 --> 00:27:42,600

We'd need over 900 phone books which weigh more than 4,000 pounds

316

00:27:42,860 --> 00:27:46,220

So in other words what you're saying is it would be so heavy wouldn't be able to move

317

00:27:46,940 --> 00:27:53,820

Exactly the maximum number of phone books we can use and still have the car be drivable is 400. Okay, well, it's not lost

318

00:27:53,820 --> 00:27:59,260

Let's just be strategic about this. Let's strip out all the extra weight and then just bulletproof to priority

319

00:27:59,260 --> 00:28:04,380

I mean, we'll do it around the driver or the engine block and maybe the passengers in the back could just duck

320

00:28:04,740 --> 00:28:06,980

All right, sounds like we got our work cut out for us

321

00:28:08,780 --> 00:28:11,220

Well for looking to save weight we can get rid of the seat

322

00:28:11,340 --> 00:28:17,420

Yeah, I should buy us some phone books clearly bulletproofing this car is all about how you throw your weight around

323

00:28:20,100 --> 00:28:25,180

So obviously you're not gonna bulletproof your car with phone books on the run so okay

324

00:28:25,180 --> 00:28:28,060

Maybe this is the scenario the three is a trap in a warehouse

325

00:28:28,140 --> 00:28:32,580

It's surrounded by crazy gunmen and there just happens to be a car and some phone books there

326

00:28:32,580 --> 00:28:40,180

So you bulletproof the car make your getaway to freedom and that getaway will be far too dangerous for a wheel wheel man

327

00:28:40,380 --> 00:28:44,780

So it's over to our C whiz grant now normally with the radio control system

328

00:28:44,780 --> 00:28:49,860

You have something called a servo, which is a small motor or talking about a full-size car

329

00:28:49,860 --> 00:28:54,420

That's potentially loaded with a lot of weight. This isn't gonna cut it

330

00:28:55,140 --> 00:29:02,260

That's why I have this I made my own servo out of this huge motor and this is gonna be what's steering our car

331

00:29:02,540 --> 00:29:07,700

And while Grant installs his remote control system thanks to the time-lapse camera

332

00:29:07,980 --> 00:29:15,180

Carrie and Tori are making like work of the phone book papering. I don't know about you guys, but I'm having an 18 moment

333

00:29:16,260 --> 00:29:20,080

With the car fully booked and the remote control complete the

334

00:29:20,300 --> 00:29:24,820

Aprilback rider is loaded onto the truck and they're off to a familiar location

335

00:29:28,220 --> 00:29:34,420

Back at the quarry I love this place exploding cars exploding train stations and of course

336

00:29:34,940 --> 00:29:40,860

Exploding cement mixers this place has seen it all well except this

337

00:29:42,020 --> 00:29:45,740

The world's first phone book armored car

338

00:29:47,060 --> 00:29:53,220

And first up they need to check Grant's remote control look how low it's riding in the front

339

00:29:53,660 --> 00:29:55,660

With an almighty

340

00:29:55,740 --> 00:30:01,980

400 phone books way into down the cars not exactly built for speed so how fast is our getaway car going?

341

00:30:02,860 --> 00:30:06,620

10 to 15 miles an hour so it's bulletproof, but you can catch it on a bicycle

342

00:30:07,060 --> 00:30:10,100

Hey, if it's bulletproof enough, it doesn't need to go any faster

343

00:30:10,780 --> 00:30:12,500

Grant's right

344

00:30:12,500 --> 00:30:17,420

But how are they going to know if it is bulletproof enough? Come on tree

345

00:30:20,020 --> 00:30:20,780

That's right

346

00:30:20,780 --> 00:30:27,300

We've got a whole inflatable family that we're gonna put in here and if any of these guys deflate we'll know that a bullet made it through

347

00:30:27,740 --> 00:30:29,660

ready

348

00:30:29,700 --> 00:30:36,100

Right and with our inflatable friend at the wheel and the passengers lying in the fully fortified footwells

349

00:30:36,340 --> 00:30:42,380

What's the plan? We are going to have our bulletproof vehicle armored with phone directories at that end of the quarry

350

00:30:42,380 --> 00:30:46,260

It's going to make a mad dash 200 yards in that direction to safety

351

00:30:46,260 --> 00:30:51,820

I'm gonna be up on that ridge right there with my M1 grand Tori right there with a shotgun. You ready?

352

00:30:52,940 --> 00:30:54,940

Grant you ready?

353

00:30:55,140 --> 00:30:59,460

Great it's time for science remember they could use only 400 of the

354

00:30:59,820 --> 00:31:03,300

900 phone books it would take to create a fully armored car

355

00:31:03,460 --> 00:31:09,860

So will their strategic stuffing succeed in protecting both the engine and the passengers

356

00:31:09,860 --> 00:31:11,860

Shooters ready

357

00:31:12,060 --> 00:31:13,620

Hit the gas

358

00:31:13,620 --> 00:31:17,700

Grant flicks a switch and the paperback rider lurches across the quarry

359

00:31:18,260 --> 00:31:26,700

Then it's locked stock and two smoking barrels as Carrie and Tori unload a barrage of bullets into the paper armor

360

00:31:28,500 --> 00:31:34,740

Until the phone book Jalopy makes it to safety gas off break off killing it

361

00:31:36,940 --> 00:31:43,340

I know I hit it, but I'm dying to see if I made it through that was so much fun. It was like a shooting gallery

362

00:31:44,260 --> 00:31:48,860

There's no doubt the bullets hit their mark, but did the passengers survive?

363

00:31:55,180 --> 00:32:00,180

We made this vehicle bulletproof with nothing but phone books wait, let's check the passengers

364

00:32:00,820 --> 00:32:02,420

one

365

00:32:02,420 --> 00:32:05,100

Chapman he's looking all right and two

366

00:32:06,820 --> 00:32:08,820

The whole family survived

367

00:32:09,380 --> 00:32:13,660

Against the shotgun in the m14 the phone book armor did its job

368

00:32:14,140 --> 00:32:20,100

So the car is in perfect working order and all the passengers are alive and accounted for at this point

369

00:32:20,100 --> 00:32:22,100

The myth is looking very good

370

00:32:23,260 --> 00:32:29,620

The guys are understandably psyched like swing dancing, but the firearm fun doesn't end here

371

00:32:30,180 --> 00:32:37,380

Next up the team comes out all guns blazing. All right. Watch out one kill. Let's do this in the bulletproof phone books finale

372

00:32:38,820 --> 00:32:40,820

I

373

00:32:47,780 --> 00:32:51,180

Blow up passengers may have survived the first chill

374

00:32:53,940 --> 00:32:57,820

But the myth busters aren't about to close the book on this one yet

375

00:32:58,500 --> 00:33:01,940

Now I think it's time. We take it up a notch. Oh really?

376

00:33:01,940 --> 00:33:05,820

Let's say these guys are real bad guys, and they have some serious weapons

377

00:33:06,420 --> 00:33:08,740

Science gets more fun when I get a bigger gun

378

00:33:09,860 --> 00:33:14,620

It certainly does and this time the bad guys will be packing some serious heat

379

00:33:15,020 --> 00:33:21,380

Carrie and I are gonna be using you in P40 and the m16 fully automatic now if it gets past those guns

380

00:33:21,380 --> 00:33:25,820

We're bringing out the big guns and just to make sure we get enough rounds into our vehicle

381

00:33:25,820 --> 00:33:30,780

We have a guest shooter deputy Eric from the Calaveras County SWAT team folks

382

00:33:31,140 --> 00:33:38,260

Welcome to the gun show with our phone book behemoth at the starting line and a trio of fully automatic weapons trained on it

383

00:33:38,660 --> 00:33:40,900

Grad calls the shots break is coming off

384

00:33:42,100 --> 00:33:47,260

Here goes the gas just like last time the car trundles into the line of fire

385

00:33:50,460 --> 00:33:53,960

The guns blaze and the phone book confetti flies

386

00:33:57,100 --> 00:34:00,340

Until it reaches the end of the gunshot gauntlet

387

00:34:01,740 --> 00:34:06,560

It's on the engine that was fun good shooting

388

00:34:07,300 --> 00:34:14,340

I say get the yellow tape. I don't think Trudy's making it out of this one. I wonder if a day look at how many hits we got

389

00:34:15,340 --> 00:34:20,020

The phone book armor is riddled with bullet holes, but what about those passengers?

390

00:34:21,340 --> 00:34:28,420

Hey, I see shredded paper. She's okay. Yeah, there's definitely confetti. I mean this is not necessarily bull proof

391

00:34:28,420 --> 00:34:30,420

But she's one lucky blow

392

00:34:31,020 --> 00:34:33,020

And she's not the only one

393

00:34:33,420 --> 00:34:42,260

Amazingly the other two passengers are also unharmed this vehicle had a small coolant leak, but it's still running for all intents and purposes

394

00:34:42,620 --> 00:34:44,180

It's bulletproof

395

00:34:44,180 --> 00:34:48,220

But you know the next thing is likely to kill the car to test this myth

396

00:34:48,220 --> 00:34:52,900

We used a shotgun and in one grand and some machine guns and it was a fun little game of shoot them up

397

00:34:53,580 --> 00:34:56,180

Not quite adequate. So now we're moving on to

398

00:34:56,780 --> 00:35:04,740

The big guns we have a 50 cal we have a 416 Barrett and a 338 La Pua. This should be fun

399

00:35:05,780 --> 00:35:10,400

Fun could be an understatement. All right, one shot one kill. Let's do this

400

00:35:10,740 --> 00:35:13,900

Shooters ready ready ready. Here goes the gas

401

00:35:16,260 --> 00:35:18,880

Let the car carnage begin

402

00:35:19,060 --> 00:35:27,060

It's a rain of fire as the car is bombarded with bullet after bullet

403

00:35:29,720 --> 00:35:33,080

Until Carrie lines up a shot at the engine block and

404

00:35:37,040 --> 00:35:40,640

It's all over for the phone book escape escapade

405

00:35:41,520 --> 00:35:43,520

Oh

406

00:35:47,760 --> 00:35:51,040

Something stopped it. Oh, I think I know what stopped it

407

00:35:54,440 --> 00:35:56,440

Carrie took her shot

408

00:35:56,440 --> 00:35:59,320

I almost had a heart attack. I mean the whole ground shook

409

00:35:59,320 --> 00:36:06,840

There's this big cloud of dust and basically it was that shot that stopped the vehicle man. These weapons are incredible

410

00:36:07,720 --> 00:36:09,720

incredible and lethal

411

00:36:10,640 --> 00:36:12,640

Oh

412

00:36:15,920 --> 00:36:20,160

Didn't make it I don't think anybody in there made nobody made it

413

00:36:22,720 --> 00:36:28,100

There's no denying that the phone books bit the bullet but where does that leave the myth?

414

00:36:28,560 --> 00:36:31,720

Well, it's looking like no amount of phone books is gonna stop one of these rounds

415

00:36:31,880 --> 00:36:38,280

Yeah, but up to a 50 cal this phone book armor stuff just about everything. Well, this is a perfect progression of a story

416

00:36:38,320 --> 00:36:42,240

I mean with the first round of guns, we're bulletproof the second round of guns

417

00:36:42,240 --> 00:36:46,160

We're like a bullet resistant and with the final round of guns like

418

00:36:46,840 --> 00:36:48,840

like bullet absorbent

419

00:36:49,560 --> 00:36:51,560

All right, who's driving home shotgun

420

00:36:59,080 --> 00:37:03,560

Up next the dive to survive finale goes off like a bomb

421

00:37:08,760 --> 00:37:14,240

Jamie and Adam are having a blast

422

00:37:16,000 --> 00:37:20,220

The platform is gone to find out if a quick dip could save your life

423

00:37:20,760 --> 00:37:24,920

And now they're amping up for even more boom for their buck

424

00:37:25,680 --> 00:37:29,000

For this blast, we're gonna use a blasting agent called amp foe

425

00:37:29,000 --> 00:37:33,960

It's ammonium nitrate, which is basically fertilizer and diesel fuel now

426

00:37:34,000 --> 00:37:39,360

That's gonna create a pressure wave moving out from the blast at 4,000 feet per second

427

00:37:39,560 --> 00:37:42,440

That pressure wave is what it's gonna burst our discs

428

00:37:43,240 --> 00:37:51,080

That's the theory and with a new set of burst discs in place. They're ready for a big ampho bag. Everything's in it looks great

429

00:37:51,920 --> 00:37:59,320

But how will it compare to gasoline? It's definitely gonna burst the five in the ten foot burst discs in air. I

430

00:37:59,960 --> 00:38:02,120

Don't think it's gonna burst those in water

431

00:38:02,120 --> 00:38:06,840

I think this is gonna demonstrate a clear difference in the shockwave propagation in air as opposed to water

432

00:38:07,680 --> 00:38:11,740

Well, all is about to be revealed as Jamie takes the controls

433

00:38:12,440 --> 00:38:16,360

We're good to go. You're good to go. You are in control. All right then

434

00:38:16,880 --> 00:38:20,960

And remember don't try this kind of boom in your own lagoon

435

00:38:21,600 --> 00:38:23,320

fire in the hole

436

00:38:23,320 --> 00:38:25,120

fire in the hole

437

00:38:25,120 --> 00:38:27,120

fire in the hole

438

00:38:27,120 --> 00:38:28,960

Take it away

439

00:38:28,960 --> 00:38:30,960

50 pounds of Ampho

440

00:38:32,360 --> 00:38:36,280

In three two one

441

00:38:37,160 --> 00:38:39,160

Bye-bye

442

00:38:44,960 --> 00:38:52,360

Whoops 50 pounds of Ampho almost obliterated the rig entirely it suddenly become a recovery mission  
a

443

00:38:55,280 --> 00:39:01,240

Recovery mission indeed, but what has the 4,000 feet per second shockwave done to the burst discs?

444

00:39:02,560 --> 00:39:04,320

Okay, oh

445

00:39:04,320 --> 00:39:09,840

It's burst it's clean through really yeah, well god. I wonder what it's gonna look like underneath

446

00:39:10,080 --> 00:39:16,920

Yeah, that's the big question so at 50 feet above water the furthest distance from the explosion  
the discs are burst

447

00:39:17,520 --> 00:39:19,520

but underwater

448

00:39:19,960 --> 00:39:22,240

Well first discs are burst

449

00:39:23,360 --> 00:39:24,760

Wow

450

00:39:24,760 --> 00:39:27,440

50 pounds of Ampho burst every single

451

00:39:28,240 --> 00:39:33,360

But that huge blast is making it difficult for the guys to call this one just yet

452

00:39:33,760 --> 00:39:37,880

Not really the definitive result. We're looking for I'm hoping for more from dynamite

453

00:39:38,960 --> 00:39:46,480

That's right the mythbusters have one more explosive for bomb disposal this time around we're using 50 pounds of dynamite

454

00:39:46,480 --> 00:39:54,640

That's 25 of these things now dynamite is a high explosive that creates a pressure wave that moves at 9,000 feet per second in air

455

00:39:55,000 --> 00:39:57,000

ready for a detonation

456

00:39:57,520 --> 00:40:00,920

Look at it go our little tetrahedron of death

457

00:40:03,840 --> 00:40:06,120

Yep, it's all down to that little tetrahedron

458

00:40:06,880 --> 00:40:09,880

The gas explosion showed you'd be better off underwater

459

00:40:10,320 --> 00:40:16,080

Whereas the Ampho detonation was total devastation above or below the surface

460

00:40:16,280 --> 00:40:19,880

So now it's all down to the dynamite decider

461

00:40:20,800 --> 00:40:23,200

Fire in the hole! Fire in the hole!

462

00:40:24,000 --> 00:40:26,000

Fire in the hole!

463

00:40:26,240 --> 00:40:34,280

All right, I'm gonna do it 50 pounds of dynamite and three two one

464

00:40:39,680 --> 00:40:41,680

Oh, yeah

465

00:40:43,680 --> 00:40:45,680

That was more than the Ampho

466

00:40:45,840 --> 00:40:49,360

The dynamite explosion was well dynamite

467

00:40:50,360 --> 00:40:52,360

I can only see one of our things left

468

00:40:53,240 --> 00:40:55,240

Yeah, salvage operation

469

00:40:56,520 --> 00:40:58,520

The

470

00:41:01,720 --> 00:41:08,320

Rig has clearly been decimated by the dynamite, but will the underwater burst discs have suffered the same fate?

471

00:41:12,320 --> 00:41:14,840

It's a hilarious horror show down here

472

00:41:16,400 --> 00:41:21,760

The five, the ten and the twenty foot water are all huddled together

473

00:41:21,920 --> 00:41:31,800

They are still attached to the rope but every single burst disc on all three of them is completely blown over

474

00:41:32,720 --> 00:41:34,720

Well, I'll be darned

475

00:41:35,320 --> 00:41:43,640

Underwater at five ten and twenty feet the discs are broken a pattern mirrored above water, but how about the 50-footer?

476

00:41:44,560 --> 00:41:47,840

Well, that's clean through above water. It's burst

477

00:41:48,800 --> 00:41:50,400

however

478

00:41:50,480 --> 00:41:57,520

You're gonna love this Jamie the 50 foot mask and put down the burst disc is intact

479

00:41:58,760 --> 00:42:04,280

Well, that says something really strong about the myth. That's great. What about the five footer?

480

00:42:06,520 --> 00:42:10,760

Also intact repeat the five footer is also intact

481

00:42:11,560 --> 00:42:17,800

What happened at this 50 foot marker is really interesting

482

00:42:18,640 --> 00:42:25,080

Because we have a blown disc above water, but we have intact discs below water

483

00:42:25,400 --> 00:42:31,800

So that's a bombshell result just like the gasoline explosion when it comes to a dynamite bomb

484

00:42:32,320 --> 00:42:35,000

Diving under water would make a difference

485

00:42:36,040 --> 00:42:38,040

Explosives are funny creatures

486

00:42:38,160 --> 00:42:43,280

Broke our rope and decimated two out of our core mass the dynamite did not break our rope

487

00:42:43,440 --> 00:42:45,880

But decimated three out of the four

488

00:42:46,560 --> 00:42:50,680

However, it burst all of the in-air burst discs

489

00:42:50,800 --> 00:42:56,600

But not the two underwater burst sticks on the 50 that is the kind of result that I was hoping for

490

00:42:56,600 --> 00:43:01,080

That tells me that there really might be something for the myth am I gonna use one of the three magic words?

491

00:43:01,080 --> 00:43:03,080

No, not until I'm with Jamie at the very end

492

00:43:03,760 --> 00:43:10,840

So where do we stand well in a situation like this?

493

00:43:14,680 --> 00:43:20,640

It's plausible that the water would protect you from an explosion plausible it is let's get out of here, okay