

1

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

MUSIC

2

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

MUSIC

3

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

MUSIC

4

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

MUSIC

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

MUSIC

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

MUSIC

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

MUSIC

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

MUSIC

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

MUSIC

10

00:00:36,000 --> 00:00:40,000

MUSIC

11

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

MUSIC

12

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

Sorry about that. These things are a little tricky to fly.

13

00:00:48,000 --> 00:00:52,000

Yeah, well, I swear with a slightly larger one you could do some

14

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

genuine damage. Like maybe even kill somebody. Wait a minute.

15

00:00:56,000 --> 00:01:00,000

T-t-t-t...

16

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

Let's start the show.

17

00:01:04,000 --> 00:01:08,000

MUSIC

18

00:01:08,000 --> 00:01:12,000

MUSIC

19

00:01:12,000 --> 00:01:16,000

MUSIC

20

00:01:16,000 --> 00:01:20,000

MUSIC

21

00:01:20,000 --> 00:01:24,000

MUSIC

22

00:01:24,000 --> 00:01:27,720

I'm guessing this story is about drones.

23

00:01:27,720 --> 00:01:28,720

It is.

24

00:01:28,720 --> 00:01:31,160

In fact, we have two awesome flying stories in this episode.

25

00:01:31,160 --> 00:01:32,960

One of them is about these guys.

26

00:01:32,960 --> 00:01:35,400

But first up, we have a totally amazing story.

27

00:01:35,400 --> 00:01:38,600

Let me ask you, do the words Dragon Lady mean anything to you?

28

00:01:38,600 --> 00:01:40,200

I don't want to talk about it.

29

00:01:40,200 --> 00:01:42,200

OK, I think we're probably thinking of different things.

30

00:01:42,200 --> 00:01:44,400

Because Dragon Lady is, in fact, the nickname

31

00:01:44,400 --> 00:01:47,600

for the legendary high altitude single-seater

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00:01:47,600 --> 00:01:50,760

U2 reconnaissance plane in use by the U2.

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00:01:50,760 --> 00:01:52,760

OK, what about it?

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00:01:52,760 --> 00:01:55,760

Well, there is a myth that the U2 plane is the toughest plane

35

00:01:55,760 --> 00:01:58,760

to fly and to land of any other plane.

36

00:01:58,760 --> 00:02:01,760

I think we should take a close look at that.

37

00:02:01,760 --> 00:02:04,760

The Air Force isn't going to let us get anywhere near something like that.

38

00:02:04,760 --> 00:02:07,760

They want to bring in 4.8348.

39

00:02:07,760 --> 00:02:09,760

They want to bring in 4.8348.

40

00:02:09,760 --> 00:02:11,760

They want to bring in 4.8348.

41

00:02:11,760 --> 00:02:13,760

They want to bring in 4.8348.

42

00:02:13,760 --> 00:02:15,760

They want to bring in 4.8348.

43

00:02:15,760 --> 00:02:17,760

They want to bring in 4.8348.

44

00:02:17,760 --> 00:02:19,760

They want to bring in 4.8348.

45

00:02:20,760 --> 00:02:22,760

I thought the same thing, but amazingly,

46

00:02:22,760 --> 00:02:26,760

they have agreed to let you and I have a close-up first-person look

47

00:02:26,760 --> 00:02:30,760

at their U2 program and see just how tough those planes are to operate.

48

00:02:37,760 --> 00:02:39,760

Cool. What are we waiting for?

49

00:02:39,760 --> 00:02:42,760

I have the slightest idea. Let's do this.

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00:02:42,760 --> 00:02:49,760

The take's off straight up and looks something like a jet-propelled four-poster.

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00:02:49,760 --> 00:02:54,760

The history of aviation is littered with oxymoronic aerodynamics,

52

00:02:54,760 --> 00:02:58,760

finicky flyers and design duds.

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00:03:00,760 --> 00:03:02,760

So, is it possible that one of the most long-lived

54

00:03:02,760 --> 00:03:08,760

and highly valued U.S. Air Force vehicles is also the toughest to fly?

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00:03:08,760 --> 00:03:13,760

To open this investigation, there is only one destination.

56

00:03:13,760 --> 00:03:17,760

30630, stand at 3.3.

57

00:03:17,760 --> 00:03:20,760

10-9-3, theater, 5.5.

58

00:03:20,760 --> 00:03:22,760

25, read by 3.5.

59

00:03:22,760 --> 00:03:24,760

I'm taking 9 and 3, fly heading 25.

60

00:03:24,760 --> 00:03:26,760

0-5, you're clear to fly.

61

00:03:29,760 --> 00:03:33,760

10-9-2, the plane came in at 4.5.

62

00:03:33,760 --> 00:03:35,760

10-9-3.

63

00:03:39,760 --> 00:03:44,760

Well, when you've got questions about the U2 plane, they will get answered here.

64

00:03:44,760 --> 00:03:46,760

I'm standing at the home of the U2 program.

65

00:03:46,760 --> 00:03:48,760

This is where the planes are serviced.

66

00:03:48,760 --> 00:03:52,760

This is where the pilots train before flying to every corner of the globe to do their jobs.

67

00:03:52,760 --> 00:03:58,760

We should totally be able to get to the bottom of this myth here, and we might even get a flight.

68

00:03:59,760 --> 00:04:05,760

To begin to understand just how hard it is to manage this marvel of aviation engineering...

69

00:04:05,760 --> 00:04:10,760

Well, Adam, Jamie, this is the infamous and venerable U2 Dragon Lady.

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00:04:10,760 --> 00:04:19,760

Major Bartholomew, who has more U2 flying hours than any Air Force pilot in history, runs the guys through the specs.

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00:04:19,760 --> 00:04:27,760

The original design dates from the mid-50s. Single engine, high altitude, long wingspan, lots of thrust, lots of lift.

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00:04:27,760 --> 00:04:31,760

We can take a heavy payload up to a great altitude and moiter for a long time.

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00:04:31,760 --> 00:04:36,760

The challenges this aircraft presents its pilots are numerous and significant.

74

00:04:36,760 --> 00:04:38,760

All the fuel is kept in the wing.

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00:04:38,760 --> 00:04:43,760

First up, the plane can't even support its own massive wingspan when it's taking off.

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00:04:43,760 --> 00:04:47,760

When the wing develops lift, the pogo falls away.

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00:04:47,760 --> 00:04:52,760

Next, recon missions can be lengthy and are carried out at very high altitudes,

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00:04:52,760 --> 00:04:57,760

which requires complex pressure suit technologies and extreme safety features.

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00:04:57,760 --> 00:05:01,760

Everything is so thin and so light and just strong enough.

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00:05:01,760 --> 00:05:03,760

And then, there's the landing.

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00:05:03,760 --> 00:05:07,760

It has quite a heavy footprint because there's just the one main gear carrying all the load.

82

00:05:09,760 --> 00:05:15,760

The wheels are along the centerline of the fuselage, so it's like trying to land a bicycle.

83

00:05:15,760 --> 00:05:20,760

When the airplane does tip over, these skids protect the wing tip.

84

00:05:20,760 --> 00:05:25,760

And we'll see later, but on an approach, the pilot can't even see the runway.

85

00:05:26,760 --> 00:05:29,760

He has to be guided down by a pilot in a chase car.

86

00:05:32,760 --> 00:05:35,760

So far, it's looking pretty good for the myth.

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00:05:35,760 --> 00:05:40,760

It's an impressive checklist of piloting challenges, but where next?

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00:05:40,760 --> 00:05:43,760

Well, we need to get a look at this baby in action.

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00:05:43,760 --> 00:05:48,760

To that end, Jamie and I have been given the go-ahead to hitch a ride to the edge of space,

90

00:05:48,760 --> 00:05:52,760

and we will now embark on a week-long training program.

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00:05:52,760 --> 00:05:56,760

Yep, it takes a week just to learn how to be a passenger.

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00:05:56,760 --> 00:06:01,760

The problem is, there is only room for one of us.

93

00:06:04,760 --> 00:06:07,760

Please, please, please let it be me.

94

00:06:11,760 --> 00:06:14,760

So the next story is deadly drones.

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00:06:14,760 --> 00:06:15,760

Indeed it is.

96

00:06:15,760 --> 00:06:19,760

If the press is to be believed, drones are totally in our future delivering our packages

97

00:06:19,760 --> 00:06:25,760

and maybe even our pizzas, but there are those who think that they are a deadly danger hiding in plain sight.

98

00:06:25,760 --> 00:06:31,760

That a simple gust of wind could send a drone into you and the propellers could slice your throat and kill you.

99

00:06:31,760 --> 00:06:34,760

That sounds like it's custom-made for us.

100

00:06:34,760 --> 00:06:36,760

That's exactly what I was thinking. Let's get to testing.

101

00:06:40,760 --> 00:06:42,760

But testing the myth with one.

102

00:06:43,760 --> 00:06:48,760

First up, Adam and Jamie take a tour of the full range of drone technology.

103

00:06:48,760 --> 00:06:50,760

Starting with the SuperSight.

104

00:06:51,760 --> 00:06:55,760

Allow me to introduce our high-tech custom-built camera platform.

105

00:06:55,760 --> 00:06:59,760

It's got eight motors totaling 2,800 watts of power.

106

00:06:59,760 --> 00:07:04,760

It carries a self-stabilized, high-definition, 3-pound camera.

107

00:07:05,760 --> 00:07:06,760

Pretty cool, huh?

108

00:07:10,760 --> 00:07:12,760

And at the other end of the scale...

109

00:07:13,760 --> 00:07:15,760

This is your basic consumer-level multi-rotor.

110

00:07:15,760 --> 00:07:19,760

It's on the small side, but it has all the features that the large ones don't.

111

00:07:19,760 --> 00:07:21,760

Propellers, motors, that...

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00:07:25,760 --> 00:07:29,760

Well, as in any new technology, there can be casualties.

113

00:07:31,760 --> 00:07:35,760

But as per the myth, would one of those casualties ever be human?

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00:07:35,760 --> 00:07:37,760

Could a drone really be deadly?

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00:07:39,760 --> 00:07:42,760

To begin their quest in earnest, it's back to the shop.

116

00:07:42,760 --> 00:07:47,760

Where Adam has two mid-range models, most likely to be used in a commercial delivery.

117

00:07:49,760 --> 00:07:52,760

On the left here is a fly-at right out of the box, small model.

118

00:07:53,760 --> 00:07:58,760

Slightly larger is a intermediate kit-level model, which comes with all the pieces you need to fly.

119

00:07:58,760 --> 00:08:00,760

You just have to assemble them.

120

00:08:00,760 --> 00:08:05,760

This one's apparently ready to fly, so I'm gonna give it a shot to see how easy it actually is.

121

00:08:05,760 --> 00:08:07,760

Oh! Ha ha!

122

00:08:11,760 --> 00:08:13,760

Really easy to fly.

123

00:08:14,760 --> 00:08:20,760

While the damage done so far is enlightening, a proof of concept is required.

124

00:08:21,760 --> 00:08:23,760

Yeah, it dripped juice on me.

125

00:08:24,760 --> 00:08:28,760

To find out if a multi-rotor propeller could ever cause a flesh wound,

126

00:08:28,760 --> 00:08:33,760

Adam and Jamie have a standard-sized blade spinning at flight speed on a stick

127

00:08:33,760 --> 00:08:35,760

and a chicken.

128

00:08:35,760 --> 00:08:40,760

I think today's lesson is gonna be fairly self-explanatory whenever you're ready, sir.

129

00:08:49,760 --> 00:08:51,760

Yeah! There we go!

130

00:08:57,760 --> 00:08:59,760

Yeah! Check that out.

131

00:08:59,760 --> 00:09:02,760

That right there, my friends, that's an injury.

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00:09:03,760 --> 00:09:07,760

But let's face it, we're not just talking about an injury, we're talking about an ethyl-ity.

133

00:09:08,760 --> 00:09:12,760

Which means we're really talking about this vein right here, the jugular. Yeah.

134

00:09:12,760 --> 00:09:20,760

I think if we're gonna continue testing, we need to make a neck as a testing platform that we can run our multi-rotors into.

135

00:09:21,760 --> 00:09:23,760

Coming up on Mythbusters.

136

00:09:23,760 --> 00:09:24,760

Someone give me a Band-Aid.

137

00:09:24,760 --> 00:09:28,760

Adam's up to his neck in the gory story of a deadly drone.

138

00:09:29,760 --> 00:09:30,760

And...

139

00:09:30,760 --> 00:09:32,760

Bail out, bail out, bail out.

140

00:09:32,760 --> 00:09:35,760

The guys prepare for the flight of a lifetime.

141

00:09:35,760 --> 00:09:38,760

Complex and terrifying.

142

00:09:43,760 --> 00:09:46,760

Could a drone delivery ever be deadly?

143

00:09:49,760 --> 00:09:52,760

Adam and Jamie have a promising proof of concept.

144

00:09:53,760 --> 00:09:55,760

Yeah! There we go!

145

00:09:55,760 --> 00:09:57,760

Now, to cut a little deeper.

146

00:09:58,760 --> 00:10:05,760

Now, if we're going to be testing whether one of these can slice through one of these, we're gonna need one of each.

147

00:10:05,760 --> 00:10:09,760

And these are easy to buy at the store, but these, well, they're a little harder to come by.

148

00:10:09,760 --> 00:10:13,760

We're gonna have to make our own. And to do that, I'm gonna use a lot of this.

149

00:10:13,760 --> 00:10:15,760

And this guy right here.

150

00:10:15,760 --> 00:10:19,760

And it's going to spur blood if it actually gets cut.

151

00:10:19,760 --> 00:10:21,760

It's gonna be awesome.

152

00:10:21,760 --> 00:10:27,760

Yep. Adam's manufacturing a mortal mannequin that will react accurately to an impact.

153

00:10:27,760 --> 00:10:32,760

The basic gist of what I'm gonna be doing is casting a neck out of ballistics gelatin.

154

00:10:32,760 --> 00:10:36,760

How tall is this neck? Who were these men?

155

00:10:36,760 --> 00:10:42,760

With holes in it that I can fill with blood that will be blue for televisual purposes.

156

00:10:42,760 --> 00:10:45,760

It needs to be really close to the edge of the skin.

157

00:10:45,760 --> 00:10:51,760

So I'm gonna effectively mold those veins using these brass rods in here.

158

00:10:51,760 --> 00:10:54,760

It's sort of like thinking inside out and backwards.

159

00:10:59,760 --> 00:11:05,760

With the negative mold of the blood vessels in place, it's time to prepare the fake flesh.

160

00:11:05,760 --> 00:11:10,760

As Jamie and I have discovered, this stuff reacts to a bullet similar to human flesh.

161

00:11:10,760 --> 00:11:17,760

But to get the tenacity of skin and muscle, we need to add this fiberglass filler to the ballistics gel

162

00:11:17,760 --> 00:11:19,760

as we're casting it into my mold.

163

00:11:19,760 --> 00:11:22,760

Aw, beauty.

164

00:11:22,760 --> 00:11:26,760

I'm very pleased with how this is going so far, based on nothing.

165

00:11:26,760 --> 00:11:31,760

One set, it's simply a case of easing the fleshy throat free of the mold.

166

00:11:33,760 --> 00:11:35,760

Almost. Come on.

167

00:11:40,760 --> 00:11:47,760

That's it. Alright. Thank you.

168

00:11:47,760 --> 00:11:51,760

Then Adam plums the system with blue blood...

169

00:11:51,760 --> 00:11:52,760

Nice.

170

00:11:52,760 --> 00:11:56,760

...and tests his anatomically accurate jugular.

171

00:11:56,760 --> 00:11:59,760

It's at the right depth beneath the flesh.

172

00:11:59,760 --> 00:12:01,760

That is a bleeding neck.

173

00:12:01,760 --> 00:12:04,760

...and requires the same force to slice.

174

00:12:04,760 --> 00:12:07,760

Alright, could someone give me a bandaid?

175

00:12:07,760 --> 00:12:13,760

Allow me to introduce you to the analog bursting jugular vein multi-rotor testing neck rig.

176

00:12:13,760 --> 00:12:15,760

Yeah, rolls right off the tongue.

177

00:12:15,760 --> 00:12:20,760

It is basically a rig for bleeding when it senses a lethal injury.

178

00:12:20,760 --> 00:12:24,760

Now, I have more than two veins in this rig, even though we have only two in our neck,

179

00:12:24,760 --> 00:12:28,760

because we can test multiple times just by turning the neck.

180

00:12:28,760 --> 00:12:30,760

Yeah, it's like that versatile.

181

00:12:30,760 --> 00:12:36,760

So we can test as much as we want and watch bursting blue blood, blue blood, blue blood.

182

00:12:36,760 --> 00:12:39,760

Blue blood fly out of the veins.

183

00:12:39,760 --> 00:12:41,760

I'm going to stop talking.

184

00:12:43,760 --> 00:12:48,760

But before Adam's blue blood dummy is deployed in the drone firing line,

185

00:12:51,760 --> 00:12:59,760

it's back to Beale Air Force Base to tackle the myth that the U2 is the world's toughest plane to pilot.

186

00:13:01,760 --> 00:13:04,760

Welcome to the HALT Institute Physiology and Full Pressure Suit Orientation.

187

00:13:04,760 --> 00:13:08,760

Adam and Jamie are both in training for an in-flight investigation.

188

00:13:08,760 --> 00:13:11,760

One will fly, one will be on standby.

189

00:13:11,760 --> 00:13:13,760

Pop your helmet off just like that.

190

00:13:13,760 --> 00:13:17,760

And they're starting with several not-so-brief briefings.

191

00:13:17,760 --> 00:13:19,760

We're going to have a suit controller like this.

192

00:13:19,760 --> 00:13:21,760

About the safety equipment.

193

00:13:21,760 --> 00:13:23,760

It acts as a backup pressurization system.

194

00:13:23,760 --> 00:13:25,760

And emergency procedures.

195

00:13:25,760 --> 00:13:28,760

We're going to teach you how to parachute safely to the ground.

196

00:13:28,760 --> 00:13:32,760

These are no minute-long demonstrations from a flight attendant.

197

00:13:33,760 --> 00:13:35,760

Primarily it's to prevent decompression sickness.

198

00:13:35,760 --> 00:13:39,760

And a clear indication of the enormity of the endeavor.

199

00:13:39,760 --> 00:13:41,760

If you lose cabin pressure, the suit would inflate.

200

00:13:41,760 --> 00:13:44,760

If you are in contests, there are inflators inside.

201

00:13:44,760 --> 00:13:46,760

During this time, your visor is going to freeze over.

202

00:13:46,760 --> 00:13:47,760

You will not be able to see.

203

00:13:47,760 --> 00:13:49,760

The plate, so if you have to cut yourself down from something.

204

00:13:49,760 --> 00:13:52,760

Now, we're nowhere near getting into one of these planes yet,

205

00:13:52,760 --> 00:13:57,760

but already we've got all this stuff that we have to know how to deal with.

206

00:13:57,760 --> 00:13:59,760

The good news is you have an ejection seat.

207

00:13:59,760 --> 00:14:03,760

The bad news is you actually have to pull your own ejection handle to get out of the aircraft.

208

00:14:06,760 --> 00:14:11,760

Even something like peeing, it seems like it's kind of a complicated ordeal.

209

00:14:11,760 --> 00:14:16,760

Push down, lock it to the side, and you can begin your slow, controlled urination.

210

00:14:16,760 --> 00:14:23,760

I don't think that I want to be pushing or pulling buttons without really knowing exactly what they do.

211

00:14:25,760 --> 00:14:27,760

So it's going to take a little practice.

212

00:14:28,760 --> 00:14:30,760

So why all of this complex equipment?

213

00:14:30,760 --> 00:14:34,760

Why is the YouTube program the only program besides NASA?

214

00:14:34,760 --> 00:14:36,760

Absolutely unreal.

215

00:14:36,760 --> 00:14:39,760

And the space program that utilizes a full pressure suit?

216

00:14:39,760 --> 00:14:44,760

The primary purpose of wearing this full pressure suit is to prevent hypoxia.

217

00:14:44,760 --> 00:14:48,760

Well, one is of course because it flies higher than any other normal airplane

218

00:14:48,760 --> 00:14:52,760

into what they call the space equivalent zone above 50,000 feet.

219

00:14:52,760 --> 00:14:55,760

But more primarily is what happens to us when we go to that height.

220

00:14:55,760 --> 00:15:01,760

Our bodies have evolved to process oxygen properly from sea level to 10,000 feet.

221

00:15:06,760 --> 00:15:11,760

When we go above that, we cease being able to functionally take in oxygen.

222

00:15:11,760 --> 00:15:16,760

Put up the switches, we will die. Put up the switches, come on.

223

00:15:20,760 --> 00:15:27,760

Therefore, the suit and the cabin of the plane have to artificially induce the conditions of atmospheric pressure

224

00:15:27,760 --> 00:15:29,760

in order so that the pilots stay alive.

225

00:15:29,760 --> 00:15:33,760

That is a significant amount of technology to solve that one problem.

226

00:15:33,760 --> 00:15:35,760

Let's pull down on the red lanyard.

227

00:15:35,760 --> 00:15:37,760

It tends to be a whack in the face.

228

00:15:37,760 --> 00:15:39,760

It releases a hook on the inside of your harness.

229

00:15:39,760 --> 00:15:43,760

After a full day of intense information acquisition,

230

00:15:43,760 --> 00:15:46,760

day three dawns and our raw recruits,

231

00:15:46,760 --> 00:15:48,760

Time to start training,

232

00:15:48,760 --> 00:15:50,760

are getting physical.

233

00:15:50,760 --> 00:15:52,760

Want to see the coolest part?

234

00:15:52,760 --> 00:15:54,760

Look at that.

235

00:15:54,760 --> 00:15:58,760

With a crash course in what to do if the plane crashes.

236

00:15:58,760 --> 00:16:01,760

That's three weeks of Army Airborne Pairing and Pursuing training right there.

237

00:16:01,760 --> 00:16:02,760

That's all you do.

238

00:16:06,760 --> 00:16:07,760

This is pretty cool.

239

00:16:07,760 --> 00:16:11,760

We've just gotten walked through all of the different contingencies that could happen

240

00:16:11,760 --> 00:16:14,760

if we have to bail out of the plane at altitude.

241

00:16:14,760 --> 00:16:16,760

This is very cool.

242

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

What happens when the parachute lands? How to land?

243

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

It's easy to land like so?

244

00:16:21,760 --> 00:16:22,760

Gonna break one of them.

245

00:16:22,760 --> 00:16:23,760

Something's broken.

246

00:16:23,760 --> 00:16:24,760

Fascinating.

247

00:16:24,760 --> 00:16:25,760

And most specifically,

248

00:16:25,760 --> 00:16:27,760

There we are.

249

00:16:27,760 --> 00:16:32,760

I just learned how to actually lower myself if I end up landing in a tree

250

00:16:32,760 --> 00:16:35,760

and I'm like hanging above the ground.

251

00:16:38,760 --> 00:16:39,760

There we go.

252

00:16:39,760 --> 00:16:42,760

And then lowering myself safely down to the ground.

253

00:16:42,760 --> 00:16:44,760

Lower myself down.

254

00:16:45,760 --> 00:16:46,760

Very nice.

255

00:16:46,760 --> 00:16:52,760

All of this is stuff that I hope I only ever have to try here in the safety of this room.

256

00:16:54,760 --> 00:16:56,760

It's been a long and exhausting day.

257

00:16:56,760 --> 00:16:58,760

Bail out, bail out, bail out.

258

00:16:58,760 --> 00:17:06,760

And the sheer scale of the task, technology and expertise required to fly at the edge of space

259

00:17:06,760 --> 00:17:08,760

could not be more apparent.

260

00:17:08,760 --> 00:17:13,760

Two words come to mind during all this complex and terrifying.

261

00:17:21,760 --> 00:17:23,760

Three days of information overload.

262

00:17:23,760 --> 00:17:27,760

The ejection seat we have was also used in the first four flights of the Spatial of Columbia.

263

00:17:27,760 --> 00:17:31,760

And the rigors of flying the Dragon Lady are evident.

264

00:17:31,760 --> 00:17:34,760

But is it the hardest plane to pilot?

265

00:17:34,760 --> 00:17:39,760

To find out, the mythbusters are being prepped to fly to the edge of space.

266

00:17:39,760 --> 00:17:41,760

Is it like my space, Jamie?

267

00:17:41,760 --> 00:17:43,760

And despite the high spirits.

268

00:17:46,760 --> 00:17:47,760

All right, sir, can you hear me?

269

00:17:47,760 --> 00:17:49,760

Yep, I kind of feel like dancing.

270

00:17:50,760 --> 00:17:52,760

The pressure is on, literally.

271

00:17:52,760 --> 00:17:54,760

All right, any other questions you?

272

00:17:54,760 --> 00:17:59,760

Jamie and Adam have one final stage of training to be passed as fit to fly.

273

00:18:00,760 --> 00:18:01,760

Hello.

274

00:18:01,760 --> 00:18:02,760

You doing okay?

275

00:18:02,760 --> 00:18:03,760

That's a different.

276

00:18:05,760 --> 00:18:07,760

In fact, that doesn't feel very good.

277

00:18:10,760 --> 00:18:11,760

Ow.

278

00:18:11,760 --> 00:18:12,760

Can I bring you back down?

279

00:18:15,760 --> 00:18:18,760

I could see somebody feeling like panicking.

280

00:18:19,760 --> 00:18:22,760

It's just, that's a lot of stuff to process.

281

00:18:23,760 --> 00:18:29,760

They each have a full systems check in the pressure suit, followed by a high altitude emergency simulation.

282

00:18:29,760 --> 00:18:35,760

Right now, Jamie is getting fitted into this high altitude pressure chamber.

283

00:18:35,760 --> 00:18:37,760

Right and left gloves are integrated in lock?

284

00:18:37,760 --> 00:18:44,760

It will replicate the lack of pressures that he might experience under different circumstances in that very suit.

285

00:18:44,760 --> 00:18:49,760

The environment inside the chamber will simulate the flight plan of a U-2.

286

00:18:49,760 --> 00:18:52,760

So Jamie, what we're going to do now is bring the chamber up to 5,000 feet.

287

00:18:52,760 --> 00:18:55,760

Check the ears and sinuses and make sure they're clear and okay.

288

00:18:55,760 --> 00:18:58,760

If the cabin pressure of the U-2 was to fail.

289

00:18:58,760 --> 00:19:00,760

How are you feeling right now?

290

00:19:02,760 --> 00:19:06,760

Jamie needs to prove he can operate the suit and emergency systems.

291

00:19:07,760 --> 00:19:10,760

Right now we're just doing a slow stand-up to 5,000.

292

00:19:11,760 --> 00:19:16,760

As they approach cruising altitude, there's a startling reminder of the dangers involved.

293

00:19:18,760 --> 00:19:19,760

There we go.

294

00:19:19,760 --> 00:19:23,760

A beaker of water at body temperature begins to boil.

295

00:19:24,760 --> 00:19:29,760

If Jamie's suit were to fail, that's what the liquids in his body would do.

296

00:19:30,760 --> 00:19:32,760

Alright, let's go ahead and try to reach that ejection handle.

297

00:19:33,760 --> 00:19:38,760

With that thought in mind and at maximum altitude, Jamie has a few tasks to complete.

298

00:19:39,760 --> 00:19:42,760

Down by your right buttocks there, that's the scramble handle.

299

00:19:42,760 --> 00:19:44,760

Pull it up towards your chin just a little bit.

300

00:19:44,760 --> 00:19:45,760

That's good.

301

00:19:46,760 --> 00:19:51,760

The final being the suit's automated response to a sudden cabin pressure failure.

302

00:19:51,760 --> 00:19:54,760

Three, two, one.

303

00:19:55,760 --> 00:19:57,760

And go ahead and pull that helmet hold down.

304

00:19:59,760 --> 00:20:03,760

That was something else. It's kind of scary actually.

305

00:20:03,760 --> 00:20:04,760

One.

306

00:20:05,760 --> 00:20:11,760

There's a lot of force and when they decompress rapidly, it's just like, whoa.

307

00:20:13,760 --> 00:20:15,760

You're sort of feeling like popcorn.

308

00:20:16,760 --> 00:20:21,760

While Jamie clearly didn't enjoy the experience, he did pass muster.

309

00:20:25,760 --> 00:20:26,760

Awesome.

310

00:20:26,760 --> 00:20:28,760

Cue fanboy savage.

311

00:20:28,760 --> 00:20:30,760

Oh, the gloves.

312

00:20:31,760 --> 00:20:35,760

The coolest thing about this is I'm not just wearing a suit.

313

00:20:35,760 --> 00:20:37,760

I'm not even wearing a machine.

314

00:20:37,760 --> 00:20:38,760

Wow.

315

00:20:39,760 --> 00:20:41,760

Oh man, that's far out.

316

00:20:41,760 --> 00:20:42,760

Woo.

317

00:20:42,760 --> 00:20:48,760

I'm wearing the apex of decades of tens of thousands of people problem solving how to

318

00:20:48,760 --> 00:20:53,760

survive in hostile conditions and I can feel that technology.

319

00:20:53,760 --> 00:20:54,760

Whoa.

320

00:20:54,760 --> 00:20:56,760

Ha ha ha ha.

321

00:20:56,760 --> 00:21:01,760

I can feel how reliable they've made things to touch and to understand with your hands.

322

00:21:01,760 --> 00:21:05,760

All of this born by hard experience, lots of people gave their lives so they could

323

00:21:05,760 --> 00:21:06,760

protect these pilots.

324

00:21:06,760 --> 00:21:07,760

Are you good to go?

325

00:21:07,760 --> 00:21:08,760

I am good to go.

326

00:21:08,760 --> 00:21:12,760

Honestly, everything about this kind of astounds me that people do this every single day.

327

00:21:12,760 --> 00:21:15,760

Starting from the 5,000, eat it 5,000, keep from it.

328

00:21:15,760 --> 00:21:18,760

It takes a team of people to put me in this suit correctly.

329

00:21:18,760 --> 00:21:19,760

How's your comfort level?

330

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

Well, I'm far enough to storm.

331

00:21:21,760 --> 00:21:26,240

But more than that, one time I was under the simulated, you know, the

332

00:21:26,240 --> 00:21:31,240

where the suit would inflate, it gets incredibly tiring.

333

00:21:31,240 --> 00:21:34,240

Locate the ejection handle in between your legs.

334

00:21:34,240 --> 00:21:35,240

There you go.

335

00:21:35,240 --> 00:21:36,240

So your fingers around it.

336

00:21:36,240 --> 00:21:37,240

Yeah, there we go.

337

00:21:37,240 --> 00:21:38,240

Okay.

338

00:21:38,240 --> 00:21:42,240

These guys have to be an incredible shape because I was just sitting in a chair being

339

00:21:42,240 --> 00:21:43,240

tested.

340

00:21:43,240 --> 00:21:45,240

These guys are actually potentially the best.

341

00:21:45,240 --> 00:21:48,240

I'm not sure if you can see it, but I'm not sure.

342

00:21:48,240 --> 00:21:49,240

I'm not sure.

343

00:21:49,240 --> 00:21:50,240

I'm not sure.

344

00:21:50,240 --> 00:21:51,240

I'm not sure.

345

00:21:51,240 --> 00:21:52,240

I'm not sure.

346

00:21:52,240 --> 00:21:53,240

I'm not sure.

347

00:21:53,240 --> 00:21:54,240

I'm not sure.

348

00:21:54,240 --> 00:21:55,240

I'm not sure.

349

00:21:55,240 --> 00:21:56,240

I'm not sure.

350

00:21:56,240 --> 00:21:57,240

I'm not sure.

351

00:21:57,240 --> 00:21:58,240

I'm not sure.

352

00:21:58,240 --> 00:21:59,240

Okay.

353

00:21:59,240 --> 00:22:02,240

So my first question is, is there a plane that chair being tested?

354

00:22:02,240 --> 00:22:05,240

These guys are actually potentially flying planes under these conditions.

355

00:22:05,240 --> 00:22:08,240

Three, two, one.

356

00:22:08,240 --> 00:22:10,240

Go ahead and pull that green lanyard.

357

00:22:10,240 --> 00:22:11,240

Use the mirror.

358

00:22:11,240 --> 00:22:14,240

So our training is done, and we are ready to fly.

359

00:22:14,240 --> 00:22:15,240

Excellent.

360

00:22:15,240 --> 00:22:16,240

Welcome.

361

00:22:16,240 --> 00:22:17,240

Welcome, everyone.

362

00:22:17,240 --> 00:22:21,240

Remember, we went through all of that just to be passengers on the U-2.

363

00:22:21,240 --> 00:22:23,840

And two, we got to let these professionals figure out

364

00:22:23,840 --> 00:22:26,040

the logistics of their flight plan.

365

00:22:26,040 --> 00:22:28,080

Just a little bit of waiting.

366

00:22:28,080 --> 00:22:30,880

While Adam and Janey wait for flight clearance,

367

00:22:30,880 --> 00:22:33,560

the guys decamp to the perfect location

368

00:22:33,560 --> 00:22:36,200

for wind-protected precision flying.

369

00:22:36,200 --> 00:22:38,080

We are testing the myth that multi-rotors

370

00:22:38,080 --> 00:22:39,400

can possibly be lethal.

371

00:22:39,400 --> 00:22:41,080

So this is our multi-rotor.

372

00:22:41,080 --> 00:22:43,720

This is our multi-rotor pilot, James Franklin Heineman.

373

00:22:43,720 --> 00:22:46,760

And this is our potential victim with veins filled

374

00:22:46,760 --> 00:22:47,640

with blue blood.

375

00:22:47,640 --> 00:22:50,560

Clearly a Vulcan who we're going to steer

376

00:22:50,560 --> 00:22:51,920

this thing right into.

377

00:22:51,920 --> 00:22:52,840

You ready to fly?

378

00:22:52,840 --> 00:22:53,320

Sure.

379

00:22:56,920 --> 00:22:58,000

OK, here we go.

380

00:22:58,000 --> 00:22:58,480

All right.

381

00:23:01,880 --> 00:23:03,960

For this first test, we're going to get our little copter

382

00:23:03,960 --> 00:23:05,560

up about this high.

383

00:23:05,560 --> 00:23:08,320

I wouldn't want this thing flying at me.

384

00:23:08,320 --> 00:23:11,440

Sounds like a swarm of angry bees.

385

00:23:11,440 --> 00:23:14,600

And then drag it right into the neck of our dummy.

386

00:23:14,600 --> 00:23:16,760

And we'll see what happens at that speed

387

00:23:16,760 --> 00:23:17,960

with those propellers.

388

00:23:21,520 --> 00:23:22,520

Oh!

389

00:23:22,520 --> 00:23:25,520

That was a perfect hit.

390

00:23:25,520 --> 00:23:27,520

And it was going pretty quick.

391

00:23:30,520 --> 00:23:34,120

It doesn't seem to me that anything at all happened to the neck.

392

00:23:34,120 --> 00:23:36,560

Take a look at the high-speed footage of the multi-rotor

393

00:23:36,560 --> 00:23:37,320

hitting the neck.

394

00:23:37,320 --> 00:23:40,560

You can see the props bending right out of the way,

395

00:23:40,560 --> 00:23:44,320

even in the face of something as soft as neck flesh.

396

00:23:44,320 --> 00:23:45,200

Yeah.

397

00:23:45,200 --> 00:23:47,720

Clearly they were designed to do that.

398

00:23:48,720 --> 00:23:53,080

Yep, the fly it out of the box quadcopter didn't make a dent.

399

00:23:53,080 --> 00:23:56,280

But next up, the kit model.

400

00:23:56,280 --> 00:23:59,280

That was much scarier.

401

00:23:59,280 --> 00:24:01,840

More likely to be used for large deliveries,

402

00:24:01,840 --> 00:24:05,120

it's heavier, has more power, six rotors,

403

00:24:05,120 --> 00:24:07,160

and sturdier propellers.

404

00:24:07,160 --> 00:24:08,960

Let's see what it can do.

405

00:24:08,960 --> 00:24:10,840

Oh!

406

00:24:10,840 --> 00:24:12,040

What?

407

00:24:12,040 --> 00:24:13,800

That's no good.

408

00:24:13,800 --> 00:24:15,600

Take two?

409

00:24:15,600 --> 00:24:17,760

It's going right for me.

410

00:24:17,760 --> 00:24:18,760

Oh!

411

00:24:18,760 --> 00:24:19,760

Oh!

412

00:24:19,760 --> 00:24:20,760

Oh!

413

00:24:24,760 --> 00:24:26,320

Sorry about that.

414

00:24:26,320 --> 00:24:29,600

I'd rather not experiment on each other.

415

00:24:29,600 --> 00:24:33,160

The larger model is proving trickier to handle.

416

00:24:33,160 --> 00:24:34,320

Oh!

417

00:24:34,320 --> 00:24:37,320

But eventually, Jamie gets it going where he wants it.

418

00:24:37,320 --> 00:24:41,320

Yeah, yeah, yeah, yeah, yeah, yeah!

419

00:24:41,320 --> 00:24:43,440

Nice!

420

00:24:43,440 --> 00:24:46,680

Well, bigger multi-rotor, bigger propellers,

421

00:24:46,680 --> 00:24:50,040

nice fat hit right here in the vein.

422

00:24:50,040 --> 00:24:51,040

Nothing.

423

00:24:51,040 --> 00:24:53,440

No penetration.

424

00:24:53,440 --> 00:24:56,320

I just say that aside from being amazing pieces of technology,

425

00:24:56,320 --> 00:24:59,040

these multi-rotors are genuinely spooky to be around.

426

00:24:59,040 --> 00:25:01,800

One, they sound like a hive of angry bees.

427

00:25:01,800 --> 00:25:02,880

Oh!

428

00:25:02,880 --> 00:25:06,400

Two, I am genuinely physically afraid of them hitting me.

429

00:25:06,400 --> 00:25:09,000

But apparently that fear is without any reason,

430

00:25:09,000 --> 00:25:10,880

because we've been smacking them into our necks

431

00:25:10,880 --> 00:25:13,600

without any injury whatsoever.

432

00:25:13,600 --> 00:25:15,160

So where does that leave us?

433

00:25:15,160 --> 00:25:17,680

Come on, with the mythbusters.

434

00:25:17,680 --> 00:25:20,880

We're going to sling our camera platform into it.

435

00:25:20,880 --> 00:25:24,560

This has eight rotors, weighs 16 pounds,

436

00:25:24,560 --> 00:25:27,480

and the propellers are not made of plastic

437

00:25:27,480 --> 00:25:28,400

that bends out of the way.

438

00:25:28,400 --> 00:25:32,040

No, they're made of carbon fiber.

439

00:25:32,040 --> 00:25:34,320

I'm genuinely scared about what this

440

00:25:34,320 --> 00:25:36,720

is going to do to this neck.

441

00:25:36,720 --> 00:25:37,720

Scared and hopeful.

442

00:25:41,840 --> 00:25:45,680

The myth that one of these can cause a lethal injury

443

00:25:45,680 --> 00:25:48,600

is looking suspect.

444

00:25:48,600 --> 00:25:50,480

He's totally fine.

445

00:25:50,480 --> 00:25:57,040

But the team is dumping the two realistic mid-range models

446

00:25:57,040 --> 00:26:00,840

and going for broke with the mythbusters' own custom-made

447

00:26:00,840 --> 00:26:03,200

camera-carrying behemoth.

448

00:26:03,200 --> 00:26:05,920

I thought the other two multi-rotors were staring.

449

00:26:05,920 --> 00:26:08,720

Cue the team's expert pilot, Duncan.

450

00:26:08,760 --> 00:26:12,640

And this myth's final chance for Gory Bloor.

451

00:26:12,640 --> 00:26:14,000

I was wrong.

452

00:26:14,000 --> 00:26:16,040

That thing is terrifying.

453

00:26:16,040 --> 00:26:18,280

This large multi-rotor is a different beast

454

00:26:18,280 --> 00:26:20,480

than what we've been handling earlier.

455

00:26:20,480 --> 00:26:22,360

All right, shall we do this?

456

00:26:22,360 --> 00:26:23,480

You ready?

457

00:26:23,480 --> 00:26:24,480

Ready.

458

00:26:24,480 --> 00:26:26,800

It's much bigger and heavier.

459

00:26:26,800 --> 00:26:29,400

Once it starts to move into the neck,

460

00:26:29,400 --> 00:26:34,080

it doesn't want to just bounce off, because it's so heavy.

461

00:26:34,080 --> 00:26:37,680

So I think this is going to actually do something to our neck,

462

00:26:37,720 --> 00:26:38,720

something bad.

463

00:26:46,200 --> 00:26:47,200

Yes!

464

00:26:49,200 --> 00:26:50,880

Look at that!

465

00:26:50,880 --> 00:26:51,880

It's bleeding.

466

00:26:51,880 --> 00:26:54,560

That's bad.

467

00:26:54,560 --> 00:26:55,060

Dude!

468

00:26:58,840 --> 00:26:59,340

Yes!

469

00:27:04,160 --> 00:27:05,600

There you have it, kids.

470

00:27:05,600 --> 00:27:08,880

It's all fun and games until someone loses an eye or a vein.

471

00:27:14,080 --> 00:27:16,680

You put your finger there, you'll be fine.

472

00:27:16,680 --> 00:27:17,680

I'm not sure.

473

00:27:20,000 --> 00:27:21,960

So what have we proven after all this mayhem?

474

00:27:21,960 --> 00:27:24,520

I think we've actually proven two different things.

475

00:27:24,520 --> 00:27:27,960

On one hand, the smaller multi-rotors you can buy at the store

476

00:27:27,960 --> 00:27:30,640

are pretty darn safe, and they're designed to be that way.

477

00:27:30,640 --> 00:27:33,120

But this is a new hobby, and there are lots of people

478

00:27:33,120 --> 00:27:35,200

building larger and larger multi-rotors

479

00:27:35,200 --> 00:27:36,960

to handle bigger and bigger payloads.

480

00:27:36,960 --> 00:27:39,160

And when those multi-rotors get bigger,

481

00:27:39,160 --> 00:27:42,120

the dangers they present are absolutely real.

482

00:27:42,120 --> 00:27:44,160

I know we've been looking at a worst case scenario,

483

00:27:44,160 --> 00:27:46,880

but I think we've got to call this thing plausible.

484

00:27:46,880 --> 00:27:47,720

You agree?

485

00:27:47,720 --> 00:27:48,440

I agree.

486

00:27:48,440 --> 00:27:50,760

You know, as a general rule, I always

487

00:27:50,760 --> 00:27:54,480

try not to put my neck near large, heavy, fast-moving objects

488

00:27:54,480 --> 00:27:55,880

with spinning blades on them.

489

00:27:55,880 --> 00:27:57,680

I think that's a good general rule.

490

00:27:57,680 --> 00:27:58,800

Let's get out of here.

491

00:28:03,120 --> 00:28:08,120

4, 3, let it down a little bit more.

492

00:28:08,120 --> 00:28:12,120

Back at Beale, the guys are ready to carry out the final test

493

00:28:12,120 --> 00:28:14,600

on the mythically difficult to fly U2.

494

00:28:17,600 --> 00:28:20,720

But only one of them gets to go.

495

00:28:20,720 --> 00:28:24,520

Well, you know, for crying out loud,

496

00:28:24,520 --> 00:28:26,720

you're fanatic about this stuff.

497

00:28:26,720 --> 00:28:27,920

You collect these things.

498

00:28:27,920 --> 00:28:28,800

Yeah, I do.

499

00:28:28,800 --> 00:28:31,520

So I can't end up in a bad place.

500

00:28:31,520 --> 00:28:32,020

I do.

501

00:28:32,020 --> 00:28:35,560

So I can't, in good conscience, deny you

502

00:28:35,560 --> 00:28:38,640

the pleasure of doing something like that.

503

00:28:38,640 --> 00:28:40,400

I really appreciate that, sir.

504

00:28:40,400 --> 00:28:41,240

Thank you very much.

505

00:28:41,240 --> 00:28:41,800

You owe me one.

506

00:28:41,800 --> 00:28:43,840

Oh, I totally owe you one.

507

00:28:43,840 --> 00:28:44,600

Absolutely.

508

00:28:48,160 --> 00:28:50,560

Jamie, the gentleman steps down.

509

00:28:50,560 --> 00:28:53,400

A very happy Adam steps up.

510

00:28:53,400 --> 00:28:54,760

I'm pretty excited.

511

00:28:54,760 --> 00:28:56,560

Can you tell?

512

00:28:56,560 --> 00:29:00,320

For the defining not quite hands-on test.

513

00:29:00,320 --> 00:29:03,160

Now it's go time to figure out just how hard this plane will

514

00:29:03,160 --> 00:29:03,800

be to fly.

515

00:29:03,800 --> 00:29:04,880

I won't be flying it.

516

00:29:04,880 --> 00:29:05,360

No, no, no.

517

00:29:05,360 --> 00:29:06,920

I'll just be helping to assess that.

518

00:29:25,800 --> 00:29:28,600

It is an unbelievable day here in Northern California.

519

00:29:28,600 --> 00:29:30,600

There is barely a cloud in the sky.

520

00:29:30,600 --> 00:29:33,440

It's incredibly clear.

521

00:29:33,440 --> 00:29:35,040

It is a perfect day for flying.

522

00:29:59,560 --> 00:30:02,320

So Adam, the engine's starting to spool up.

523

00:30:02,320 --> 00:30:03,320

Oh, yeah.

524

00:30:03,320 --> 00:30:05,480

Once that's happened, and we have sufficient RPM,

525

00:30:05,480 --> 00:30:07,600

I'll add a little bit of jet fuel here.

526

00:30:10,600 --> 00:30:13,600

OK, here we go, folks.

527

00:30:13,600 --> 00:30:15,600

Adam's got to be freaking out about now.

528

00:30:15,600 --> 00:30:16,600

I don't know if I can hear you.

529

00:30:23,600 --> 00:30:24,600

All right, Adam, at this point, you

530

00:30:24,600 --> 00:30:26,400

need to make sure that the boost lever is

531

00:30:26,400 --> 00:30:29,200

aft and your key block there under your left rib cage

532

00:30:29,200 --> 00:30:30,400

is one notch open.

533

00:30:30,400 --> 00:30:34,400

Yes, it is currently one notch open.

534

00:30:34,400 --> 00:30:36,400

The boost lever is still aft.

535

00:30:36,400 --> 00:30:37,400

Here's where we are.

536

00:30:37,400 --> 00:30:38,400

I'll tell you one thing.

537

00:30:38,400 --> 00:30:42,400

This plane is such a unique and problematic thing to fly,

538

00:30:42,400 --> 00:30:46,400

that it requires a lot of people to make sure it's all perfect

539

00:30:46,400 --> 00:30:48,400

before it takes off.

540

00:30:48,400 --> 00:30:50,400

All right, the Pogo crew has pulled the pins,

541

00:30:50,400 --> 00:30:52,400

so the Pogos will fall away as we take off.

542

00:30:52,400 --> 00:30:53,400

We're flying Q5.

543

00:30:53,400 --> 00:30:55,400

You don't have to clear your flight.

544

00:30:55,400 --> 00:30:57,400

All the checklists have been checked.

545

00:30:57,400 --> 00:31:00,400

We are just seconds away from taking off.

546

00:31:03,400 --> 00:31:04,400

All right, here we go.

547

00:31:04,400 --> 00:31:07,400

Brake release, full power.

548

00:31:07,400 --> 00:31:09,400

Here we go.

549

00:31:09,400 --> 00:31:10,400

Here we go.

550

00:31:10,400 --> 00:31:12,400

We are taking off.

551

00:31:12,400 --> 00:31:14,400

Oh, man.

552

00:31:14,400 --> 00:31:16,400

That is a lot of horsepower.

553

00:31:16,400 --> 00:31:17,400

That's a wow.

554

00:31:17,400 --> 00:31:19,400

We're already lifting.

555

00:31:19,400 --> 00:31:21,400

That's crazy.

556

00:31:21,400 --> 00:31:23,400

Wow.

557

00:31:25,400 --> 00:31:27,400

Man, that's deep.

558

00:31:27,400 --> 00:31:28,400

Wow.

559

00:31:28,400 --> 00:31:30,400

We are already lifting.

560

00:31:30,400 --> 00:31:32,400

We're back yard to the right.

561

00:31:33,400 --> 00:31:39,400

This is part of a takeoff that keeps the U2 above the base

562

00:31:39,400 --> 00:31:42,400

for sort of spiraling straight up.

563

00:31:47,400 --> 00:31:49,400

Here we go.

564

00:31:50,400 --> 00:31:52,400

That was so fast.

565

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

We're turning on a dime as we spiral up into the air,

566

00:32:05,400 --> 00:32:07,400

climbing very rapidly.

567

00:32:09,400 --> 00:32:13,400

After a tricky takeoff and rapid initial ascent.

568

00:32:14,400 --> 00:32:17,400

Oh, my God, the view is beautiful.

569

00:32:17,400 --> 00:32:22,400

Major Bartholomew and Adam get a chance to sit back and relax.

570

00:32:22,400 --> 00:32:25,400

Right now we just passed the top of Monteverst.

571

00:32:25,400 --> 00:32:28,400

Until they attain cruising altitude.

572

00:32:28,400 --> 00:32:34,400

We're transitioning now from 160 knots and climb to a .715 Mach cruise.

573

00:32:34,400 --> 00:32:37,400

Three quarters of speed of sound.

574

00:32:40,400 --> 00:32:44,400

This is officially the highest up the ground I have ever been.

575

00:32:44,400 --> 00:32:51,400

We're coming up on 60,000 feet, 12 miles above the surface of the Earth.

576

00:32:51,400 --> 00:32:55,400

The sky has gotten to be a very, very dark blue.

577

00:32:55,400 --> 00:32:58,400

What an unbelievably beautiful day.

578

00:33:00,400 --> 00:33:05,400

And from this height, 67,500 feet,

579

00:33:05,400 --> 00:33:10,400

the edge of our planet has a definitive curve to it.

580

00:33:10,400 --> 00:33:15,400

It is more three-dimensional than I have ever seen it.

581

00:33:17,400 --> 00:33:18,400

There we are.

582

00:33:19,400 --> 00:33:21,400

It is in gentlemen 70,000 feet.

583

00:33:26,400 --> 00:33:30,400

At this point, aside from the six astronauts on the space station,

584

00:33:30,400 --> 00:33:34,400

we are the two highest humans off of planet Earth.

585

00:33:35,400 --> 00:33:40,400

More than double the height of a standard commercial airliner.

586

00:33:43,400 --> 00:33:46,400

Oh, and did I mention I'm wearing a pressurized space suit?

587

00:33:46,400 --> 00:33:49,400

Yeah, strapped to a rocket.

588

00:33:49,400 --> 00:33:52,400

This is not a bad way to spend your day.

589

00:33:56,400 --> 00:33:59,400

Jamie, I totally owe you one.

590

00:34:00,400 --> 00:34:06,400

The complex, exhaustive preparations and taxing takeoff seem a world away.

591

00:34:06,400 --> 00:34:12,400

Oh, look at that. Wow. That is San Francisco. That's my home.

592

00:34:12,400 --> 00:34:15,400

But this is exactly what the U-2 is designed to do.

593

00:34:15,400 --> 00:34:19,400

Spend hours up here looking down, gathering intelligence.

594

00:34:19,400 --> 00:34:25,400

The view from a commercial airliner is beautiful. This one is transcendent.

595

00:34:25,400 --> 00:34:30,400

It's the maneuvers at either end of proceedings where the pilots are in the big bucks.

596

00:34:30,400 --> 00:34:33,400

The challenges in landing this plane are unique.

597

00:34:33,400 --> 00:34:37,400

And Adam is about to get a real close look.

598

00:34:38,400 --> 00:34:41,400

We'll be back with our landing after this commercial break.

599

00:34:45,400 --> 00:34:47,400

Hey, Space Boy, how are you doing up there?

600

00:34:47,400 --> 00:34:52,400

I'm doing pretty good, Jamie. The view up here is absolutely astonishing.

601

00:34:52,400 --> 00:34:58,400

Looking up makes you realize that you've left the bulk of the Earth's atmosphere.

602

00:34:58,400 --> 00:35:00,400

That's why it's dark.

603

00:35:00,400 --> 00:35:08,400

You're looking down at this fragile mist that surrounds our globe that allows us to breathe.

604

00:35:08,400 --> 00:35:16,400

What allows me to do so is the ingenuity of thousands and thousands of hard-working men and women

605

00:35:16,400 --> 00:35:23,400

who have sought to harness the raw materials that we dig out of the ground

606

00:35:23,400 --> 00:35:27,400

into things as astonishing as airplanes and pressure suits.

607

00:35:30,400 --> 00:35:32,400

A privilege.

608

00:35:38,400 --> 00:35:41,400

Oh, man. That is a lot of horsepower.

609

00:35:41,400 --> 00:35:45,400

Wow, we're already lifting. That's crazy.

610

00:35:45,400 --> 00:35:48,400

Whoa! Wow!

611

00:35:51,400 --> 00:35:54,400

Oh, my God, the view is beautiful.

612

00:36:01,400 --> 00:36:03,400

Wow, look at that.

613

00:36:04,400 --> 00:36:10,400

There's no doubt the high-altitude U2 is a beautiful piece of aviation technology.

614

00:36:11,400 --> 00:36:13,400

Captained to Apple Pie.

615

00:36:14,400 --> 00:36:18,400

But the question yet to be answered is, oh, that's delicious.

616

00:36:18,400 --> 00:36:21,400

Is it the most difficult to fly and land?

617

00:36:21,400 --> 00:36:26,400

These guys fly these planes upwards of 12 to 14 hours at a time.

618

00:36:26,400 --> 00:36:27,400

Mmm.

619

00:36:27,400 --> 00:36:30,400

Yep, and after such mammoth flight times,

620

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

you must have some butt-shimming exercises you do to keep yourself from going numb during long flights.

621

00:36:36,400 --> 00:36:39,400

I call it building your ass callous.

622

00:36:40,400 --> 00:36:42,400

Comes the landing.

623

00:36:42,400 --> 00:36:45,400

Ready. Ready to begin the descent.

624

00:36:46,400 --> 00:36:49,400

This is where the rubber meets the runway.

625

00:36:49,400 --> 00:36:52,400

You start by dropping the gear so you feel a little bit of a clunk.

626

00:36:52,400 --> 00:36:56,400

And perhaps the biggest challenge facing any pilot anywhere.

627

00:36:56,400 --> 00:36:58,400

Two gear down and locked.

628

00:36:58,400 --> 00:37:00,400

I'm going to bring the throttle back.

629

00:37:00,400 --> 00:37:05,400

The Dragon Lady lands tail wheel first at a speed that practically stalls the wing.

630

00:37:05,400 --> 00:37:12,400

And with only two sets of landing gear in the center of the fuselage, it's like landing a bicycle.

631

00:37:12,400 --> 00:37:18,400

The pilot has lowered the landing gear and implemented several procedures to add drag

632

00:37:18,400 --> 00:37:23,400

so that it's moving slow enough when we get to the runway that we can actually land.

633

00:37:23,400 --> 00:37:24,400

That's not all.

634

00:37:24,400 --> 00:37:26,400

There's the ground effect.

635

00:37:26,400 --> 00:37:30,400

The U2's high-aspect ratio wings and commensurate uplift

636

00:37:30,400 --> 00:37:37,400

means that on final approach, it tends to float, requiring incredible skill to control.

637

00:37:37,400 --> 00:37:40,400

There's also the issue of runway visibility.

638

00:37:40,400 --> 00:37:44,400

This is the chase car and it's being driven by an actual U2 pilot

639

00:37:44,400 --> 00:37:48,400

because the pilot in the plane has such limited visibility

640

00:37:48,400 --> 00:37:52,400

that he can't even see the runway when he's down close to it.

641

00:37:53,400 --> 00:37:58,400

This pilot is going to be talking him down with foot-by-foot instructions

642

00:37:58,400 --> 00:38:02,400

so that he can respond appropriately at the right time.

643

00:38:03,400 --> 00:38:08,400

Here we have our threshold speed, being under 2,000, down to 2,000.

644

00:38:08,400 --> 00:38:12,400

And now this is the fun part. This is the part where I earn the big U2 pilot bonus money.

645

00:38:12,400 --> 00:38:23,400

Alright, so we have one guy rolling out on final ahead of us.

646

00:38:26,400 --> 00:38:27,400

Yee-haw!

647

00:38:27,400 --> 00:38:31,400

We are ear down, flaps full, speed breaks out, stalls to the right,

648

00:38:31,400 --> 00:38:34,400

lights on and spoilers in the landing position.

649

00:38:35,400 --> 00:38:37,400

Contigued and ready for landing.

650

00:38:38,400 --> 00:38:42,400

480.

651

00:38:44,400 --> 00:38:46,400

Look at that.

652

00:38:47,400 --> 00:38:59,400

16, 12, 10, 8, 7, 6, 5, 4, 3, let it down a little less, 4, 3, 2, hold at 1, inches.

653

00:39:00,400 --> 00:39:02,400

Oh!

654

00:39:06,400 --> 00:39:07,400

Wow.

655

00:39:07,400 --> 00:39:10,400

Very nice. Welcome back gentlemen.

656

00:39:11,400 --> 00:39:14,400

He's required by tradition to stay very nice with there it is or not.

657

00:39:14,400 --> 00:39:16,400

Oh, okay.

658

00:39:17,400 --> 00:39:19,400

It's been a lot of fun. Thanks Adam.

659

00:39:19,400 --> 00:39:22,400

Now there's our big old reception committee.

660

00:39:23,400 --> 00:39:25,400

Alright, throttle off.

661

00:39:25,400 --> 00:39:31,400

Alright editors, if you could give us a little montage of some of the astonishing things we've got to do in the course of doing Mythbusters.

662

00:39:31,400 --> 00:39:32,400

Welcome back.

663

00:39:32,400 --> 00:39:36,400

I'm thinking flying a rocket car across the desert.

664

00:39:38,400 --> 00:39:42,400

Watching a rocket sled accelerate to the speed of sound and hit the immovable wall.

665

00:39:44,400 --> 00:39:45,400

That was awesome!

666

00:39:47,400 --> 00:39:51,400

Sliding down a 200 foot water slide 70 feet through the air into a target.

667

00:39:56,400 --> 00:40:00,400

This tops all of those by a factor of two.

668

00:40:01,400 --> 00:40:07,400

That was unbelievable. Unrepeatable. Incredible.

669

00:40:08,400 --> 00:40:10,400

I'm out of superlatives.

670

00:40:11,400 --> 00:40:21,400

I have just spent the last two hours strapped to a rocket, wearing a space suit, flying to the edge of our Earth's atmosphere and seeing my hometown from a vantage point.

671

00:40:21,400 --> 00:40:23,400

Wow! It's a great view of the bridge.

672

00:40:23,400 --> 00:40:25,400

It is an incredible view.

673

00:40:25,400 --> 00:40:29,400

That was completely unique.

674

00:40:29,400 --> 00:40:32,400

So Adam, how do you figure we're going to call this?

675

00:40:32,400 --> 00:40:39,400

Because, I mean, this is supposed to be the most difficult plane to fly, but we haven't looked at any other planes.

676

00:40:39,400 --> 00:40:46,400

Okay, but we did learn this. It is a completely unique airframe, purpose built for a completely unique mission.

677

00:40:46,400 --> 00:40:52,400

It requires a more numerous flight crew and a more exhaustive set of protocols than any other plane in the military.

678

00:40:52,400 --> 00:40:58,400

And it is the only airborne endeavor besides going to space that requires the wearing of the space suit.

679

00:40:58,400 --> 00:41:00,400

This is not a bad way to spend your day.

680

00:41:01,400 --> 00:41:03,400

I think that places it in the plausible category.

681

00:41:05,400 --> 00:41:06,400

Okay.

682

00:41:06,400 --> 00:41:09,400

Alright, I think it also places it in the ultra cool category.

683

00:41:09,400 --> 00:41:10,400

Absolutely.

684

00:41:10,400 --> 00:41:11,400

Let's get out of here.

685

00:41:16,400 --> 00:41:19,400

So Adam, do you know why she's called the Dragon Lady?

686

00:41:19,400 --> 00:41:20,400

No, I don't.

687

00:41:20,400 --> 00:41:24,400

Because you don't know whether she's going to land like a dragon or a lady.