1

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

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

2

00:00:07,440 --> 00:00:09,440

safely, so please

3

00:00:09,680 --> 00:00:11,680

Don't try this at home

4

00:00:15,400 --> 00:00:17,640

On this episode of mythbusters

5

00:00:19,280 --> 00:00:21,280

There's crashes

6

00:00:22,960 --> 00:00:27,740

Birds and historical high flying rocket rides

7

00:00:30,280 --> 00:00:35,040

First up Adam and Jamie test the filmic fable that a cliff drive crash

8

00:00:36,320 --> 00:00:38,820

Always ends in a flaming inferno

9

00:00:39,960 --> 00:00:44,300

Then Carrie Grant and Tori tackle up a listing glass from the past

10

00:00:44,800 --> 00:00:47,600

So today on mythbusters real-life rocket science

11

00:00:48,040 --> 00:00:56,020

400 years ago did the world's first rocket year really ride a rocket 1,000 feet into the air and survive

12

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

You

13

00:01:02,560 --> 00:01:04,560

Are the mythbusters

14

00:01:05,000 --> 00:01:11,880

Adam Savage that is science and Jamie Heidemann things are gonna start to get a little crazy in here

15

00:01:12,400 --> 00:01:17,560

Between them more than 30 years of special effects experience joining them

16

00:01:18,880 --> 00:01:20,380

Carrie Byron

17

00:01:20,380 --> 00:01:24,160

Grant imma hara it's lethal people and Tori Bellachy

18

00:01:24,160 --> 00:01:31,200

Not at all fire they don't just tell the bits are you ready? I'm ready they put them to the test

19

00:01:45,480 --> 00:01:52,120

Check this out so last night I'm watching this action movie and this car goes off a cliff really you watching a movie

20

00:01:52,480 --> 00:01:54,720

Have a hard time picturing that for some reason yeah

21

00:01:54,720 --> 00:01:59,800

Well anyway, so this car goes off a cliff and it explodes into a giant fireball

22

00:01:59,800 --> 00:02:03,480

Yeah, they always seem to do that and that's what started me thinking

23

00:02:03,480 --> 00:02:10,080

Maybe this is something that we should test that every car that goes off a cliff equals an exploding fireball sounds like fun

24

00:02:10,080 --> 00:02:12,080

Don't know it does

25

00:02:13,480 --> 00:02:19,120

It's a tumbling tall tail from Tinseltown that always ends with a bang

26

00:02:19,900 --> 00:02:27,440

But does a cliff dive with a tank full of gas mean explosive car carnage is guaranteed

27

00:02:28,320 --> 00:02:31,720

Or is this just more fake physics on film?

28

00:02:34,560 --> 00:02:36,560

So a plan

29

00:02:37,120 --> 00:02:40,680

Yeah plan. Are you thinking what I'm thinking? I think so but man

30

00:02:40,680 --> 00:02:45,960

It's gonna be hard to find four oak doors and 30 pounds of grease chain. No, that's not what I'm thinking

31

00:02:45,960 --> 00:02:52,000

I'm thinking a car a cliff. We toss one off the other you know. Yeah, yeah, that would work too

32

00:02:52,640 --> 00:02:54,640

Yeah

33

00:02:54,640 --> 00:02:57,240

As plans go they don't come any simpler

34

00:02:58,080 --> 00:03:04,760

So the guys head for angels camp quarry where their car will quite literally meet the end of the road

35

00:03:04,760 --> 00:03:11,160

And here's their victim and their mechanical method for sending it over the edge. This is how this is gonna work

36

00:03:11,160 --> 00:03:14,120

It's about as simple and down and dirty as you can possibly get

37

00:03:14,400 --> 00:03:16,120

First off we have to start the car

38

00:03:16,120 --> 00:03:17,440

We put it in drive

39

00:03:17,440 --> 00:03:23,120

But it doesn't actually go anywhere because we've got this piece of wood under the rear wheel and also it's idling

40

00:03:23,120 --> 00:03:30,280

Jocks in place. It doesn't go anywhere until we release this rope. I can just reach out and cut that at which point

41

00:03:30,280 --> 00:03:36,760

This is the lead foot the accelerator presses down and off she goes sounds dangerously simple

42

00:03:36,760 --> 00:03:38,760

What could possibly go wrong?

43

00:03:39,480 --> 00:03:41,480

What's gonna happen with this car?

44

00:03:42,200 --> 00:03:45,680

Well, it's gonna go off the cliff

45

00:03:46,200 --> 00:03:51,480

Okay, I'm leaning inside and turning on the car whether it bursts into flames or not personally. I think

46

00:03:51,880 --> 00:03:56,240

That situation is a freak accident. Okay, the car is on

47

00:03:56,240 --> 00:04:01,640

I don't think it's gonna happen unless we make it happen. All right, Jamie. Are you ready? Adam's ready?

48

00:04:03,400 --> 00:04:06,440

Jamie's ready. Okay, the car is in gear and resting on the chocks

49

00:04:06,920 --> 00:04:13,640

Safety check now, but the star the car is a little too ready. Oh, the car is going

50

00:04:24,920 --> 00:04:27,640

And it stopped

51

00:04:27,640 --> 00:04:29,640

Oh

52

00:04:31,720 --> 00:04:37,680

Crap did it blow up the car did not repeat not blow up apparently

53

00:04:38,200 --> 00:04:40,200

It jumped the gun

54

00:04:41,080 --> 00:04:48,840

The car is going and it went off its chalk before Adam had time to cut the rope let the weight drop do what it was supposed to do

55

00:04:48,920 --> 00:04:54,920

We are clearly gonna need a better launch method a myth buster motto is be prepared

56

00:04:55,320 --> 00:05:03,160

So bring in the spare car and cue launch method number two and this time heavy lifting is required

57

00:05:03,640 --> 00:05:05,720

Well, you know what they say if you don't succeed

58

00:05:06,600 --> 00:05:11,880

Try again. So that's what we're gonna do and this time we're using this car steering lot

59

00:05:12,440 --> 00:05:15,560

I was hesitating about using it because it's a stick shift

60

00:05:15,800 --> 00:05:20,600

And which means I can't just put it in gear and wait till i'm ready and gun it have it go off

61

00:05:21,000 --> 00:05:25,560

Oh, yeah, plus we had a problem with the chocks. So I put two and two together

62

00:05:25,640 --> 00:05:29,320

I figured well, what if we pick this up with a heavy duty forklift

63

00:05:30,040 --> 00:05:32,040

Okay, that's good. You can kill it

64

00:05:32,280 --> 00:05:37,640

And then we can just get it going rev it up and then lower it and it'll just take off simple

65

00:05:39,080 --> 00:05:45,160

Jamie gets the engine going puts it in gear and pins the pedal to the metal ready and set

66

00:05:45,320 --> 00:05:52,440

So this is it and never mind the burn this time will we even get the crash the myth requires?

67

00:06:05,400 --> 00:06:09,240

Tell me what happened I can't see from up here. It was quite spectacular

68

00:06:15,160 --> 00:06:20,520

I've got a hundred and twenty feet below you, but no explosion or I'd see smoke by now, right?

69

00:06:21,480 --> 00:06:23,480

Now that's a negative on the explosion

70

00:06:24,360 --> 00:06:25,080

Bama

71

00:06:25,080 --> 00:06:27,480

Reality makes a crappy special effects crew

72

00:06:27,960 --> 00:06:36,120

Yep, despite getting the perfect car cliff dive this action movie stunt didn't end with the obligatory explosive bang

73

00:06:37,960 --> 00:06:44,360

And after a little csi crash scene investigation, jayme knows why there's the gas tank

74

00:06:44,440 --> 00:06:47,240

It's hardly been touched. No wonder there wasn't any fire

75

00:06:47,880 --> 00:06:52,520

Yeah, it's perfect looking at the underside of this car. It's obvious why it didn't burst into flames

76

00:06:53,000 --> 00:06:58,120

They've put the gas tank in the best possible position. It's protected by the wheels

77

00:06:58,200 --> 00:07:02,280

It's kind of in the middle if they put it on the end of the car or on the front of the car

78

00:07:02,680 --> 00:07:07,720

It'd be more likely to receive an impact. I think we're going to need something a little more radical

79

00:07:15,080 --> 00:07:20,920

Okay, rocket man, what is this one all about? Okay, well first check out these pictures while I tell you the story

80

00:07:21,480 --> 00:07:28,280

Lagari Hisan was an Ottoman Turk who according to myth was the first person to have made a successful manned rocket flight back in

81

00:07:28,760 --> 00:07:34,680

1633 he took off vertically and apparently reached an altitude of 300 meters before climbing out mid-air

82

00:07:35,000 --> 00:07:40,200

Opening some sort of wing device and descending back to earth as the world's first rocket here

83

00:07:40,680 --> 00:07:44,280

Can he use rockets to send a cage with the person inside of it?

84

00:07:44,680 --> 00:07:49,160

Up 300 meters and then have them deploy some sort of wing to float back down to earth safely

85

00:07:49,960 --> 00:07:51,960

This build is going to be awesome

86

00:07:52,280 --> 00:07:56,040

It's a missile history mystery in 1633

87

00:07:56,280 --> 00:08:03,160

There are several colorful accounts of an otto man rocket man taking the world's first rocket ride

88

00:08:03,640 --> 00:08:08,440

But to find out if lagari hasan really was a rocket year pioneer

89

00:08:08,760 --> 00:08:13,080

The team is picking three concrete parameters common to each account

90

00:08:14,600 --> 00:08:17,720

Did he really reach the 1 000 feet from the fable?

91

00:08:18,680 --> 00:08:21,560

Were the wings a viable method for his descent?

92

00:08:22,360 --> 00:08:25,080

And finally could he have even survived?

93

00:08:26,440 --> 00:08:28,760

All right, so there are a lot of unknowns to this one

94

00:08:28,840 --> 00:08:33,720

I mean did the thrust come from a single engine like in your picture or was it multiple rockets like in this picture?

95

00:08:34,120 --> 00:08:38,920

And there's no design for the wing system. I mean were they true wings or was it more like a parachute?

96

00:08:39,080 --> 00:08:43,000

Okay, with so many questions let's start with small scale and put aside the whole

97

00:08:43,800 --> 00:08:45,800

Flying back down to earth thing until later

98

00:08:45,960 --> 00:08:49,400

We'll build miniature versions of these two designs and see which one flies better

99

00:08:49,560 --> 00:08:55,000

Which one is more stable and we use the design that performs the best and go full scale. All right. Let's go to work

100

00:08:58,840 --> 00:09:03,480

So unfortunately with myths of this kind, there's no one single version of the story

101

00:09:03,720 --> 00:09:08,520

Which means that there's no one definitive rocket design for us to build. I have my materials

102

00:09:08,600 --> 00:09:11,800

I have my rockets and I have my rocket dude. Most importantly

103

00:09:12,280 --> 00:09:15,320

I have my design so tori's gonna build his version

104

00:09:15,560 --> 00:09:18,840

Which is a half page and multiple rockets looking at this picture

105

00:09:18,920 --> 00:09:23,880

The first thing I notice is he's got a mustache and I'm gonna build the version that's in my reference

106

00:09:23,960 --> 00:09:28,520

Which is a fully enclosed cage pointy top and a single rocket motor

107

00:09:29,720 --> 00:09:33,400

And with the two designs rigged and ready for their maiden test flight

108

00:09:34,680 --> 00:09:38,280

The team heads for the hills and the perfect launch location

109

00:09:39,320 --> 00:09:42,520

So we are here at missile launch site 88 in the marine headlands

110

00:09:42,520 --> 00:09:45,320

Which is part of the golden gate national recreational area

111

00:09:45,800 --> 00:09:51,240

Now this facility was built during the cold war as part of an anti aircraft missile defense system

112

00:09:51,480 --> 00:09:57,640

Behind me is a nike hercules missile capable of carrying up to a 40 kiloton nuclear payload

113

00:09:57,960 --> 00:10:00,600

Gotta love a man in uniform. Here's the interesting thing

114

00:10:01,080 --> 00:10:04,440

No missile has ever been launched from this site. That is

115

00:10:06,040 --> 00:10:11,560

Until today launch pad launch path now the whole point of the small scale test is to find out which design

116

00:10:11,800 --> 00:10:14,920

Is the best for when we go build the large scale rocket now

117

00:10:15,000 --> 00:10:19,640

We know from the past trying to get rockets to go off at the same time have been a huge problem

118

00:10:19,800 --> 00:10:22,280

Anybody remember 360 degree swing step?

119

00:10:22,840 --> 00:10:23,960

Whoa

120

00:10:23,960 --> 00:10:28,920

And tori's solution to this sticky simultaneous launch issue is black powder

121

00:10:29,000 --> 00:10:31,000

Don't worry. You will not be forgotten

122

00:10:31,400 --> 00:10:38,200

And remote ignition the burning ring of black powder should fire all seven engines at the same time

123

00:10:38,680 --> 00:10:46,280

All right, so we're all wired up ready for our multi rocket launch. You guys ready? All right. Give us countdown. All right. Here we go. Three two one

124

00:10:52,440 --> 00:10:54,440

Wow, that was great

125

00:10:55,000 --> 00:10:57,000

Oh

126

00:11:01,160 --> 00:11:06,360

Best part about watching tori's launches the fact that we all started running towards the rocket to go get it

127

00:11:06,920 --> 00:11:11,800

Nobody had a fire extinguisher in hand. So it was a little uh three stooges. All right. We're all good

128

00:11:12,200 --> 00:11:15,000

I'm not sure which one of them I am. I think I might be curly

129

00:11:16,760 --> 00:11:21,960

Despite the slapstick safety protocols rocket science 101 is going pretty well

130

00:11:22,920 --> 00:11:29,080

The vertical launch was stable at least initially and the height of the flight was good

131

00:11:31,320 --> 00:11:36,280

That's the benchmark add up next for a little ballistic show and tell is grant

132

00:11:36,760 --> 00:11:43,880

Will his single engine cage design do any better? Here we go in three two one

133

00:11:43,880 --> 00:11:45,880

Oh

134

00:11:51,800 --> 00:11:53,800

That was exciting

135

00:11:54,040 --> 00:11:56,600

How'd you make it so it would come at us? Yeah, okay?

136

00:11:57,160 --> 00:12:01,720

Almost killed the entire crew so it looks like grant's design has a fatal flaw

137

00:12:02,040 --> 00:12:05,960

But he wants to make sure in three two one

138

00:12:06,680 --> 00:12:19,640

So the good news is that the second rocket performed the same as the first rocket without trying to kill us this time

139

00:12:20,680 --> 00:12:23,880

Unfortunately, I still have some lingering stability issues

140

00:12:24,200 --> 00:12:31,160

And that's the key a vertical stable launch will be the most important aspect of the design after all to work

141

00:12:31,240 --> 00:12:35,560

It's got to thrust our rocketeer 300 meters safely into the air

142

00:12:36,840 --> 00:12:41,640

And to tie all their ideas together. It's back to the uh, lair

143

00:12:47,960 --> 00:12:51,400

Next adam and jayme put this myth on burn notice

144

00:12:52,200 --> 00:12:53,080

Wow

145

00:12:53,080 --> 00:12:54,840

then

146

00:12:54,840 --> 00:12:59,800

Oh my goodness hang gliding fun science research all the above

147

00:13:06,920 --> 00:13:14,200

Hey attention class, we're going to recap here the myth is that any car going off any cliff will explode into a ball of fire

148

00:13:15,160 --> 00:13:17,720

Now we've crashed two cars so far and we haven't seen that happen

149

00:13:18,600 --> 00:13:19,800

so

150

00:13:19,800 --> 00:13:23,720

Not looking so good for the myth. That's a negative on the explosion

151

00:13:24,440 --> 00:13:30,440

Bama, but the question I have is are there any circumstances under which it could happen

152

00:13:31,080 --> 00:13:36,840

So despite two busted cars and one near busted myth the guys aren't quite done

153

00:13:37,160 --> 00:13:42,200

Down home at the bomb range. They want to know how far from the truth. Hollywood is strained

154

00:13:42,440 --> 00:13:49,640

They're looking under the hood of this myth and asking under impact will an exposed gas tank even explode

155

00:13:52,360 --> 00:13:55,080

This whole thing seems to me to be just about the gas tank

156

00:13:55,560 --> 00:13:59,640

Now based on previous experience the idea that a gas tank would just explode

157

00:14:00,200 --> 00:14:02,200

Doesn't seem plausible

158

00:14:04,840 --> 00:14:11,480

Obviously nothing caught on fire we bathed them in fire and we still didn't see any kind of a gas tank explosion

159

00:14:12,520 --> 00:14:17,960

That leads me to think that the only way that this is going to occur is if we squash that tank like a bug

160

00:14:18,520 --> 00:14:22,600

And all the gas inside it erupts outward in a big ball of mist

161

00:14:23,080 --> 00:14:26,920

Which if we ignite it, I'm pretty sure it'll burst into a ball of flame

162

00:14:27,240 --> 00:14:32,680

So they're trying to recreate the perfect set of circumstances under which this myth could work

163

00:14:33,320 --> 00:14:39,080

The car lands on a rock and the gas tank is crushed spraying the fuel into a deadly mist

164

00:14:39,960 --> 00:14:42,360

That's one big fireball in potencia

165

00:14:43,080 --> 00:14:49,160

And at exactly the same time the impact of metal on rock creates an ignition spark

166

00:14:49,880 --> 00:14:55,080

To find out if that sequence of events will in fact create a hollywood style fireball

167

00:14:55,400 --> 00:15:03,640

They're going to use matches to guarantee the spark and drop 3 000 pounds the weight of a car onto the gas tank

168

00:15:04,680 --> 00:15:06,680

Now we're going for a big boom ready?

169

00:15:07,160 --> 00:15:11,320

I'm ready flatten gas tank with actual gas in it in

170

00:15:12,040 --> 00:15:14,040

three two one

171

00:15:20,440 --> 00:15:22,440

Wow

172

00:15:22,440 --> 00:15:24,440

That was beautiful

173

00:15:24,600 --> 00:15:29,000

It truly is the impact disperses the gas into a volatile mist

174

00:15:29,320 --> 00:15:34,760

And then just at the right moment the simulated spark from impact causes ignition

175

00:15:35,320 --> 00:15:40,280

And it perfectly matches the typical car off a cliff hollywood style

176

00:15:40,840 --> 00:15:45,480

Conflagration, but where does that leave the story? Look at this high-speed shot one more time

177

00:15:46,680 --> 00:15:50,280

Yeah, I don't think anyone would dispute that this

178

00:15:51,080 --> 00:15:53,080

Is the fireball we were looking for

179

00:15:53,560 --> 00:16:00,200

Can we induce this kind of tank failure in a car under a real circumstance? Well, there's only one way to find out

180

00:16:04,760 --> 00:16:12,040

From icarus and leonardo to the right brothers the history of flight is a soaring tale of the triumph of invention

181

00:16:12,280 --> 00:16:18,280

Over gravity, but it's also a rich source of tall tales and exaggerated claims

182

00:16:18,920 --> 00:16:29,480

The question is where does legari has sand fitted flight of fancy or realized 17th century rocket-tier pioneer

183

00:16:31,320 --> 00:16:34,200

So despite the fact that your rocket flew better on the day

184

00:16:34,360 --> 00:16:40,920

I think in the full scale we should take the best design elements from both agree, but i'm a little hesitant to use multiple rockets

185

00:16:41,000 --> 00:16:44,600

Yeah, you know what? I feel the same way. I mean, it's like yeah, it worked on the model rocket

186

00:16:44,760 --> 00:16:48,040

But when we go to full scale trying to get several rockets to go off at the same time

187

00:16:48,600 --> 00:16:52,280

You're asking for trouble. So why don't we do this? We'll take the shuttle design from this

188

00:16:52,840 --> 00:16:55,560

We'll take the single rocket engine from this design

189

00:16:55,800 --> 00:16:59,320

We'll put the two together when we go build the full scale rocket. I totally second that

190

00:16:59,560 --> 00:17:00,280

All right

191

00:17:00,280 --> 00:17:04,040

Sounds like all we need to do is build the full scale rocket and add a simulated pilot

192

00:17:04,120 --> 00:17:06,600

But not just any simulator a simulated with wings

193

00:17:06,680 --> 00:17:11,480

Yeah, the wings aspect is really awkward and it's not represented in either of our illustrations

194

00:17:11,560 --> 00:17:16,360

But the history books did say he climbed out of the rocket deployed some sort of wing device

195

00:17:16,680 --> 00:17:18,360

And flew safely down to earth

196

00:17:18,360 --> 00:17:23,640

Well, we know from our plywood builder episode that in order to safely descend you need a big wing

197

00:17:23,720 --> 00:17:26,360

Not just like an umbrella. I mean a huge surface

198

00:17:26,760 --> 00:17:32,120

Well, you know if legari had the technology to build a rocket, maybe he had the technology to build some kind of gliding wing

199

00:17:33,080 --> 00:17:36,360

Kind of like a hang glider. You're saying you want to go hang gliding? Oh, yes

200

00:17:36,920 --> 00:17:38,120

Oh, yeah

201

00:17:38,120 --> 00:17:40,920

Oh being pregnant on mythbusters is so unfair

202

00:17:42,760 --> 00:17:49,480

So with her baby bump aerodynamics less than stellar carry is obviously grounded for this one

203

00:17:49,480 --> 00:17:53,160

So we're here at fort funston, which is a mecca for hang glider

204

00:17:55,800 --> 00:18:00,920

In terms of the myth what we're looking for here is a kind of a reality check

205

00:18:01,080 --> 00:18:04,440

Now did the diapers go on before or after we get into the hang glider?

206

00:18:04,600 --> 00:18:06,600

It's supposed to have them on before we get in

207

00:18:07,000 --> 00:18:13,480

In the myth they describe wings. Is this slimming? It's good on you. We're just here to see if this is even possible

208

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

If this is something we could incorporate into our build to simulate that part of the myth

209

00:18:19,240 --> 00:18:24,440

Now getting our rocket into the air is only half of this myth. Oh my goodness

210

00:18:25,080 --> 00:18:30,840

The other half is the fact that our rocket man had some sort of wing system that got him safely back down to the earth

211

00:18:31,560 --> 00:18:33,560

Woohoo!

212

00:18:33,880 --> 00:18:37,640

So Tori and Brant are going to collect a little practical data for me

213

00:18:38,360 --> 00:18:40,360

Remember to gather the data!

214

00:18:40,680 --> 00:18:44,840

They're going to check out all the aspects of this which are the takeoff the flight

215

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

Look out rocket man, here we come

216

00:18:47,720 --> 00:18:52,200

The control in the air and the landing they need to come down and tell me all of the things

217

00:18:52,200 --> 00:18:56,680

I need to know so that I can maybe make some sort of wing system that'll get our rocket man down

218

00:18:57,640 --> 00:18:59,640

Ah

219

00:18:59,960 --> 00:19:01,960

Nice, really?

220

00:19:03,080 --> 00:19:10,840

Oh my god, that was insane. You know as soon as I took off all the fear went away and it was like you were in a dream and you were just floating

221

00:19:12,120 --> 00:19:15,160

I mean it was just like flying I guess because it was flying

222

00:19:15,640 --> 00:19:19,880

This is all about getting back to earth safely now on the plus side

223

00:19:20,600 --> 00:19:25,800

You don't need any electricity. You don't need any gasoline. You don't need a propeller. Yeah

224

00:19:27,560 --> 00:19:32,440

You could just float down and I think it's highly likely you could safely land

225

00:19:32,920 --> 00:19:37,640

Without any power, but on the minus side you need a huge airfoil

226

00:19:37,720 --> 00:19:40,760

you need a huge surface area in order to do that and

227

00:19:41,400 --> 00:19:46,520

What's more you'd have to deploy that at the apex of your rocket's trajectory

228

00:19:46,840 --> 00:19:53,400

I just don't see that happening. We're gonna have to figure out another way to get our rocket man to land safely on the ground

229

00:19:54,040 --> 00:20:00,040

So what does all that mean for the myth? Well with one of the three key criteria almost written off

230

00:20:00,360 --> 00:20:04,040

There's a danger that this myth is about to crash and burn

231

00:20:04,600 --> 00:20:06,600

after the break

232

00:20:07,640 --> 00:20:13,100

Our intrepid trio of rocket scientists build big and touchdown

233

00:20:13,500 --> 00:20:15,500

Carey

234

00:20:20,940 --> 00:20:24,140

Carrie Grant and Tori have discovered that as per the myth

235

00:20:24,540 --> 00:20:27,980

Using a wing system to float back to earth is a breeze

236

00:20:28,460 --> 00:20:35,020

But equally there is no way you could deploy a full-sized hang glider from the confines of the

237

00:20:35,420 --> 00:20:41,340

mythical man-sized rocket shuttle and that means okay, so a huge wing system is out

238

00:20:41,420 --> 00:20:45,100

But there are so many different versions of this myth and in at least one variation

239

00:20:45,180 --> 00:20:49,900

I heard a vague reference to something that sounded a little bit more like a parachute and I say we go with that

240

00:20:50,300 --> 00:20:52,780

That would work a parachute would be a great idea. However

241

00:20:53,420 --> 00:20:57,260

Our rocket man is a simulate. How's he gonna jump out of the rocket and pull a shoot?

242

00:20:57,500 --> 00:21:01,020

Okay, I'll give you that but let me start working on a self-deploying parachute system

243

00:21:01,180 --> 00:21:05,900

Well in that case, I think we're ready to go full scale. We'll build the rocket install the parachute system

244

00:21:06,220 --> 00:21:08,220

Go to the desert and see if this thing works

245

00:21:08,940 --> 00:21:14,300

So while Tori shapes the open top shuttle grant will machine the housing for the rocket engine

246

00:21:14,620 --> 00:21:18,460

And Carrie will take care of the pilot's self-deploying parachute

247

00:21:19,100 --> 00:21:25,500

By dividing they're attempting to conquer what is looking like their trickiest and most technical build ever

248

00:21:26,540 --> 00:21:29,260

So today on myth busters real live rocket science

249

00:21:29,500 --> 00:21:34,940

I'm going to start out by building the first critical component of the rocket the rocket nozzle with this

250

00:21:35,420 --> 00:21:40,220

Yes, it looks like a giant chunk of steel and it is but when I'm done it's going to be a rocket nozzle

251

00:21:41,020 --> 00:21:45,500

While grant labors away on the lathe there's a delivery for a mr. Belay cheat

252

00:21:45,980 --> 00:21:49,920

Show us the rocket body's in and yeah, he's excited

253

00:21:51,420 --> 00:21:56,220

Rocket man, it's the body of our rocket. Okay. I know it looks like a big giant steel tube

254

00:21:56,460 --> 00:22:01,020

But use your imagination once we get some fins on it. We reinforce the inside we put an engine in it

255

00:22:01,180 --> 00:22:05,180

We put rocket man inside this is going to be awesome

256

00:22:07,420 --> 00:22:11,180

We're making a rocket cue the patented myth buster montage

257

00:22:12,940 --> 00:22:19,500

While Tori reinforces the shuttle body to withstand the engine's thrust adds fins for flight stability

258

00:22:20,780 --> 00:22:24,220

It's starting to look like a rocket grant slices steel

259

00:22:24,620 --> 00:22:31,100

Grines graphite and machines the engine that will hold the propellant to be inserted just before blast off

260

00:22:32,700 --> 00:22:36,300

So up till now Tori's been working on the body of the rocket and I

261

00:22:36,940 --> 00:22:38,940

Have been working on the motor

262

00:22:39,180 --> 00:22:43,580

But this is the point where we bring the two together and figure out our mounting system

263

00:22:44,940 --> 00:22:47,740

So i'm about to build the bracket that is going to hold our engine now

264

00:22:47,740 --> 00:22:53,740

It is important that this area is very strong because what we don't want happening is that engine breaking free of our shuttle

265

00:22:53,900 --> 00:22:55,980

So i'm going to be using a little bit thicker steel

266

00:22:56,700 --> 00:22:59,820

Now another important thing is the placement of the engine

267

00:23:00,060 --> 00:23:07,020

It has to be dead centered and it has to be perpendicular to the ground because when we go to launch we want a true vertical launch

268

00:23:08,220 --> 00:23:09,900

Yeah, we're in

269

00:23:09,900 --> 00:23:13,660

So now the body and the engine are all one as one

270

00:23:14,380 --> 00:23:19,980

Complete rocket now all we need is a rocket man and the parachute to recover them

271

00:23:20,380 --> 00:23:21,980

We are good to go

272

00:23:21,980 --> 00:23:28,380

So it's over to Carrie and her substitute for the wing of the myth a parachute for our crash test

273

00:23:28,540 --> 00:23:32,940

Rocketeer, okay, so I have my canister built and I have a parachute packed inside

274

00:23:33,260 --> 00:23:36,700

Now there's a few more layers to make this self deploying system

275

00:23:37,020 --> 00:23:39,020

The next layer is going to be

276

00:23:39,180 --> 00:23:44,540

My spring-loaded pilot chute which takes about 25 pounds of force to completely compress

277

00:23:45,100 --> 00:23:47,740

On top of this I will have a little bit of black powder

278

00:23:48,060 --> 00:23:52,540

sandwiched between the pilot chute and the lid the pyro technic go in

279

00:23:53,740 --> 00:23:58,540

There the way that this actually ignites is I have an electric igniter hooked up to some wires

280

00:23:58,860 --> 00:24:02,380

So that once I touch those wires to a battery will blow off the lid

281

00:24:02,540 --> 00:24:05,100

You ever try to pack one of those peanut brittle cans with a snake in it?

282

00:24:09,980 --> 00:24:11,500

Sometimes that happens

283

00:24:11,500 --> 00:24:16,700

The spring will jump out pulling the pilot chute and then pulling the regular parachute

284

00:24:16,860 --> 00:24:18,860

Which will be attached to our simulate

285

00:24:19,420 --> 00:24:21,420

And be able to pull him to freedom

286

00:24:22,060 --> 00:24:26,780

To put the parachute through its paces grant and carry head down to treasure island

287

00:24:27,020 --> 00:24:29,900

Attach it to the truck and get set for a test run

288

00:24:30,460 --> 00:24:35,180

Okay, so here to test carry self deploying parachute system run a closed off street

289

00:24:35,740 --> 00:24:40,700

Directly adjacent to the bay. I'm going to drive down the middle of the street go. Okay

290

00:24:42,060 --> 00:24:45,340

Reach the mark carry is going to hit the bunny and hopefully

291

00:24:45,740 --> 00:24:49,740

Deploy the parachute by blowing off the top with the pyro technic

292

00:24:51,180 --> 00:24:54,780

Little guide chute comes out 55 and the whole thing goes up

293

00:25:05,260 --> 00:25:08,460

I'm feeling so much better about this whole parachute deployment

294

00:25:08,460 --> 00:25:12,940

We found out the after it blows off that our pilot chute will pull our main chute out of the container

295

00:25:13,340 --> 00:25:16,780

And that that parachute has enough lift to hold our rocket man

296

00:25:17,020 --> 00:25:22,860

So now all we need is to not explode on the launch pad get stable flight all the way up to apogee. What can go wrong?

297

00:25:24,380 --> 00:25:30,540

Back at the shop the final step of fitting our rocket man with his tailor-made parachute is quickly complete

298

00:25:31,020 --> 00:25:33,980

And the countdown to the countdown is on

299

00:25:35,580 --> 00:25:37,580

Have fun with rocket man. All right

300

00:25:37,820 --> 00:25:41,500

Have fun having a baby. Thank you. Bye. Bye

301

00:25:44,700 --> 00:25:46,460

Is that my water?

302

00:25:46,460 --> 00:25:48,460

This whole thing could just crash and burn

303

00:25:48,860 --> 00:25:52,460

We need to go to the desert tessus. Bye guys have fun in the desert

304

00:25:53,420 --> 00:25:55,420

It's never gonna work

305

00:25:55,740 --> 00:26:00,780

Up next look at christmas present of death the myth that keeps on giving

306

00:26:07,740 --> 00:26:11,660

Don't try anything you've seen on the show at home. We are what you're called experts

307

00:26:16,540 --> 00:26:21,580

Adam and jayme have discovered that not every cliff drive dive ends in a bank

308

00:26:23,340 --> 00:26:28,700

But at the bomb range they found a hollywood style gas tank explosion was possible

309

00:26:31,740 --> 00:26:36,300

And we've determined that this pretty much rests upon the gas tank of the car being compromised in such a way

310

00:26:36,300 --> 00:26:39,980

Is to release all of its fuel simultaneously and being sparked into an explosion

311

00:26:40,620 --> 00:26:44,140

Which we've pretty much determined as a one in gazillion chance

312

00:26:45,420 --> 00:26:50,380

I mean we could spend weeks throwing cars over cliffs until one of them landed perfectly on a rock

313

00:26:51,020 --> 00:26:53,180

But we don't have the time or the energy to do that

314

00:26:53,820 --> 00:26:55,340

time for some

315

00:26:55,340 --> 00:26:57,180

modifications

316

00:26:57,180 --> 00:27:04,460

So back at angels camp quarry using what they've learned they're going to tweak the odds from one at a gazillion to one in one

317

00:27:05,420 --> 00:27:11,260

As we've learned at this point they intentionally put gas tanks out of harm's way on cars. Oh that ought to do it

318

00:27:12,380 --> 00:27:14,300

It makes sense that they would do that

319

00:27:14,300 --> 00:27:19,580

But if we're going to get a movie like explosion, we need to put the gas tank in harm's way

320

00:27:19,740 --> 00:27:21,340

Where's it all happening?

321

00:27:21,340 --> 00:27:23,180

Well, it's all happening

322

00:27:23,180 --> 00:27:25,340

Right there of course. So our solution is

323

00:27:26,540 --> 00:27:33,180

Strap the gas tank right to the front of the car. Okay, that's it. All right for a spark. Yeah, I knew you were wondering about that

324

00:27:33,260 --> 00:27:39,500

We're not throwing it over a flint mountain. No, we're going to use strike anywhere matches like a christmas present of death

325

00:27:39,740 --> 00:27:43,500

Which in this case, I'd like to think of as strike just where we want the mattress

326

00:27:44,460 --> 00:27:48,220

And so with everything set adam and jayme take up their positions

327

00:27:48,460 --> 00:27:52,380

Atop the mountain with the car and across the valley for the perfect view

328

00:27:54,140 --> 00:27:59,900

All that's left is for jayme to get the motor running remember to take off the park brake and stand back

329

00:28:04,140 --> 00:28:06,140

Oh

330

00:28:19,660 --> 00:28:26,460

Well as per the experiment design the gas tank took the brunt of the impact and did burst into flames

331

00:28:27,020 --> 00:28:29,340

But it didn't go exactly to plan

332

00:28:30,060 --> 00:28:32,060

And

333

00:28:32,700 --> 00:28:34,700

Jayme's about to spill the beans

334

00:28:35,500 --> 00:28:42,140

So I have a little bit of a confession to make what's that there was a screw up here and I I suppose it was my fault

335

00:28:42,860 --> 00:28:44,460

um

336

00:28:44,460 --> 00:28:49,100

You should always remember to take off the parking brake before you want a car to go

337

00:28:53,260 --> 00:28:57,740

I know the front wheels are spinning away it was like it looked like it was working fine and I just like

338

00:29:00,140 --> 00:29:02,140

Oh

339

00:29:02,220 --> 00:29:06,860

Well, you know it went over it hit with all the weight of that car going right on that

340

00:29:07,980 --> 00:29:09,980

The hit was perfect nose down

341

00:29:11,340 --> 00:29:13,340

I'm still a little bummed, but uh

342

00:29:14,140 --> 00:29:16,140

What are you gonna do?

343

00:29:16,140 --> 00:29:20,540

So they didn't get the distance they were looking for but the result is still valid

344

00:29:20,620 --> 00:29:23,900

The car went over the cliff crashed and burned

345

00:29:24,220 --> 00:29:27,340

But crucially there was no special effects style

346

00:29:27,500 --> 00:29:34,380

Explosion I think this makes the myth totally busted. Yeah, I mean we made it as likely as possible to get a car explosion

347

00:29:34,460 --> 00:29:42,540

Yeah, all we got was a car fire eventually. I mean, I don't know what else we could do except say myth busted and somehow

348

00:29:43,260 --> 00:29:45,660

Achieve a car explosion

349

00:29:45,660 --> 00:29:47,660

Hmm

350

00:29:53,740 --> 00:30:00,540

Tori and Grant have deserted carry for a deserted destination in the desert the white sands missile range

351

00:30:00,700 --> 00:30:05,260

Do you believe we're actually using a real working launch pad to launch our rocket?

352

00:30:06,300 --> 00:30:11,340

So what makes white sands missile range a really great choice for our experiment is that they've got a lot of space

353

00:30:11,740 --> 00:30:15,420

It's crazy. All right. Let's get the beast out. I gotta go to the bathroom

354

00:30:15,660 --> 00:30:19,020

It's 40 miles in one direction and 100 miles in the other direction

355

00:30:22,380 --> 00:30:25,580

But another great thing is that this is actually a historical site

356

00:30:25,980 --> 00:30:29,420

Behind me is a launch gantry for the v2 rocket

357

00:30:29,580 --> 00:30:33,580

Which was critical to the development of american rocket and missile technology

358

00:30:33,820 --> 00:30:36,380

It led to the first pictures of the curvature of the earth

359

00:30:36,940 --> 00:30:41,180

And eventually to the apollo space program. This rocket science is fun

360

00:30:41,660 --> 00:30:43,900

Which by the way put men in space

361

00:30:44,460 --> 00:30:46,780

Which is pretty much what we hope to do today

362

00:30:47,580 --> 00:30:50,860

Good into space may be a tad ambitious

363

00:30:51,020 --> 00:30:56,620

But matching the key criteria of the myth a flight height of a thousand feet and a safe

364

00:30:57,260 --> 00:31:02,780

Survival descent is within their sights. So i'm here at ground zero. This is where we're going to launch the rocket from

365

00:31:03,020 --> 00:31:07,500

Got the shuttle right here inside is going to go buster along with this parachute system

366

00:31:07,740 --> 00:31:12,460

And then the engine goes in the bottom now for safety. We have to aim the rocket down range

367

00:31:12,620 --> 00:31:15,100

So off of vertical and to do that

368

00:31:15,660 --> 00:31:19,180

We need to eat a guide rail what I have here is a 12 foot pipe

369

00:31:21,100 --> 00:31:26,940

This pipe will slide through these rings, which is attached to the rocket once we get the rocket to that 85 degrees that we're looking for

370

00:31:27,980 --> 00:31:34,700

Perfect, I will weld it to the treads plate this way. We have stability for at least 12 feet till the rocket gets off of the guide rail

371

00:31:35,420 --> 00:31:40,060

Now all we need to do is grease up the pole and then it's time to load up the rocket motor

372

00:31:40,060 --> 00:31:47,660

Q aero jet with over 70 years designing and perfecting solid and liquid state rocket motors

373

00:31:48,140 --> 00:31:53,820

They're the perfect people to help out. All right. Okay. So what do we got? Well, we have our two propellant cartridges

374

00:31:54,220 --> 00:32:00,300

The propellant is a mixture of ammonium perchlorate, aluminum powder and a synthetic rubber binder called htpb

375

00:32:00,940 --> 00:32:02,940

Exactly what I was thinking right now sounds good to me

376

00:32:03,260 --> 00:32:06,380

Oh and in case you're wondering why we're not using black powder

377

00:32:06,700 --> 00:32:11,260

Here's grant so we're using 15 pounds of modern-day solid rocket propellant

378

00:32:11,420 --> 00:32:16,700

Which is the direct equivalent of the 140 pounds of black powder that's stated in a minute

379

00:32:17,100 --> 00:32:19,740

That'll give us a burn time of 3.8 seconds

380

00:32:20,300 --> 00:32:26,220

950 pounds of thrust and resulting in just under two g's of acceleration on the rocket

381

00:32:26,700 --> 00:32:29,580

Which is a prerequisite for survivability

382

00:32:30,620 --> 00:32:32,940

Which means they're ready to lock and load

383

00:32:33,740 --> 00:32:35,580

Okay, here's what we got

384

00:32:35,660 --> 00:32:40,860

Steel motor casing inside of that carries two propellant cartridges slide right in one right after the other

385

00:32:41,100 --> 00:32:45,820

On top of that is an igniter the igniter wires go right down the middle and out the nozzle

386

00:32:46,300 --> 00:32:50,940

On top of that is an insulator plate a spacer and then you bolt on the head cap

387

00:32:51,580 --> 00:32:53,820

You take that whole assembly over to the rocket

388

00:32:56,700 --> 00:33:02,140

Okay, it's cool. It's cool. It's cool. Whoo. That was close. We connect up the wires and we are good to go

389

00:33:03,580 --> 00:33:05,020

Beautiful

390

00:33:05,100 --> 00:33:09,740

I'm starting to get excited. We got the rocket on the launch pad. We got the motor installed

391

00:33:10,060 --> 00:33:15,420

Now all we need to do is dress buster put the parachute deployment system in place wire it up flip the switch

392

00:33:15,980 --> 00:33:17,980

and then it's

393

00:33:21,500 --> 00:33:25,500

Coming up tori and grant light up on lift off

394

00:33:35,580 --> 00:33:38,940

We're back and this is where we're at. We've done all the small scale tests

395

00:33:41,340 --> 00:33:44,220

We've done all the designing and building great lift off

396

00:33:44,860 --> 00:33:48,060

This is the best design that we've come up with for our full scale test

397

00:33:48,220 --> 00:33:54,380

Now it's time to test this turkish myth was legari able to build a rocket with 17th century technology

398

00:33:54,700 --> 00:34:00,140

Launched himself a thousand feet into the air jumped out of it and lands safely to earth with some kind of wing system

399

00:34:01,100 --> 00:34:07,180

I go get the pants when did he get duct tape underwear? Well, that is what we're about to find out

400

00:34:07,740 --> 00:34:13,500

After an unfortunate makeover session our auto man rocket man looks the park perfect

401

00:34:14,300 --> 00:34:18,700

Looks great, but it's not those period details that are troubling grand

402

00:34:18,780 --> 00:34:22,460

So there are a few difficulties with the historical count of legari hassan's flight

403

00:34:22,860 --> 00:34:29,820

First of all the 140 pounds of black powder that he's supposed to abuse as his propellant would have been extremely dangerous to handle

404

00:34:30,140 --> 00:34:36,380

Not to mention containing all of that explosive force and converting it to thrust would have been extremely difficult

405

00:34:37,020 --> 00:34:39,500

Dude, this is almost there. You ready rocket man?

406

00:34:39,740 --> 00:34:46,700

Second the materials that we have available today all the modern steel alloys and all the fabrication techniques like welding

407

00:34:47,260 --> 00:34:49,260

He didn't have any of that

408

00:34:49,260 --> 00:34:51,260

Now that having been said

409

00:34:51,260 --> 00:34:56,700

We've chosen the propellant and have the same thrust characteristics to the amount of black powder that he had

410

00:34:57,260 --> 00:35:03,980

Second we've taken all the historical accounts all of those renderings all those drawings and use that to design our rockets

411

00:35:04,060 --> 00:35:09,100

That it has similar shape and similar weight give us a little slack over here

412

00:35:09,500 --> 00:35:11,500

If this rocket doesn't fly

413

00:35:11,740 --> 00:35:16,620

I find it very difficult to believe that legari hassan would have been able to do it in his day

414

00:35:22,140 --> 00:35:23,980

We're here can you believe it?

415

00:35:24,060 --> 00:35:28,060

We're at an actual missile testing facility with a real mission control

416

00:35:28,620 --> 00:35:30,620

We're ready for final arming at this time

417

00:35:31,100 --> 00:35:33,660

Roger good copy predictions. Here's what I got

418

00:35:34,380 --> 00:35:35,900

vehicle is armed

419

00:35:35,900 --> 00:35:40,940

I think the welds in the engine casing are going to hold and we are going to get lift off attention all personnel

420

00:35:41,020 --> 00:35:45,900

Please clear the pad at this time. This was operation awful golf holding that five minutes and counting

421

00:35:46,140 --> 00:35:51,500

And I can absolutely guarantee that for the first well feet of his flight. It's going to be

perfectly straight

422

00:35:51,740 --> 00:35:54,460

All right, go ahead and arm the system. All right arming system

423

00:35:55,100 --> 00:35:58,300

And I think that given the weight distribution

424

00:35:59,020 --> 00:36:02,140

Uh, it's quite likely that we might have some tumbling

425

00:36:02,700 --> 00:36:07,020

Happening right after that 12 feet, but you know what that's what we're here to find out

426

00:36:07,340 --> 00:36:10,220

So all that remains is to hit that switch

427

00:36:11,100 --> 00:36:12,220

Here we go

428

00:36:12,220 --> 00:36:13,260

five

429

00:36:13,260 --> 00:36:14,220

four

430

00:36:14,220 --> 00:36:15,260

three

431

00:36:15,260 --> 00:36:16,300

two

432

00:36:16,300 --> 00:36:17,580

one

433

00:36:17,580 --> 00:36:19,580

fire

434

00:36:21,500 --> 00:36:23,500

fire

435

00:36:27,500 --> 00:36:29,500

yeah

436

00:36:30,060 --> 00:36:32,060

He got off the ground

437

00:36:34,300 --> 00:36:38,700

A successful launch. Oh, yeah rocket man had the ride of his life

438

00:36:39,100 --> 00:36:45,420

But here comes the but the rocket lost control way before the mythical 1000 feet

439

00:36:45,900 --> 00:36:49,500

And rocket man did not escape and deploy his parachute

440

00:36:49,980 --> 00:36:56,620

So the rocket was set on the launch pad. We all ran back to the bunker grant gave the countdown carry hit the switch and the rocket went straight

441

00:36:56,700 --> 00:36:59,340

And it was stable for about a hundred feet

442

00:36:59,980 --> 00:37:03,340

The motors were working perfectly, but at that point the rocket went out of control

443

00:37:04,140 --> 00:37:06,140

And we knew it was crashing bird

444

00:37:06,940 --> 00:37:10,220

Look at the damage to the rocket. That's crazy

445

00:37:12,140 --> 00:37:16,780

Dude, he is looking mighty crispy. We burnt his clothes off. All right. So how are we going to call this one?

446

00:37:16,860 --> 00:37:21,020

I don't know. I mean we did get it to launch that thing got almost a hundred feet in the air

447

00:37:21,100 --> 00:37:26,540

Yeah, but a hundred feet is pretty far from a thousand. Yeah, and you know what? There's no way he survived that landing

448

00:37:26,780 --> 00:37:31,820

Well, let's take the footage back to the shop. We'll have a look at it and then we can decide. All right. I think that's a good call

449

00:37:35,260 --> 00:37:40,700

So tell me everything it was great. We made it off the launch pad smooth takeoff exactly as predicted

450

00:37:40,780 --> 00:37:44,300

We made it up to about a hundred feet. Yeah, but at that point everything went wrong

451

00:37:44,380 --> 00:37:48,780

Bursted in flames started spiraling out of control before it smashed to the earth and a rocket man

452

00:37:49,100 --> 00:37:52,540

Crash and burn and when I say burn, I mean burnt to a crisp

453

00:37:53,420 --> 00:37:58,940

So we didn't reach the thousand foot altitude we were looking for and our rocket man did not safely sail down to the earth

454

00:37:59,420 --> 00:38:04,460

Nope, so how are we calling this one? Bear in mind. We gave this myth the best possible chance of working

455

00:38:04,700 --> 00:38:11,340

High performance state-of-the-art rocket motors modern materials and we even replaced the highly suspect wing system

456

00:38:11,740 --> 00:38:14,860

With a modern parachute, but I think we stopped to cause home busted

457

00:38:18,860 --> 00:38:20,860

Next adam and jamie

458

00:38:22,780 --> 00:38:27,420

Ah ramp it up by rigging a Hollywood style crashing burn

459

00:38:36,700 --> 00:38:40,540

The myth that a car always explodes if it crashes off a cliff

460

00:38:42,060 --> 00:38:44,940

Was pretty much busted after the first two tests

461

00:38:45,660 --> 00:38:52,140

Reality makes a crappy special effects crew the gas tank the heart of this myth is protected deep in the car's

462

00:38:52,860 --> 00:38:55,020

Understructure to avoid just such an outcome

463

00:38:56,300 --> 00:38:58,540

Even putting the gas tank front and center

464

00:38:59,340 --> 00:39:02,700

Failed to provide the mythical Hollywood style explosion

465

00:39:04,060 --> 00:39:06,060

I think this makes the myth totally busted

466

00:39:06,940 --> 00:39:10,940

Which just leaves the classic myth busters result replication

467

00:39:11,420 --> 00:39:13,740

How exactly do they do it in the movies?

468

00:39:15,980 --> 00:39:21,900

Right now here's my vision the hero car comes careening through this industrial area

469

00:39:21,900 --> 00:39:29,420

Which I like because it's like post industrial comes down this ramp out of control completely towards this edge

470

00:39:29,900 --> 00:39:32,700

And then plummets into the abyss

471

00:39:33,260 --> 00:39:35,260

All I need here is a ramp

472

00:39:35,740 --> 00:39:37,740

Where's my ramp?

473

00:39:38,220 --> 00:39:40,940

So the ramp will ensure the perfect crash

474

00:39:41,980 --> 00:39:43,980

At frank will bring the burn

475

00:39:44,780 --> 00:39:45,740

Hey, what do you need?

476

00:39:45,740 --> 00:39:49,340

Well, I want to run this car off the cliff and have it blow up when it hits the bottom

477

00:39:49,500 --> 00:39:55,820

Okay, lots of gasoline a little bit of explosive. It'll give you a magnificent explosion works for me

478

00:39:56,460 --> 00:40:02,620

And what works for jamie is four single gallon bottles of gasoline wrapped in detonation cord

479

00:40:02,940 --> 00:40:06,700

We're ready to load the car now with the gasoline and everything one coming

480

00:40:07,180 --> 00:40:10,460

So we'll put a couple guys in there get our gas position

481

00:40:10,780 --> 00:40:14,620

There you go get it tied down with the wire to the cleats

482

00:40:15,260 --> 00:40:18,860

And run the ring main lined on the middle toward the trunk

483

00:40:19,260 --> 00:40:24,220

And then once we get it all into position we'll hold until we cap in let's do it and be safe

484

00:40:24,220 --> 00:40:25,020

All right

485

00:40:25,020 --> 00:40:28,140

So three cars down and I think we're all in agreement that reality

486

00:40:28,700 --> 00:40:33,500

Is not nearly as exciting as an action movie. I know I'm just as disappointed as you but this

487

00:40:33,900 --> 00:40:39,820

Our fourth and final car rigged with four gallons of gasoline some explosives and wireless trigger

488

00:40:40,460 --> 00:40:44,300

Once it starts driving down this ramp towards this of this

489

00:40:44,780 --> 00:40:48,460

We're going to trigger the explosion that we want my prediction

490

00:40:50,060 --> 00:40:51,340

Mayhem

491

00:40:51,340 --> 00:40:58,300

Mayhem for sure, but frank runs a tight ship. It'll be controlled mayhem and on cue

492

00:40:59,100 --> 00:41:03,100

Okay, hollywood style car crash all the systems are in place

493

00:41:03,660 --> 00:41:05,660

three in any second two

494

00:41:05,900 --> 00:41:10,300

So you know hollywood action is going to happen one. Hopefully right in front of me

495

00:41:10,460 --> 00:41:12,460

So

496

00:41:40,460 --> 00:41:42,460

Golly

497

00:41:49,820 --> 00:41:55,740

Success with the final test perhaps adam and jayne should think about a career in film special effects

498

00:41:58,380 --> 00:42:06,380

It looks like it worked the launch was the most beautiful one yet the tumble was magnificent and the explosion was all hollywood

499

00:42:07,660 --> 00:42:08,940

Nicely done

500

00:42:08,940 --> 00:42:16,060

Cool what we just saw there was in fact an explosion the windows blew out. We had a big fireball. It was great. Wow

501

00:42:18,940 --> 00:42:20,940

But why well

502

00:42:20,940 --> 00:42:24,460

It's because we put a bunch of explosives and gasoline inside the car

503

00:42:25,020 --> 00:42:29,420

Otherwise we know that a gas tank will not support a flame

504

00:42:29,740 --> 00:42:33,980

It's burning in the tank because it's too rich inside there. There's not enough oxygen

505

00:42:34,460 --> 00:42:39,660

No explosion the only place that's appropriate to support an explosion is inside

506

00:42:40,140 --> 00:42:44,300

The engine in the cylinders and so on but could it happen?

507

00:42:45,020 --> 00:42:50,540

Sure, I suppose so it's extremely rare maybe with the right exact circumstances

508

00:42:51,020 --> 00:42:55,100

But the idea that every time a car goes off cliff it blows up

509

00:42:55,900 --> 00:42:57,260

hogwash

510

00:42:57,260 --> 00:43:01,100

And so is the guys mull over the charred car carnage

511

00:43:01,900 --> 00:43:03,900

Ha ha ha ha nice

512

00:43:04,060 --> 00:43:09,420

It's clear that hollywood hasn't completely fictionalized the physics of a crash and burn

513

00:43:10,940 --> 00:43:15,500

They've just turned a million to one shot into a silver screen certainty