

1

00:00:00,000 --> 00:00:03,300

On this head spinning episode of Mythbusters,

2

00:00:03,300 --> 00:00:08,600

Adam and Jamie fire up a fearsome explosive.

3

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

That's one way to cut up a watermelon.

4

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

As they test a military myth.

5

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

You're not nervous about making the shot, are you?

6

00:00:14,600 --> 00:00:18,800

That C4 is a serviceable cooking fuel.

7

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

It's not bad.

8

00:00:19,600 --> 00:00:22,100

But it's subjected to heavy hitting action.

9

00:00:22,100 --> 00:00:23,600

Hope! It's on a shoot!

10

00:00:23,600 --> 00:00:25,800

Creates a culinary catastrophe.

11

00:00:25,800 --> 00:00:28,600

There it goes! Pouring right onto the C4!

12

00:00:29,400 --> 00:00:31,400

Meanwhile, Carrie Grant and Tori.

13

00:00:31,400 --> 00:00:34,400

Shut up buddy. You gotta be over before you know it.

14

00:00:34,400 --> 00:00:36,400

Mulla Marshall Artsmith.

15

00:00:36,400 --> 00:00:40,200

That a fabled flying guillotine.

16

00:00:40,200 --> 00:00:42,000

Something's that was on a finger on this shoe.

17

00:00:42,000 --> 00:00:45,200

Can decapitate and capture your cranium.

18

00:00:45,200 --> 00:00:46,200

Are you ready?

19

00:00:46,200 --> 00:00:48,200

Let's do this.

20

00:00:50,700 --> 00:00:52,700

Who are the Mythbusters?

21

00:00:52,700 --> 00:00:54,700

Adam Savage.

22

00:00:54,700 --> 00:00:56,700

70% chance of sight.

23

00:00:56,700 --> 00:00:58,000

And Jamie Heineman.

24

00:00:58,100 --> 00:01:00,100

We're gonna have an adventure.

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00:01:00,100 --> 00:01:04,600

Between them more than 30 years of special effects experience,

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00:01:04,600 --> 00:01:06,600

together with Tori Bellachy.

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00:01:06,600 --> 00:01:08,100

Wasn't ready for that one, Carrie.

28

00:01:08,100 --> 00:01:09,600

Grant Imahara.

29

00:01:09,600 --> 00:01:10,900

Something's that's worth it!

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00:01:10,900 --> 00:01:12,600

And Carrie Byron.

31

00:01:12,600 --> 00:01:13,900

Let's do it.

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00:01:13,900 --> 00:01:16,100

They'll just tell the Myths.

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00:01:16,100 --> 00:01:18,100

They put them to the test.

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00:01:29,000 --> 00:01:32,000

What's with the stove?

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00:01:32,000 --> 00:01:34,000

It is our next story.

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00:01:34,000 --> 00:01:35,000

It's about cooking?

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00:01:35,000 --> 00:01:39,000

Sort of. It is a military myth and it's about replacing your normal cooking fuel

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00:01:39,000 --> 00:01:43,000

with something usually considered far more destructive.

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00:01:43,000 --> 00:01:44,500

What are the explosives?

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00:01:44,500 --> 00:01:47,000

Not just any explosive, your favorite.

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

Well that would be C4.

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00:01:48,000 --> 00:01:53,000

Exactly. The myth is that C4 is so stable, you can light it with a match

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00:01:53,000 --> 00:01:55,500

and it will burn and cook your lunch.

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00:01:55,500 --> 00:01:57,000

And it doesn't explode?

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00:01:57,000 --> 00:02:01,000

It won't. Although you're told not to stomp on it or drop your pot on it

46

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

because that could make it blow up.

47

00:02:03,000 --> 00:02:05,000

Well that would make for some hot chili.

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00:02:05,000 --> 00:02:06,000

Indeed.

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00:02:07,000 --> 00:02:11,000

C4. Not just the explosive of choice for the Mythbusters.

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00:02:11,000 --> 00:02:14,000

When in doubt, C4.

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00:02:15,000 --> 00:02:17,000

But also the military.

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00:02:17,000 --> 00:02:21,000

But can C4's power be used another way?

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00:02:21,000 --> 00:02:23,000

To cook with without exploding.

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00:02:23,000 --> 00:02:25,000

That's great.

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00:02:25,000 --> 00:02:27,000

Well there's two parts to this story.

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00:02:27,000 --> 00:02:31,000

One is that supposedly you can light C4 on fire and it will burn without blowing up.

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00:02:31,000 --> 00:02:35,000

And the second is that you better not drop a pot on it or stomp on it while it's on fire

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00:02:35,000 --> 00:02:37,000

because that could make it blow up.

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00:02:37,000 --> 00:02:38,000

I think we should test both of those.

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00:02:38,000 --> 00:02:39,000

Sure.

61

00:02:41,000 --> 00:02:46,000

So to find out if this myth is cooking with gas or just a flash in the pan,

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00:02:46,000 --> 00:02:50,000

the guys head to the safety of, you guessed it, a bomb range.

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00:02:50,000 --> 00:02:52,000

Now before we get down to the business of testing this myth,

64

00:02:52,000 --> 00:02:55,000

let's reacquaint ourselves with C4, shall we?

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00:02:55,000 --> 00:02:59,000

For this is not simply a stable high speed explosive in a plastic medium

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00:02:59,000 --> 00:03:02,000

that you can mold into the shape of a bunny and blow up.

67

00:03:02,000 --> 00:03:04,000

Oh no. This is versatile stuff.

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00:03:04,000 --> 00:03:07,000

Let's take a look at a simple C4 detonation.

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00:03:07,000 --> 00:03:10,000

This is why the military likes C4.

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00:03:10,000 --> 00:03:12,000

It can make things go away.

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00:03:12,000 --> 00:03:14,000

That's one way to cut up a water balloon.

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00:03:15,000 --> 00:03:18,000

But it's also a precision device too.

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00:03:18,000 --> 00:03:23,000

This piece of metal bent into a W shape is going to cut this bar cleanly in half.

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

That's right. W stands for...

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00:03:25,000 --> 00:03:26,000

Hoop-a!

76

00:03:26,000 --> 00:03:27,000

Three, two...

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00:03:30,000 --> 00:03:32,000

That is beautiful.

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00:03:32,000 --> 00:03:34,000

Look at that nice clean cut.

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00:03:34,000 --> 00:03:38,000

I could do a little better with a saw, but it does indeed work.

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00:03:38,000 --> 00:03:41,000

Now that we've seen how it detonates, it's time to tackle our story,

81

00:03:41,000 --> 00:03:45,000

which simply stated is that this stuff, C4 plastic explosive,

82

00:03:45,000 --> 00:03:49,000

is stable enough to actually light on fire and heat your lunch with,

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00:03:49,000 --> 00:03:52,000

that it will not blow up even if you set it on fire.

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00:03:52,000 --> 00:03:54,000

That's what we're about to test.

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00:03:55,000 --> 00:03:58,000

Okay, why might burning C4 explode?

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00:03:58,000 --> 00:04:01,000

Well, heat causes molecules to become excited.

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

The greater the heat, the more the molecule mania.

88

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

And that can cause instability and possibly an explosion.

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00:04:10,000 --> 00:04:15,000

So from the safety of their bunker and ignited by a remote neon transformer...

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00:04:15,000 --> 00:04:18,000

You ready? Igniting C4.

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00:04:18,000 --> 00:04:20,000

Seeing if it burns without blowing up.

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00:04:20,000 --> 00:04:23,000

10, 3, 2, 1...

93

00:04:24,000 --> 00:04:26,000

It's burning.

94

00:04:26,000 --> 00:04:27,000

Wow.

95

00:04:28,000 --> 00:04:29,000

It's really burning.

96

00:04:29,000 --> 00:04:31,000

It burns hot.

97

00:04:31,000 --> 00:04:33,000

But blowing up, it ain't.

98

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

I don't think I'd want to be next to that.

99

00:04:36,000 --> 00:04:38,000

I don't care what they say.

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00:04:39,000 --> 00:04:43,000

The C4 burned at more than a thousand degrees, rapidly.

101

00:04:43,000 --> 00:04:45,000

And without a kaboom.

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00:04:45,000 --> 00:04:48,000

That's very good news for this myth so far.

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00:04:48,000 --> 00:04:51,000

Now that we know it burns, let's see how well it cooks.

104

00:04:54,000 --> 00:04:58,000

Meanwhile, Grant, Carrie and Tori are attempting to wrap their heads

105

00:04:58,000 --> 00:05:01,000

around a mysterious martial arts myth.

106

00:05:01,000 --> 00:05:03,000

Alright, K, what's with the cool costume?

107

00:05:03,000 --> 00:05:04,000

Take a deep breath.

108

00:05:04,000 --> 00:05:06,000

We're doing a kung fu myth.

109

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

Yes!

110

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

Which one?

111

00:05:08,000 --> 00:05:10,000

The Flying Guillotine.

112

00:05:10,000 --> 00:05:12,000

Ugh, I love that movie.

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00:05:12,000 --> 00:05:14,000

Yes, that's the one where the guy has his weapon, it's like a hat.

114

00:05:14,000 --> 00:05:18,000

He throws it over the guy's head, and he pulls the chain, and it decapitates him.

115

00:05:18,000 --> 00:05:19,000

Calm down.

116

00:05:19,000 --> 00:05:21,000

Yeah, and not only that, but once you cut the head off,

117

00:05:21,000 --> 00:05:24,000

you can actually retrieve the head back to the thrower.

118

00:05:24,000 --> 00:05:26,000

Well, I think the cool thing is that this might be more than a movie myth.

119

00:05:26,000 --> 00:05:28,000

This might be an actual ancient weapon.

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00:05:28,000 --> 00:05:29,000

It could work.

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00:05:32,000 --> 00:05:35,000

Made famous by B-grade kung fu movies,

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00:05:35,000 --> 00:05:39,000

the Flying Guillotine was a disc that, when thrown over the neck,

123

00:05:39,000 --> 00:05:42,000

would decapitate and capture the victim's head.

124

00:05:42,000 --> 00:05:45,000

But it might not just be a filmmaker's fantasy.

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00:05:45,000 --> 00:05:51,000

Because legend has it, Emperor Yong Zheng commissioned the device in 1722.

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00:05:51,000 --> 00:05:55,000

But unfortunately for the mythbusters, no drawings of the design survive.

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00:05:56,000 --> 00:05:58,000

Okay, what a terrifying concept.

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00:05:58,000 --> 00:06:00,000

Assassins that can behead you from a distance?

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

Yeah, but you know what the real problem right now is finding a design.

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

We've been through all these history books and found nothing.

131

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

I mean, the only designs come from the movies themselves.

132

00:06:08,000 --> 00:06:10,000

I mean, we're on our own on this one.

133

00:06:10,000 --> 00:06:12,000

Alright, well why don't we come up with some prototypes?

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00:06:12,000 --> 00:06:15,000

We can incorporate some ideas from the movies and come up with our own ideas

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00:06:15,000 --> 00:06:17,000

and see which works best.

136

00:06:17,000 --> 00:06:20,000

So we might actually get to design our own Flying Guillotine.

137

00:06:20,000 --> 00:06:22,000

This is awesome.

138

00:06:22,000 --> 00:06:27,000

So in order to test whether the mythical Flying Guillotine was a viable assassination weapon,

139

00:06:27,000 --> 00:06:32,000

they're going to divide and compete to see if they can design their own Flying Guillotine.

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00:06:33,000 --> 00:06:35,000

Based on four parameters.

141

00:06:35,000 --> 00:06:37,000

One, enough power to cut the head off.

142

00:06:37,000 --> 00:06:40,000

Two, it has to be light enough to be thrown.

143

00:06:40,000 --> 00:06:44,000

Three, it has to be safe enough to be deployed without cutting your own fingers off.

144

00:06:44,000 --> 00:06:48,000

And four, you have to have some means to retrieve the head.

145

00:06:48,000 --> 00:06:53,000

With each of them working alone, it's going to test the team's prototyping skills to the limit.

146

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

Now, a traditional Guillotine gets its cutting force from the fact that they have a massive blade

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

traveling a long distance to create enough force to chop a head off.

148

00:07:03,000 --> 00:07:08,000

We have to make our devices lightweight, and we only have about six inches of travel

149

00:07:08,000 --> 00:07:10,000

to create that same sort of force.

150

00:07:10,000 --> 00:07:18,000

In their respective corners of the shop, the guys begin by playing with ideas and concepts that may or may not work.

151

00:07:18,000 --> 00:07:21,000

Alright, so I had a great idea for Flying Guillotine.

152

00:07:21,000 --> 00:07:24,000

I asked the researchers to find me a bear trap.

153

00:07:24,000 --> 00:07:30,000

Hopefully this would have enough energy to actually crush through a person's head.

154

00:07:32,000 --> 00:07:39,000

Clearly there's enough force, but throwing this through the air could be problematic.

155

00:07:39,000 --> 00:07:43,000

Meaning it's going to be a try it and seek kind of process.

156

00:07:43,000 --> 00:07:45,000

Yeah!

157

00:07:45,000 --> 00:07:49,000

Sometimes in the design process, you just have to get in there and get your hands dirty.

158

00:07:49,000 --> 00:07:54,000

Because there are no historical documents, no blueprints, no plans for Flying Guillotine,

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

we're just going to have to figure this out as we go, which is going to mean a lot of trial and error.

160

00:07:59,000 --> 00:08:01,000

Probably mostly error.

161

00:08:01,000 --> 00:08:06,000

And that's immediately clear from Cary's first fiddle with a fan from an air conditioning duct.

162

00:08:06,000 --> 00:08:10,000

It's hard to use, it's getting heavy, and I just don't think it's going to work.

163

00:08:10,000 --> 00:08:13,000

So it's back to square one for Cary.

164

00:08:13,000 --> 00:08:20,000

And likewise on Bellegy's bench, this lethal looking scissor prototype he's made is also a dud.

165

00:08:20,000 --> 00:08:26,000

My Flying Guillotine doesn't work at all. I mean it kind of looks cool,

166

00:08:26,000 --> 00:08:33,000

but if you put something inside of it, like that's the safest place to be.

167

00:08:33,000 --> 00:08:40,000

Despite the pressure of their early designs failing on several fronts, the guys aren't deterred.

168

00:08:40,000 --> 00:08:42,000

I'm not the kind of the whole new design.

169

00:08:42,000 --> 00:08:47,000

Learning from your failures is all part of the prototype process, which is exactly what Cary does

170

00:08:47,000 --> 00:08:50,000

by opting for a far simpler concept.

171

00:08:50,000 --> 00:08:56,000

Picture a cigar cutter. Basically just have a blade on the rim of the hat that goes through.

172

00:08:56,000 --> 00:08:58,000

Takes head right off.

173

00:08:58,000 --> 00:09:06,000

Meanwhile, using an authentic Qing Dynasty design app, Grant has decided simpler is not better.

174

00:09:06,000 --> 00:09:10,000

Now what you need in order to cut someone's head off with the blade is speed and power.

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00:09:10,000 --> 00:09:13,000

Now we've got this ring that's supposed to go over someone's head,

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00:09:13,000 --> 00:09:17,000

but that doesn't leave a lot of space for the blades inside of it to accelerate.

177

00:09:17,000 --> 00:09:24,000

So my solution is to actually cock the blades all the way back and let them swing out and around.

178

00:09:24,000 --> 00:09:31,000

With his lawnmower of death sporting five highly sprung cutting blades, Grant's ready to pull the pin.

179

00:09:31,000 --> 00:09:36,000

That was close.

180

00:09:37,000 --> 00:09:40,000

Okay, this could be the most dangerous experiment we've ever worked on.

181

00:09:40,000 --> 00:09:43,000

Forget car crashes, explosions, guns.

182

00:09:43,000 --> 00:09:47,000

Ah, I am! Somebody's losing a finger on this shoot.

183

00:09:47,000 --> 00:09:54,000

Don't cry, Wolf Cary, because then you're going to get hurt and no one's going to rush to help you.

184

00:10:07,000 --> 00:10:13,000

Can you cook your goose safely using C4?

185

00:10:13,000 --> 00:10:15,000

The military myth says you can.

186

00:10:15,000 --> 00:10:18,000

And Jamie and Adam are hot on the trail to find out.

187

00:10:18,000 --> 00:10:20,000

It's really burning.

188

00:10:20,000 --> 00:10:24,000

So far they've seen it does burn, but that's not all.

189

00:10:24,000 --> 00:10:31,000

Let's just pause and take a moment here to recognize that we've just ignited a high explosive

190

00:10:31,000 --> 00:10:36,000

and burned it and it didn't blow up. This is going to be fun.

191

00:10:36,000 --> 00:10:41,000

Given this is a military myth, they're going to use a ready to eat and eat military meal.

192

00:10:41,000 --> 00:10:44,000

Alright, time to choose what we're going to cut.

193

00:10:44,000 --> 00:10:46,000

So what's for dinner, chef?

194

00:10:46,000 --> 00:10:47,000

Well, we've got four choices.

195

00:10:47,000 --> 00:10:50,000

Spaghetti with meat sauce, pork sausage with cream gravy,

196

00:10:50,000 --> 00:10:55,000

Southwest saw beef and black beans with sauce, or by personal favorite, the brisket entree.

197

00:10:55,000 --> 00:10:58,000

I'll go with pork. We always go with pork.

198

00:10:58,000 --> 00:11:02,000

So all that's left to do now is retire to a safe distance and like the C4.

199

00:11:02,000 --> 00:11:03,000

We're good to go.

200

00:11:03,000 --> 00:11:06,000

Here we go. Cookin' lunch with C4.

201

00:11:06,000 --> 00:11:09,000

In three, two, one.

202

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

We have ignition.

203

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

It's burning beautifully.

204

00:11:15,000 --> 00:11:18,000

Wow, and that's it. It's like two minutes. It burns out.

205

00:11:18,000 --> 00:11:21,000

Yeah, it burns vigorously, but it's not a big deal.

206

00:11:21,000 --> 00:11:23,000

It's just a little bit of a mess.

207

00:11:23,000 --> 00:11:26,000

Wow, and that's it. It's like two minutes. It burns out.

208

00:11:26,000 --> 00:11:29,000

Yeah, it burns vigorously, but a little too quickly.

209

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

Let's see how hot we got the food.

210

00:11:31,000 --> 00:11:34,000

Indeed, the proof of the pudding is in the eating.

211

00:11:34,000 --> 00:11:36,000

Eating food cooked with C4.

212

00:11:38,000 --> 00:11:40,000

It's not bad, but it's not hot.

213

00:11:40,000 --> 00:11:42,000

No, it's kind of warm.

214

00:11:42,000 --> 00:11:45,000

With the C4 cooked MRE barely lukewarm,

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00:11:45,000 --> 00:11:49,000

the guys now want to scientifically test how C4 compares

216

00:11:49,000 --> 00:11:52,000

with three other commercially available cooking fuels.

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00:11:52,000 --> 00:11:55,000

After all, if other fuels are better,

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00:11:55,000 --> 00:11:58,000

why would a soldier even resort to using C4?

219

00:11:58,000 --> 00:12:00,000

So these are our cooking fuels.

220

00:12:00,000 --> 00:12:03,000

There are tablets that you might normally use while camping

221

00:12:03,000 --> 00:12:05,000

made of hexamethylene tetramine.

222

00:12:05,000 --> 00:12:08,000

There's a trioxane tablet,

223

00:12:08,000 --> 00:12:11,000

which is issued by the military for their rations.

224

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

And there is chafing dish fuel, which is basically an alcohol.

225

00:12:15,000 --> 00:12:18,000

Each of the fuels will be ignited simultaneously,

226

00:12:18,000 --> 00:12:21,000

and each will then attempt to do its best

227

00:12:21,000 --> 00:12:24,000

to heat up an identically sized pot of water.

228

00:12:24,000 --> 00:12:27,000

This is comparative cooking tests for fuels,

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00:12:27,000 --> 00:12:32,000

including C4 and 3, 2, 1, go.

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00:12:32,000 --> 00:12:36,000

The neon transformer simultaneously sparks up all four fuels,

231

00:12:36,000 --> 00:12:38,000

each of which weighs one ounce.

232

00:12:38,000 --> 00:12:40,000

C4 is definitely going.

233

00:12:40,000 --> 00:12:42,000

Yeah, they're all going. Now we wait.

234

00:12:42,000 --> 00:12:44,000

Now we wait.

235

00:12:45,000 --> 00:12:47,000

But that wait isn't long,

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00:12:47,000 --> 00:12:50,000

as the C4 burns itself out in two minutes.

237

00:12:50,000 --> 00:12:54,000

C4's water is at 117 degrees Fahrenheit.

238

00:12:54,000 --> 00:12:56,000

Everything else is burning along merrily.

239

00:12:56,000 --> 00:12:58,000

Closely followed by the trioxane,

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00:12:58,000 --> 00:13:00,000

the fuel of choice by the military.

241

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

All right, trioxane got up to 120 degrees.

242

00:13:05,000 --> 00:13:08,000

And then the hexamethylene tetramine.

243

00:13:08,000 --> 00:13:10,000

Ho, ho, ho!

244

00:13:10,000 --> 00:13:12,000

149 degrees Fahrenheit.

245

00:13:12,000 --> 00:13:15,000

Finally, the chafing dish.

246

00:13:15,000 --> 00:13:19,000

A measly 115 degrees Fahrenheit.

247

00:13:19,000 --> 00:13:22,000

So how did our C4 do in the cooking fuel cook-off?

248

00:13:22,000 --> 00:13:23,000

Not badly.

249

00:13:23,000 --> 00:13:25,000

By this chart here, we can see that one of our fuels,

250

00:13:25,000 --> 00:13:28,000

hexamethylene tetramine, did a spectacular job

251

00:13:28,000 --> 00:13:31,000

heating the water to a piping hot 149 degrees.

252

00:13:31,000 --> 00:13:35,000

The other two, the chafing dish fuel and trioxane,

253

00:13:35,000 --> 00:13:37,000

heated within a couple of degrees of C4.

254

00:13:37,000 --> 00:13:41,000

And you'll note, C4 did the job a lot faster.

255

00:13:41,000 --> 00:13:43,000

That tells me it not only burns,

256

00:13:43,000 --> 00:13:45,000

it is a viable cooking fuel.

257

00:13:50,000 --> 00:13:53,000

Carrie Grant and Tori are going kung fu crazy,

258

00:13:55,000 --> 00:13:58,000

testing the myth of the Chinese flying guillotine.

259

00:13:58,000 --> 00:14:01,000

Ha, ha, ha! You're decoding my head, I almost killed me!

260

00:14:01,000 --> 00:14:07,000

Their first set of designs were uniformly successful at failing.

261

00:14:07,000 --> 00:14:09,000

That's the safest place to be.

262

00:14:09,000 --> 00:14:13,000

Tori's latest idea is as clever as it is potentially deadly.

263

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

This one is a very simple design.

264

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

It's a steel ring, sharpened,

265

00:14:17,000 --> 00:14:20,000

and then there is a groove on the outside of the ring

266

00:14:20,000 --> 00:14:22,000

that I have wrapped this cable around.

267

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

Let's see if it works.

268

00:14:23,000 --> 00:14:24,000

Okay, stand back everyone,

269

00:14:24,000 --> 00:14:28,000

because Tori's ready to take his brutal saw disc for a spin.

270

00:14:32,000 --> 00:14:34,000

Dude, that looks like it worked great!

271

00:14:34,000 --> 00:14:36,000

Alright, well it cut through foam.

272

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

I wonder what it's going to do to a neck.

273

00:14:39,000 --> 00:14:43,000

Meanwhile, Carrie's pondering process is paying off too.

274

00:14:43,000 --> 00:14:45,000

What I've come up here with now is a kitchen knife

275

00:14:45,000 --> 00:14:47,000

on top of a saw blade that's at an angle,

276

00:14:47,000 --> 00:14:49,000

sort of like a traditional French guillotine.

277

00:14:49,000 --> 00:14:52,000

Two out of three headless Frenchmen say it's the best.

278

00:14:52,000 --> 00:14:56,000

That will work on either a spring load or a really good yank.

279

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

To test the cigar cutter,

280

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

Carrie's rigged a rubber leg and a vice

281

00:15:01,000 --> 00:15:03,000

to see if she can get a clean cut.

282

00:15:04,000 --> 00:15:07,000

You ready? One, two, three.

283

00:15:09,000 --> 00:15:10,000

Okay, maybe not.

284

00:15:10,000 --> 00:15:12,000

Looks like it works pretty good to me.

285

00:15:12,000 --> 00:15:14,000

It just takes a few yanks.

286

00:15:14,000 --> 00:15:18,000

Finally, despite a near involuntary appendectomy,

287

00:15:18,000 --> 00:15:23,000

Grant has persevered with his beautifully designed,

288

00:15:23,000 --> 00:15:27,000

but alarmingly heavy, five-bladed mechanism.

289

00:15:27,000 --> 00:15:30,000

Okay, keep your arms and legs clear of the ride at all times.

290

00:15:30,000 --> 00:15:33,000

Here we go. In three, two, one.

291

00:15:33,000 --> 00:15:35,000

I feel a little queasy, I gotta say.

292

00:15:35,000 --> 00:15:36,000

Me too.

293

00:15:36,000 --> 00:15:39,000

Like a red-hot guillotine through ice cream,

294

00:15:39,000 --> 00:15:43,000

Cantaloupe's no match for Grant's fearsome fruit slicer.

295

00:15:44,000 --> 00:15:47,000

With the cutting component looking good for each of the three designs,

296

00:15:49,000 --> 00:15:51,000

flying guillotine.

297

00:15:51,000 --> 00:15:53,000

There's one more thing that I want to show you.

298

00:15:53,000 --> 00:15:55,000

I'm going to show you the way.

299

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

I'm going to show you the way.

300

00:15:57,000 --> 00:15:59,000

I'm going to show you the way.

301

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

Flying guillotine.

302

00:16:02,000 --> 00:16:04,000

There's one thing left to sort out.

303

00:16:04,000 --> 00:16:06,000

The net to capture the head.

304

00:16:06,000 --> 00:16:09,000

I know this looks like a guillotine cap,

305

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

but it's actually a salad bowl.

306

00:16:11,000 --> 00:16:14,000

That's right, death by salad bowl.

307

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

So far, so good.

308

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

Carrie's concentrated on decoration for decapitation.

309

00:16:20,000 --> 00:16:23,000

He looks like he's all dressed up for a funeral.

310

00:16:23,000 --> 00:16:25,000

His own.

311

00:16:25,000 --> 00:16:30,000

Not to be outdone, Grant's final head capture feature is also very catchy.

312

00:16:30,000 --> 00:16:32,000

I added this cage,

313

00:16:32,000 --> 00:16:38,000

which allows you to connect all the pins together to this disc with a spring.

314

00:16:38,000 --> 00:16:42,000

You deploy the one spring that fires all the blades at once,

315

00:16:42,000 --> 00:16:46,000

and then this cage also captures the head for retrieval.

316

00:16:48,000 --> 00:16:49,000

It's done.

317

00:16:49,000 --> 00:16:52,000

I call it the decapitron.

318

00:16:53,000 --> 00:16:58,000

Can these flying guillotine weapons cut it in the real world?

319

00:17:07,000 --> 00:17:12,000

Could the mythical Chinese flying guillotine have been a real assassin's weapon?

320

00:17:12,000 --> 00:17:16,000

What better place for Carrie Grant and Tori to test their own designs

321

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

than in a genuine Chinese garden?

322

00:17:19,000 --> 00:17:21,000

I don't think we could have picked a better environment.

323

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

This is awesome.

324

00:17:23,000 --> 00:17:26,000

Alright, now that we've each designed and built our own flying guillotine,

325

00:17:26,000 --> 00:17:31,000

we are here at Bamboo Giant to test three things in order to confirm this myth.

326

00:17:31,000 --> 00:17:33,000

First, the throwability.

327

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

Second, can it decapitate a head?

328

00:17:35,000 --> 00:17:38,000

And if so, can it retrieve the severed head?

329

00:17:38,000 --> 00:17:41,000

Up first is throwability testing.

330

00:17:41,000 --> 00:17:45,000

But with safety in mind, the weapons won't be earned.

331

00:17:45,000 --> 00:17:47,000

This is our target. We have a head on a stick.

332

00:17:47,000 --> 00:17:52,000

We're going to see if we can actually land our flying guillotine with accuracy and ease.

333

00:17:52,000 --> 00:17:54,000

And we're going to do it from a distance of about ten feet,

334

00:17:54,000 --> 00:17:58,000

which is about as far as you would be if you had to deploy your device.

335

00:17:59,000 --> 00:18:01,000

Each of the guys will take turns to throw.

336

00:18:01,000 --> 00:18:05,000

First up, it's Carrie with her designer cigar cutter.

337

00:18:05,000 --> 00:18:07,000

Okay, this is the throwing test. Ready?

338

00:18:07,000 --> 00:18:09,000

Alright, we're looking for a ringer.

339

00:18:10,000 --> 00:18:12,000

The cigar cutter flies.

340

00:18:13,000 --> 00:18:15,000

Well, you got its feet.

341

00:18:15,000 --> 00:18:18,000

On throw one, it's way short of the mark.

342

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

Grants next, his unwieldy decapitron's not exactly an aerodynamic masterpiece.

343

00:18:24,000 --> 00:18:29,000

My design, it weighs in at a good seven or eight pounds.

344

00:18:29,000 --> 00:18:33,000

So as a secondary weapon, I'm relying on blunt force trauma.

345

00:18:34,000 --> 00:18:37,000

Yep, and the first throw backs that up.

346

00:18:38,000 --> 00:18:40,000

Oh, super close.

347

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

That's another miss. So it's Tori's turn.

348

00:18:44,000 --> 00:18:46,000

So mine's pretty light and it's kind of shaped like a frisbee.

349

00:18:46,000 --> 00:18:47,000

So it's going to be easy to throw.

350

00:18:47,000 --> 00:18:51,000

Whether or not I can hit my target, that remains to be seen.

351

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

Alright, spinning, solid, bullet, death. You guys ready?

352

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

Let's see it.

353

00:18:58,000 --> 00:19:03,000

That's three throws and three nos, which isn't good news for the myth.

354

00:19:04,000 --> 00:19:06,000

Can Carrie do better in round two?

355

00:19:06,000 --> 00:19:08,000

Ready?

356

00:19:08,000 --> 00:19:10,000

Yeah!

357

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

This time she nails it.

358

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

Good job.

359

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

Not to be outdone, Grants be heading behemoth.

360

00:19:23,000 --> 00:19:25,000

Scores a direct hit too.

361

00:19:26,000 --> 00:19:28,000

Nice!

362

00:19:28,000 --> 00:19:29,000

You got it.

363

00:19:29,000 --> 00:19:30,000

That was awesome.

364

00:19:30,000 --> 00:19:32,000

Tori's second go.

365

00:19:33,000 --> 00:19:35,000

The salad bowl sores.

366

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

It's over.

367

00:19:39,000 --> 00:19:41,000

It's three for three in the throwing stakes.

368

00:19:41,000 --> 00:19:43,000

The myth may still be alive.

369

00:19:44,000 --> 00:19:48,000

On the benchmark test so far, they've all ticked the throwability box.

370

00:19:49,000 --> 00:19:55,000

Next, it's weapons cocked and loaded to see if their gear teams can achieve a decent decapitation.

371

00:19:55,000 --> 00:19:58,000

This is where the metal meets the mannequin.

372

00:19:58,000 --> 00:20:02,000

Their target is a pig's neck married to a synthetic head.

373

00:20:02,000 --> 00:20:04,000

My favorite part of every show.

374

00:20:04,000 --> 00:20:06,000

It's very anatomically correct.

375

00:20:07,000 --> 00:20:08,000

You can just keep his head on.

376

00:20:08,000 --> 00:20:11,000

It's even more of a war show than usual.

377

00:20:11,000 --> 00:20:14,000

They'll each get one shot at decapitation.

378

00:20:14,000 --> 00:20:18,000

This is my flying guillotine. It is based on the traditional guillotine.

379

00:20:18,000 --> 00:20:24,000

Now, they've been using this sort of technology for hundreds of years to behead people.

380

00:20:24,000 --> 00:20:27,000

So, I'm hoping with a little bit of strength and a little quickness,

381

00:20:27,000 --> 00:20:29,000

I might actually be able to pull a head off.

382

00:20:29,000 --> 00:20:32,000

Without the weight or acceleration of a traditional guillotine...

383

00:20:32,000 --> 00:20:33,000

Are you guys ready?

384

00:20:33,000 --> 00:20:34,000

Yeah, ready.

385

00:20:34,000 --> 00:20:36,000

Hers relies on brute pulling power.

386

00:20:39,000 --> 00:20:40,000

Did it work?

387

00:20:41,000 --> 00:20:43,000

It looks like it cut a little of the bone in the skin,

388

00:20:43,000 --> 00:20:46,000

but it more pulled the head off than really cut through the neck.

389

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

Tori's right.

390

00:20:47,000 --> 00:20:50,000

It was in fact more dislocation than decapitation.

391

00:20:50,000 --> 00:20:53,000

It cut trachea. It cut a little of the skin.

392

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

It cut a little of the bone, but it did not get a clean decapitation.

393

00:20:57,000 --> 00:21:00,000

Grant's deadly decapitron is next.

394

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

Mom, don't watch this part.

395

00:21:03,000 --> 00:21:06,000

This is definitely the most dangerous part of it,

396

00:21:06,000 --> 00:21:10,000

which is arming the device, because it's all spring-loaded.

397

00:21:10,000 --> 00:21:15,000

If something goes wrong, it could actually fire all the blades off at once while I'm holding it.

398

00:21:15,000 --> 00:21:20,000

With his hyper-engineered decapitron, Grant's design has a minor flaw.

399

00:21:20,000 --> 00:21:24,000

He has to pull vertically upward for his cable to release the blades.

400

00:21:24,000 --> 00:21:28,000

Gee, I think that might be more dangerous for the thrower than the receiver.

401

00:21:28,000 --> 00:21:30,000

And that means he needs a ladder to launch.

402

00:21:30,000 --> 00:21:32,000

That thing is insane!

403

00:21:32,000 --> 00:21:35,000

Hardly a handy assassin's weapon.

404

00:21:35,000 --> 00:21:36,000

Ready?

405

00:21:36,000 --> 00:21:39,000

Three, two, one.

406

00:21:39,000 --> 00:21:41,000

Now that's a pain in the neck.

407

00:21:41,000 --> 00:21:44,000

That's a cow-chee!

408

00:21:44,000 --> 00:21:48,000

Despite being feared by melons across the land,

409

00:21:48,000 --> 00:21:51,000

when it comes to necks, it's only cut skin deep.

410

00:21:51,000 --> 00:21:53,000

Not a clean decapitation.

411

00:21:53,000 --> 00:21:57,000

And that leaves just Tori's salad bowl of death still on the menu.

412

00:21:57,000 --> 00:22:01,000

Not only is he a Kung Fu master, he is also a bikippa.

413

00:22:01,000 --> 00:22:04,000

Alright, ready to chop some heads?

414

00:22:04,000 --> 00:22:06,000

Where did you get a gong?

415

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

We had one in the shop.

416

00:22:08,000 --> 00:22:09,000

Fight!

417

00:22:09,000 --> 00:22:13,000

Alright, here we go, flying guillotine in three, two, one.

418

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

That was gruesome!

419

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

Crucifical, but impressive.

420

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

God, look at that, it cut through the bone.

421

00:22:24,000 --> 00:22:27,000

And the trachea and the karate artery, and wow!

422

00:22:27,000 --> 00:22:30,000

It did a lot more damage than I expected, that is promising!

423

00:22:30,000 --> 00:22:35,000

And that means Tori's is clearly the most promising of the three designs.

424

00:22:35,000 --> 00:22:41,000

It's light, it's sharp, and simple enough that it could have been built in 1700s China.

425

00:22:43,000 --> 00:22:45,000

Oh, and what about head retrieval, you ask?

426

00:22:45,000 --> 00:22:49,000

Simple, with no decapitation, there can be no retrieval.

427

00:22:49,000 --> 00:22:51,000

That one's still to be tested.

428

00:22:55,000 --> 00:23:00,000

Part one of the C4 cook-off myth is confirmed.

429

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

C4 can make a stable, reliable fuel.

430

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

It's burning beautifully.

431

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

So it's on to part two.

432

00:23:07,000 --> 00:23:13,000

If that flaming C4 gets some sort of impact, will it lose its stability and explode to Kingdom Come?

433

00:23:14,000 --> 00:23:19,000

An explosion is a chemical reaction, and heat tends to speed up chemical reactions.

434

00:23:19,000 --> 00:23:24,000

So it makes sense that if you're burning an explosive, it's going to make it more sensitive.

435

00:23:24,000 --> 00:23:31,000

So if we happen to be cooking with C4, and what we're cooking with weighs, say, 7.5 pounds,

436

00:23:31,000 --> 00:23:34,000

and it drops on the burning C4, you might have a problem.

437

00:23:34,000 --> 00:23:41,000

With the heavy pod raised to a height of 3 feet above the C4, it will stop with a force of 150 pounds.

438

00:23:41,000 --> 00:23:50,000

This is a full pot dropped on flaming C4 in 3, 2, 1, go.

439

00:23:53,000 --> 00:23:55,000

They just put it out.

440

00:23:55,000 --> 00:23:56,000

You know what they say.

441

00:23:56,000 --> 00:23:58,000

A watch pot doesn't explode.

442

00:23:58,000 --> 00:24:01,000

No, a drop pot doesn't explode. Thanks for ruining my joke.

443

00:24:01,000 --> 00:24:09,000

It seems that even a light, the C4 is still too stable for a 7 pound pot to prompt an explosion.

444

00:24:09,000 --> 00:24:14,000

So the myth is that pot dropped on flaming C4 will make it go off, and we got a perfect ending.

445

00:24:14,000 --> 00:24:15,000

No explosion.

446

00:24:15,000 --> 00:24:17,000

Not even, I don't even see the C4.

447

00:24:17,000 --> 00:24:18,000

Wait a second.

448

00:24:18,000 --> 00:24:20,000

There it is.

449

00:24:20,000 --> 00:24:21,000

No explosion at all.

450

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

Right now, it's not looking very good for the myth.

451

00:24:25,000 --> 00:24:26,000

Well, that didn't work.

452

00:24:26,000 --> 00:24:27,000

What's next?

453

00:24:27,000 --> 00:24:28,000

Well, I've heard two parts to this.

454

00:24:28,000 --> 00:24:33,000

One is that you shouldn't drop a pot on the flaming C4, but the other is that you shouldn't try and

stamp it out.

455

00:24:33,000 --> 00:24:35,000

Stomping on burning C4.

456

00:24:35,000 --> 00:24:37,000

Well, I'm not going to do that.

457

00:24:37,000 --> 00:24:38,000

You can do that if you want.

458

00:24:38,000 --> 00:24:40,000

Well, thanks, but no thanks.

459

00:24:40,000 --> 00:24:42,000

I've actually worked on the perfect thing.

460

00:24:42,000 --> 00:24:45,000

Editors, roll the montage of my robot stomper build.

461

00:24:47,000 --> 00:24:49,000

Okay, here's what Adam made earlier.

462

00:24:53,000 --> 00:24:56,000

A pneumatically powered stomping robot.

463

00:24:59,000 --> 00:25:01,000

I think he's ready for prime time.

464

00:25:02,000 --> 00:25:03,000

He certainly is.

465

00:25:04,000 --> 00:25:05,000

There we go.

466

00:25:05,000 --> 00:25:06,000

Powering up the man.

467

00:25:09,000 --> 00:25:10,000

Perfect.

468

00:25:10,000 --> 00:25:12,000

Now for the second impact test.

469

00:25:12,000 --> 00:25:16,000

With Adam's robot designed to accurately replicate the force of a human stomp,

470

00:25:16,000 --> 00:25:20,000

will that set off an explosion when it hits the burning C4?

471

00:25:21,000 --> 00:25:23,000

Make it like a nice toasty marshmallow.

472

00:25:24,000 --> 00:25:28,000

And then step two is to fire up Robo Stomp.

473

00:25:28,000 --> 00:25:31,000

In three, two, one, stomp.

474

00:25:33,000 --> 00:25:35,000

Oh, it's on his shoe.

475

00:25:36,000 --> 00:25:39,000

Despite the impact of Robo Stomp's pneumatic foot,

476

00:25:41,000 --> 00:25:45,000

the burning C4 is still too stable to explode.

477

00:25:45,000 --> 00:25:49,000

Look, you don't get much more real world than dropping a cooking pot

478

00:25:49,000 --> 00:25:52,000

or stomping on the burning C4, and nothing happened.

479

00:25:52,000 --> 00:25:53,000

It's just too stable.

480

00:25:53,000 --> 00:25:56,000

Clearly, we're going to have to go to some ridiculous lengths

481

00:25:56,000 --> 00:25:58,000

to get this stuff to blow up.

482

00:25:58,000 --> 00:25:59,000

Exactly.

483

00:26:00,000 --> 00:26:04,000

So did someone mention dropping a really heavy object?

484

00:26:04,000 --> 00:26:05,000

So why the anvil?

485

00:26:05,000 --> 00:26:09,000

Well, this testing is all about determining how shock sensitive a C4 is.

486

00:26:09,000 --> 00:26:12,000

When we drop this anvil, we're looking at something like

487

00:26:12,000 --> 00:26:16,000

1500 pounds per square inch being exerted on that C4.

488

00:26:16,000 --> 00:26:17,000

And that's quite an impact.

489

00:26:17,000 --> 00:26:21,000

And if that doesn't do it, that says a lot about the myth.

490

00:26:21,000 --> 00:26:22,000

Indeed it does.

491

00:26:22,000 --> 00:26:26,000

Because the anvil tops the scales at 90 pounds.

492

00:26:26,000 --> 00:26:30,000

Looks like we have ignition, claiming C4 with an anvil dropped on it.

493

00:26:30,000 --> 00:26:33,000

And three, two, one, go.

494

00:26:34,000 --> 00:26:35,000

Oh!

495

00:26:37,000 --> 00:26:38,000

Perfect landing.

496

00:26:38,000 --> 00:26:39,000

Nice work.

497

00:26:39,000 --> 00:26:41,000

And no explosion.

498

00:26:41,000 --> 00:26:43,000

I don't know what's going to blow this stuff up.

499

00:26:43,000 --> 00:26:44,000

We've burned it.

500

00:26:44,000 --> 00:26:45,000

We've smashed it.

501

00:26:45,000 --> 00:26:47,000

We've smashed it and burned it.

502

00:26:47,000 --> 00:26:49,000

I don't know what else to do to it.

503

00:26:49,000 --> 00:26:51,000

Let's shoot it with guns.

504

00:26:51,000 --> 00:26:53,000

Sure, why not?

505

00:26:58,000 --> 00:27:02,000

Back from testing, it's clear that of the three prototypes,

506

00:27:02,000 --> 00:27:07,000

Tori's flying guillotine came closest to completing a decapitation.

507

00:27:07,000 --> 00:27:10,000

Halfway through the bone, that is promising.

508

00:27:10,000 --> 00:27:13,000

But since close is not close enough to prove the myth,

509

00:27:13,000 --> 00:27:16,000

it's time to refine this design.

510

00:27:18,000 --> 00:27:23,000

Okay, so we've left the bamboo forest and we're back at our Chinese palace.

511

00:27:23,000 --> 00:27:24,000

We have one more test to do.

512

00:27:24,000 --> 00:27:28,000

We want to see if we can actually achieve a full decapitation,

513

00:27:28,000 --> 00:27:31,000

a throw, slice, capture, retrieve.

514

00:27:31,000 --> 00:27:34,000

Because ultimately, we want to find out if the Smith is plausible.

515

00:27:34,000 --> 00:27:39,000

Tori's prototype, the salad bowl of death, slices as it spins against the neck.

516

00:27:39,000 --> 00:27:42,000

Can he improve it to sever ahead completely?

517

00:27:42,000 --> 00:27:47,000

One thing that I notice on my guillotine is that it cut halfway through the neck bone.

518

00:27:47,000 --> 00:27:50,000

I think it's because I have a straight edge on my guillotine.

519

00:27:50,000 --> 00:27:54,000

So what I'm thinking is if I give it a saw edge, cut grooves in the blade,

520

00:27:54,000 --> 00:27:56,000

it'll help me cut through that bone.

521

00:27:56,000 --> 00:28:00,000

Hopefully this will give me that advantage to get a clean decapitation.

522

00:28:00,000 --> 00:28:04,000

To increase the cutting power even further, he's also lengthened the pulling cable.

523

00:28:04,000 --> 00:28:08,000

That way I have the guillotine spinning longer.

524

00:28:08,000 --> 00:28:12,000

And hopefully that'll give me more cutting power to get through that neck.

525

00:28:12,000 --> 00:28:18,000

And if they can achieve a beheading, the final hurdle is to see if they can retrieve the head.

526

00:28:18,000 --> 00:28:22,000

So Tori's attached a see-through net to do just that.

527

00:28:22,000 --> 00:28:25,000

Alright, so I added this not because I want him to be a beekeeper,

528

00:28:25,000 --> 00:28:28,000

but that way I can see the head get cut off as it's happening.

529

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

So stranger to danger, poor old Buster steps up one more time.

530

00:28:32,000 --> 00:28:35,000

Chin up buddy. Gonna be over before you know it.

531

00:28:35,000 --> 00:28:37,000

And they're set to test.

532

00:28:37,000 --> 00:28:40,000

Alright, so I made the adjustments to my guillotine.

533

00:28:40,000 --> 00:28:42,000

It's time to see if it'll cut a head off.

534

00:28:42,000 --> 00:28:44,000

Okay, we have the exact same circumstances as before.

535

00:28:44,000 --> 00:28:48,000

Yeah, we've got the same diameter neck, same distance, we're ready to go.

536

00:28:48,000 --> 00:28:50,000

Alright, let's do it.

537

00:28:52,000 --> 00:28:55,000

Like a mythical martial arts master,

538

00:28:56,000 --> 00:29:02,000

Tori takes the head clean off and it's in the bag, literally on just the first go.

539

00:29:02,000 --> 00:29:04,000

Oh, we got it.

540

00:29:04,000 --> 00:29:07,000

Look, his head's in the bag.

541

00:29:07,000 --> 00:29:15,000

It's a major achievement and it means Tori's improved design has now met all three benchmarks for the flying guillotine.

542

00:29:15,000 --> 00:29:21,000

That gory success could mean only one thing, there really could be something to this myth.

543

00:29:21,000 --> 00:29:23,000

You guys, that was amazing.

544

00:29:23,000 --> 00:29:29,000

I know not only did we create a real flying guillotine from scratch, but we achieved all the criteria for the myth.

545

00:29:29,000 --> 00:29:34,000

Yeah, I mean we landed it on the head, decapitate the guy and retrieve the head in the net.

546

00:29:34,000 --> 00:29:41,000

Yeah, we proved it on a basic level against a static enemy, but I don't think anybody's gonna be holding still in a real life combat situation.

547

00:29:41,000 --> 00:29:42,000

What do you have in mind?

548

00:29:42,000 --> 00:29:44,000

I have a few ideas.

549

00:29:44,000 --> 00:29:46,000

Oh, this should be interesting.

550

00:29:46,000 --> 00:29:48,000

Coming up in Cooking with C4.

551

00:29:48,000 --> 00:29:50,000

That makes you shaky when you're nervous.

552

00:29:50,000 --> 00:29:55,000

And Tori's flying guillotine gets put to the ultimate test.

553

00:29:55,000 --> 00:29:57,000

There's a guy behind you!

554

00:30:03,000 --> 00:30:10,000

So far, impact has failed to get burning C4 to explode, but is that all about to change?

555

00:30:10,000 --> 00:30:15,000

So we dropped an anvil on the C4, nothing happened, blunt force doesn't work.

556

00:30:16,000 --> 00:30:24,000

The only other thing that I can think of that is a really hard, fast impact on something short of another explosive is a bullet.

557

00:30:24,000 --> 00:30:26,000

So that's what we're gonna do.

558

00:30:26,000 --> 00:30:30,000

We're gonna fire a speeding bullet into burning C4.

559

00:30:30,000 --> 00:30:34,000

Will that high impact be enough to cause an explosion?

560

00:30:34,000 --> 00:30:39,000

The first bullet we'll be firing with is your basic .308 caliber sniper round.

561

00:30:39,000 --> 00:30:44,000

It's a 7.62 NATO and it flies through the air at 2,600 feet per second.

562

00:30:44,000 --> 00:30:52,000

That bullet, at that speed, will give a staggering force on the burning C4 of about 25,000 pounds.

563

00:30:52,000 --> 00:30:54,000

Oh, she's going pretty good.

564

00:30:54,000 --> 00:31:01,000

Alright, I think I'm gonna fire. This is shooting a regular bullet at a flaming ball of C4.

565

00:31:04,000 --> 00:31:05,000

I think he missed.

566

00:31:05,000 --> 00:31:07,000

I missed. Alright, let's try that again.

567

00:31:07,000 --> 00:31:11,000

And with a few words of encouragement from the peanut gallery.

568

00:31:11,000 --> 00:31:14,000

You're nervous about making the shot, are you? Like you might miss, huh?

569

00:31:14,000 --> 00:31:16,000

No. Not at all?

570

00:31:16,000 --> 00:31:17,000

Nope.

571

00:31:17,000 --> 00:31:20,000

Kinda makes you shakey when you're nervous.

572

00:31:20,000 --> 00:31:23,000

Alright, I think I'm ready to go. Safety's off.

573

00:31:23,000 --> 00:31:24,000

Don't miss.

574

00:31:24,000 --> 00:31:29,000

I'm not gonna miss shooting a flaming ball of C4 with a regular old bullet.

575

00:31:32,000 --> 00:31:33,000

Dammit, it looks like I missed it.

576

00:31:33,000 --> 00:31:41,000

With a score at C4-2, Adam Zipp and JN2, gun shy to take a shot, the guys turn to a pro.

577

00:31:41,000 --> 00:31:44,000

I'm an okay shot. Not a great shot. I'm okay.

578

00:31:44,000 --> 00:31:47,000

I missed my first shot, nicked the second.

579

00:31:47,000 --> 00:31:52,000

What we're about to do is hand over responsibility for the shooting in this story to Sergeant Dan Powell,

580

00:31:52,000 --> 00:31:57,000

whose gun this is. Hopefully he'll make the shots much better than we could.

581

00:31:57,000 --> 00:32:00,000

Sergeant Deadshot, Dan nails the target on his first shot.

582

00:32:00,000 --> 00:32:04,000

The burning C4 bounces, but a big boom there ain't.

583

00:32:04,000 --> 00:32:10,000

Well, there you have it. A normal bullet did not cause burning C4 to explode.

584

00:32:10,000 --> 00:32:13,000

The next bullet we'll be firing with is this, a trace around.

585

00:32:13,000 --> 00:32:19,000

It's got a bit of phosphorus in its base that allows the shooter to see the path the bullet takes.

586

00:32:19,000 --> 00:32:22,000

It also flies through the air at 2,600 feet per second.

587

00:32:22,000 --> 00:32:28,000

A bullet striking with a force of 25,000 pounds plus added heat from the burning phosphorus

588

00:32:28,000 --> 00:32:31,000

means it's going to hit hard and hot.

589

00:32:31,000 --> 00:32:33,000

You may fire when ready.

590

00:32:35,000 --> 00:32:39,000

Oh! That was a direct hit. No explosion.

591

00:32:39,000 --> 00:32:43,000

Once again, the bullet impacts the C4, but...

592

00:32:43,000 --> 00:32:45,000

Nothing.

593

00:32:45,000 --> 00:32:48,000

Two bullets down and still no detonation.

594

00:32:48,000 --> 00:32:52,000

The last round we'll be firing is this, an incendiary round.

595

00:32:52,000 --> 00:32:58,000

Inside is magnesium aluminum alloy and barium nitrate, which ignite upon extreme impact.

596

00:32:58,000 --> 00:33:01,000

You see where I'm going with this?

597

00:33:01,000 --> 00:33:03,000

It's down to this shot.

598

00:33:03,000 --> 00:33:10,000

Can the impact of a high explosive bullet finally make the difference to our burning C4 and make it go boom?

599

00:33:10,000 --> 00:33:13,000

Alright, fire it well.

600

00:33:14,000 --> 00:33:17,000

Oh! Nice!

601

00:33:17,000 --> 00:33:20,000

That was beautiful.

602

00:33:20,000 --> 00:33:22,000

Nice shot.

603

00:33:22,000 --> 00:33:24,000

No explosion.

604

00:33:25,000 --> 00:33:28,000

Really? No explosion?

605

00:33:28,000 --> 00:33:30,000

I know what you're saying. You're saying,

606

00:33:30,000 --> 00:33:35,000

wait a minute, Mythbusters, I see the bullet hit flaming C4 and I see what looks like an explosion.

607

00:33:35,000 --> 00:33:39,000

But it's an incendiary round. That's what it's meant to do.

608

00:33:39,000 --> 00:33:46,000

In order not to confuse you, we filmed this high-speed footage of that same type of round hitting a blank metal plate.

609

00:33:49,000 --> 00:33:51,000

I think that makes the point nicely, don't you?

610

00:33:51,000 --> 00:33:53,000

It does.

611

00:33:53,000 --> 00:33:58,000

The explosive round may have exploded, but the blazing C4 did not blow up.

612

00:33:58,000 --> 00:34:01,000

So bullets won't detonate flaming C4?

613

00:34:01,000 --> 00:34:03,000

Nope. We gotta come up with something else.

614

00:34:03,000 --> 00:34:05,000

We do.

615

00:34:09,000 --> 00:34:11,000

Oh!

616

00:34:13,000 --> 00:34:19,000

The Mythbusters have proved their flying guillotine design works, but only against a stationary victim.

617

00:34:19,000 --> 00:34:21,000

Look, heads in the bag.

618

00:34:21,000 --> 00:34:30,000

Now they're taking it to the max by testing it in combat, and that means against an opponent, a scarier, more real-life opponent.

619

00:34:30,000 --> 00:34:31,000

Because this time...

620

00:34:31,000 --> 00:34:38,000

He moves. Just like any other real-life battle scenario, your opponent is going to be moving around to avoid the weapon.

621

00:34:38,000 --> 00:34:43,000

And this guy is no exception. He's got a mobile robotic base that we can control remotely.

622

00:34:43,000 --> 00:34:44,000

Trying to hit me.

623

00:34:44,000 --> 00:34:46,000

Oh, oh!

624

00:34:46,000 --> 00:34:49,000

That's not the only thing we have in store for Tori.

625

00:34:51,000 --> 00:34:53,000

An assassin lurking in the shadows.

626

00:34:54,000 --> 00:34:56,000

This one's actually after him.

627

00:34:56,000 --> 00:35:04,000

So Tori's up against a moving robotic enemy in front, and a sneaky foe who can pop up any moment from behind.

628

00:35:04,000 --> 00:35:06,000

The ultimate real-world test.

629

00:35:06,000 --> 00:35:09,000

Alright, now what do I need to do to beat this obstacle course?

630

00:35:09,000 --> 00:35:12,000

Okay, you have two minutes on the clock to defeat two enemies.

631

00:35:12,000 --> 00:35:16,000

You have to stay behind this line, and your target is going to be moving.

632

00:35:16,000 --> 00:35:18,000

Normally there's no rules in battle, but...

633

00:35:18,000 --> 00:35:19,000

Alright, let's do it.

634

00:35:21,000 --> 00:35:29,000

Ladies and gentlemen, in the Grand Palace of Emperor Yongjing, known in some circles as the M7 Workshop,

635

00:35:29,000 --> 00:35:36,000

we have the famous Kung Fu killer, the master of disaster, Tori Balegi.

636

00:35:36,000 --> 00:35:41,000

And his shadowy evil opponent, the Fajin King.

637

00:35:42,000 --> 00:35:45,000

You ready? Let's do this.

638

00:35:47,000 --> 00:35:50,000

Honor and myth all hang on the next two minutes.

639

00:35:51,000 --> 00:35:57,000

Line guillotine in five, four, three, two, one.

640

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

Right from the outset, the robo-targets proving very elusive.

641

00:36:04,000 --> 00:36:08,000

It's a far cry from the original static assassin test.

642

00:36:08,000 --> 00:36:11,000

Oh my god, this is like some crazy weird nightmare.

643

00:36:12,000 --> 00:36:13,000

And then suddenly...

644

00:36:13,000 --> 00:36:15,000

There's a guy behind you!

645

00:36:15,000 --> 00:36:18,000

There's that sneaky assassin to contend with as well.

646

00:36:18,000 --> 00:36:20,000

But he doesn't last long.

647

00:36:20,000 --> 00:36:21,000

You got him!

648

00:36:21,000 --> 00:36:24,000

He wasn't decapitated, but he was at least disarmed.

649

00:36:24,000 --> 00:36:26,000

Then it's back to the main target.

650

00:36:26,000 --> 00:36:30,000

But before you can say, guillotine, time's up.

651

00:36:30,000 --> 00:36:32,000

Three, two, one.

652

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

Two minutes are up without a single decapitation.

653

00:36:37,000 --> 00:36:39,000

But at least there was one knockout blow.

654

00:36:40,000 --> 00:36:42,000

It's pretty hard hitting a moving target.

655

00:36:42,000 --> 00:36:45,000

It looked hard, but hey, you got the one that popped up.

656

00:36:45,000 --> 00:36:46,000

Your reaction time was great.

657

00:36:46,000 --> 00:36:50,000

Yeah, you definitely knocked out the assassin from the shadows.

658

00:36:51,000 --> 00:36:53,000

That was so much fun.

659

00:36:53,000 --> 00:36:55,000

I mean, this is like living out my fantasies.

660

00:36:55,000 --> 00:36:58,000

Having two attackers coming at me, trying to take him down.

661

00:36:58,000 --> 00:37:01,000

However, trying to hit a moving target, it's almost impossible.

662

00:37:01,000 --> 00:37:05,000

This weapon has proved plausible as an assassination device,

663

00:37:05,000 --> 00:37:08,000

but no match for a foe in pitch battle.

664

00:37:08,000 --> 00:37:12,000

So before we can sign this myth to the dusty vault of history,

665

00:37:12,000 --> 00:37:15,000

let's leave the final word to Grant.

666

00:37:15,000 --> 00:37:18,000

Despite that this guy looks like he's been defeated,

667

00:37:18,000 --> 00:37:21,000

he actually survived, and not only that, he won.

668

00:37:21,000 --> 00:37:26,000

Because it's so difficult to deploy the flying gear team in a combat situation.

669

00:37:26,000 --> 00:37:30,000

Definitely this is plausible as an assassin's weapon,

670

00:37:30,000 --> 00:37:33,000

but in combat, no way.

671

00:37:52,000 --> 00:37:57,000

Adam and Jamie have gone all out testing the two-pronged military myth

672

00:37:57,000 --> 00:38:00,000

that burning seafar to cook with is safe.

673

00:38:00,000 --> 00:38:02,000

It's burning beautifully.

674

00:38:02,000 --> 00:38:04,000

It's not bad, but it's not hot.

675

00:38:04,000 --> 00:38:07,000

So long as you don't bash it while it's alive.

676

00:38:07,000 --> 00:38:11,000

To test that, they've tried dropping heavy objects on it.

677

00:38:11,000 --> 00:38:15,000

They've tried shooting it with high-impact bullets.

678

00:38:15,000 --> 00:38:19,000

Nice shot. No explosion.

679

00:38:19,000 --> 00:38:23,000

But nothing's detonated the burning seafar.

680

00:38:23,000 --> 00:38:27,000

So in a last-ditch attempt to cause it to explode,

681

00:38:27,000 --> 00:38:29,000

they're ramping it up to the max.

682

00:38:29,000 --> 00:38:32,000

Time to mix some thermite.

683

00:38:32,000 --> 00:38:36,000

Thermite, that high-intensity, extreme heat material

684

00:38:36,000 --> 00:38:39,000

that can cause explosive reactions.

685

00:38:39,000 --> 00:38:41,000

Wow!

686

00:38:41,000 --> 00:38:46,000

If anything's going to superheat the molecules in seafar enough to set it off,

687

00:38:46,000 --> 00:38:48,000

then it's thermite.

688

00:38:48,000 --> 00:38:50,000

Thermite is a mixture of two different metal powders.

689

00:38:50,000 --> 00:38:53,000

One is the fuel, the other is the oxidizer.

690

00:38:53,000 --> 00:38:56,000

Usually that would be aluminum and iron oxide.

691

00:38:56,000 --> 00:38:58,000

Now, when they're mixed together and ignited,

692

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

they burn with extremely high temperatures,

693

00:39:01,000 --> 00:39:04,000

about 4,500 degrees Fahrenheit.

694

00:39:04,000 --> 00:39:09,000

They've proved that seafar burning at just over 1,000 degrees won't explode.

695

00:39:09,000 --> 00:39:13,000

But what about at 4,500 degrees?

696

00:39:13,000 --> 00:39:16,000

Here's how our rig is going to theoretically work.

697

00:39:16,000 --> 00:39:20,000

Up on the stand, I've got a massive flowerpot filled with about 3 gallons of thermite.

698

00:39:20,000 --> 00:39:23,000

It will be ignited by a neon transformer, the wires which are right here.

699

00:39:23,000 --> 00:39:27,000

Once ignited, that thermite will start to burn and it will start to drip.

700

00:39:27,000 --> 00:39:28,000

Where, you ask?

701

00:39:28,000 --> 00:39:30,000

Well, through the bottom of this flowerpot, of course.

702

00:39:30,000 --> 00:39:34,000

The molten thermite will drip through the bottom of this flowerpot right onto our seaford.

703

00:39:34,000 --> 00:39:38,000

We, of course, will be waiting safely behind the blast taper panels

704

00:39:38,000 --> 00:39:42,000

to see if the thermite makes the seaford go boom.

705

00:39:43,000 --> 00:39:45,000

See the C4?

706

00:39:45,000 --> 00:39:47,000

There we go.

707

00:39:47,000 --> 00:39:49,000

Don't drop it.

708

00:39:49,000 --> 00:39:51,000

Here we go.

709

00:39:51,000 --> 00:39:56,000

So it'll be thermite burning at a super hot 4,500 degrees,

710

00:39:56,000 --> 00:39:59,000

pouring directly onto the C4 beneath it.

711

00:39:59,000 --> 00:40:01,000

Call it whenever you're ready.

712

00:40:01,000 --> 00:40:07,000

Okay, molten thermite dripping onto C4 in 3, 2, 1, go.

713

00:40:09,000 --> 00:40:11,000

Oh, it's like a beautiful thing.

714

00:40:11,000 --> 00:40:16,000

At 4,500 degrees, thermite burns with blinding intensity.

715

00:40:16,000 --> 00:40:19,000

There it goes, pouring right onto the C4.

716

00:40:19,000 --> 00:40:21,000

It's a perfect hit.

717

00:40:21,000 --> 00:40:24,000

It's just behaving exactly like we wanted.

718

00:40:24,000 --> 00:40:28,000

In spite of the extreme heat, there's no boom.

719

00:40:28,000 --> 00:40:30,000

I can't think of anything else.

720

00:40:30,000 --> 00:40:32,000

It's like you're not setting off C4 by accident.

721

00:40:32,000 --> 00:40:33,000

That's all there is to it.

722

00:40:33,000 --> 00:40:35,000

I think that's all there is to it.

723

00:40:35,000 --> 00:40:37,000

I think we've really done everything we can.

724

00:40:37,000 --> 00:40:39,000

Pretty much.

725

00:40:39,000 --> 00:40:45,000

Even when subjected to 4,500 degrees of pure heat, the C4 keeps its cool.

726

00:40:45,000 --> 00:40:51,000

So after all this testing, what exactly will make C4 go boom?

727

00:40:51,000 --> 00:40:55,000

Well, the explosive in C4 is RDX,

728

00:40:55,000 --> 00:40:59,000

and you need a blasting cap to set off RDX.

729

00:40:59,000 --> 00:41:03,000

The mercury fulminate in a blasting cap moves really fast when it goes off.

730

00:41:03,000 --> 00:41:06,000

It's something like 100,000 feet per second.

731

00:41:06,000 --> 00:41:11,000

That's over Mach 100, which is really, really fast.

732

00:41:11,000 --> 00:41:17,000

And we just can't achieve those kinds of speeds with anything short of a blasting cap.

733

00:41:17,000 --> 00:41:22,000

C4 was designed specifically to be a high explosive that was incredibly stable.

734

00:41:22,000 --> 00:41:23,000

And I got to give it up.

735

00:41:23,000 --> 00:41:26,000

It is more stable than I ever thought possible.

736

00:41:26,000 --> 00:41:32,000

So with the C4's scientific certainty sewn up, there's just one thing left to do.

737

00:41:32,000 --> 00:41:33,000

Shall we call this?

738

00:41:33,000 --> 00:41:34,000

I think it's time.

739

00:41:34,000 --> 00:41:40,000

All right. On the first count that C4 can be ignited and heat your lunch, how do you find?

740

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

I find that confirmed.

741

00:41:41,000 --> 00:41:48,000

On the second count that said, flaming C4 should not be trod upon or dropped upon, how do you find?

742

00:41:48,000 --> 00:41:50,000

I find that busted.

743

00:41:50,000 --> 00:41:54,000

I love it. It's both busted and confirmed at the same time. Let's go back to the shop.

744

00:41:54,000 --> 00:41:56,000

Okay.

745

00:41:56,000 --> 00:42:01,000

You know, in spite of the evidence, I just wouldn't stop on that stop.

746

00:42:01,000 --> 00:42:03,000

Now, that would be right.