

1

00:00:00,000 --> 00:00:05,640

Attention viewers do not try anything you're about to see at home.

2

00:00:05,640 --> 00:00:10,800

We're what you call experts.

3

00:00:10,800 --> 00:00:13,200

On this combustible episode of Mythbusters.

4

00:00:13,200 --> 00:00:15,700

I see good things in our future.

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00:00:15,700 --> 00:00:19,480

We test a tale that brings out the teenage boy in all of us.

6

00:00:19,480 --> 00:00:21,680

Dude you gotta be careful.

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00:00:21,680 --> 00:00:25,240

It's non-stop fireworks for Tori Grant and Carrie.

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00:00:25,240 --> 00:00:28,760

When in Carol I will use one of my coworkers as a human shield.

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00:00:28,760 --> 00:00:31,920

As they tackle the myth of the human skyrocket.

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00:00:31,920 --> 00:00:32,920

What?

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00:00:32,920 --> 00:00:34,920

Oh my god.

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00:00:34,920 --> 00:00:40,600

Meantime Adam and Jamie try turning the tables on their favorite episode of CSI.

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00:00:40,600 --> 00:00:46,000

I am aimed to see if combining two supposedly non-lethal weapons.

14

00:00:46,000 --> 00:00:47,720

Welcome Earthlings.

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00:00:47,720 --> 00:00:49,920

We mean you no harm.

16

00:00:49,920 --> 00:00:52,840

Could actually make them a deadly duo.

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00:00:52,840 --> 00:00:53,960

There's your fireball.

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00:00:53,960 --> 00:00:57,880

With any luck we will end up with a charred chorus.

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00:00:57,880 --> 00:00:59,880

I can't clear them going hot.

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00:00:59,880 --> 00:01:04,880

Who are the Mythbusters?

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00:01:04,880 --> 00:01:07,880

Adam Savage.

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00:01:07,880 --> 00:01:08,880

That is science.

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00:01:08,880 --> 00:01:09,880

And Jamie Hoderman.

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00:01:09,880 --> 00:01:12,880

Things are gonna start to get a little crazy in here.

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00:01:12,880 --> 00:01:17,880

Between them more than 30 years of special effects experience.

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00:01:17,880 --> 00:01:19,880

Joining them.

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00:01:19,880 --> 00:01:21,880

Brent Imahara.

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00:01:21,880 --> 00:01:23,880

Carrie Byron.

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00:01:23,880 --> 00:01:24,880

Let's do it.

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00:01:24,880 --> 00:01:25,880

And Tori Bellaci.

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00:01:25,880 --> 00:01:26,880

But don't worry we're not gonna give up.

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00:01:26,880 --> 00:01:28,880

They don't just tell the myths.

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00:01:28,880 --> 00:01:33,880

They look them to the test.

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00:01:38,880 --> 00:01:39,880

First up.

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00:01:39,880 --> 00:01:44,880

A shocking tale of crime scene chaos.

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00:01:44,880 --> 00:01:45,880

So what do we got?

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00:01:45,880 --> 00:01:49,880

Well you remember a few months ago that you and I did a cameo on CSI?

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00:01:49,880 --> 00:01:50,880

I do.

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00:01:50,880 --> 00:01:52,880

We played scientists in lab coats.

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00:01:52,880 --> 00:01:56,880

There's about a perp who had spontaneously combusted after being hit with a stun gun.

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00:01:56,880 --> 00:02:01,880

And it turned out upon investigation that prior to being hit with a stun gun he was pepper spray.

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00:02:01,880 --> 00:02:04,880

And that the pepper spray had a flammable component in it.

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00:02:04,880 --> 00:02:10,880

Which when coupled with the spark of the stun gun caused him to burst into a huge fireball.

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00:02:10,880 --> 00:02:13,880

And guess what happened after that episode, Eric?

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00:02:13,880 --> 00:02:16,880

We got a ton of requests to do it ourselves and test it for real.

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00:02:16,880 --> 00:02:18,880

Exactly right.

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00:02:18,880 --> 00:02:24,880

It appeared that not only did we make a cameo on CSI, but CSI is making a cameo on Mythbusters.

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00:02:26,880 --> 00:02:36,880

The science unfolds in the CSI lab as Nick Stokes shows that stun gun plus pepper spray equals an instant massive fireball.

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00:02:36,880 --> 00:02:42,880

It's a nice bit of TV, but we all want to know if it works in real life.

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00:02:42,880 --> 00:02:50,880

Well, if I'm going to potentially set something on fire, I think right here under Jamie's exhaust hood is as good a place as any to do it safely.

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00:02:50,880 --> 00:02:55,880

The boys have made a bold decision to simply set up the scene and go for it.

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00:02:55,880 --> 00:02:59,880

Standing in for the victim is one dead pig.

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00:02:59,880 --> 00:03:03,880

We use pigs a lot on this show because they're great human analogs.

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00:03:03,880 --> 00:03:06,880

But we're not wasting them because they're too darn tasty.

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00:03:06,880 --> 00:03:11,880

In fact, after we're done with them here, I'm taking them home and cooking them up. You ready?

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00:03:11,880 --> 00:03:13,880

I am. Let's hook it up.

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00:03:16,880 --> 00:03:24,880

With the pig analog securely fastened, Adam fits a small flannel shirt they've been saving for just the right occasion.

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00:03:25,880 --> 00:03:26,880

There we go.

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00:03:27,880 --> 00:03:31,880

Now Jamie unloads a whole can of police issue pepper spray.

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00:03:31,880 --> 00:03:35,880

All right. Time to take him down with the stun gun.

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00:03:36,880 --> 00:03:40,880

And hopefully replicate that CSI fireball.

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

I am aimed and three.

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00:03:45,880 --> 00:03:48,880

I gotta say, I don't think we're going to get fire in this one.

64

00:03:48,880 --> 00:03:49,880

Okay.

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00:03:49,880 --> 00:03:51,880

Two, one.

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00:03:57,880 --> 00:03:59,880

What do you know? I was right.

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00:03:59,880 --> 00:04:01,880

Yep. No fire.

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00:04:01,880 --> 00:04:02,880

That's disappointing.

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00:04:02,880 --> 00:04:09,880

That's putting it mildly. It's a complete dud. Even Adam's surprised by the totality of the failure.

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00:04:09,880 --> 00:04:12,880

I don't know what to say. We did everything right. No flaming pig.

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00:04:12,880 --> 00:04:15,880

Yeah. Well, there are a number of different things going on here.

72

00:04:15,880 --> 00:04:19,880

And I think we need to break them out separately to see what's happening before we call it.

73

00:04:19,880 --> 00:04:21,880

Yeah. Okay. Let's do that.

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00:04:22,880 --> 00:04:26,880

And here's the breakdown. Successful combustion needs three things.

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00:04:26,880 --> 00:04:29,880

The first is oxygen and there's plenty of that.

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00:04:29,880 --> 00:04:31,880

Second is something combustible.

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00:04:31,880 --> 00:04:33,880

Supposedly the pepper soaked shirt.

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00:04:33,880 --> 00:04:36,880

Third is a reliable source of ignition.

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00:04:36,880 --> 00:04:41,880

So let's reboot this myth by reexamining the stun gun.

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00:04:41,880 --> 00:04:44,880

The operation of these stun guns is relatively simple and it happens in two phases.

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00:04:44,880 --> 00:04:46,880

Allow me to illustrate.

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00:04:46,880 --> 00:04:53,880

The first phase, when you pull the trigger, the gun fires a pair of shiny little barbs across the room that embed themselves right into your skin.

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00:04:53,880 --> 00:04:58,880

And the second part, it starts pumping voltage through these wires into those barbs and into your body.

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00:04:58,880 --> 00:05:04,880

And when that voltage gets to your body, it starts interrupting your brain's ability to tell your muscles what to do and you pretty much collapse in the heap on the ground.

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00:05:04,880 --> 00:05:06,880

But the question remains.

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00:05:06,880 --> 00:05:07,880

All right.

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00:05:07,880 --> 00:05:12,880

Can even 50,000 volts produce enough spark to start a human bonfire?

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00:05:15,880 --> 00:05:16,880

There you go.

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00:05:16,880 --> 00:05:17,880

Plenty of sparks.

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00:05:17,880 --> 00:05:19,880

I have to say I'm kind of surprised.

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00:05:19,880 --> 00:05:25,880

I was actually expecting that once those barbs embedded themselves in the pig flesh, they'd complete a circuit and we wouldn't see any sparks.

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00:05:25,880 --> 00:05:26,880

But we do.

93

00:05:27,880 --> 00:05:28,880

Look at that.

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00:05:29,880 --> 00:05:36,880

I was also surprised that the barbs were creating sparks while they were fully embedded in the pig, but it's easy to understand why.

95

00:05:36,880 --> 00:05:44,880

The company has decided it's most efficient to simply tie a knot in the end of the wire so it locks into the hole like so.

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00:05:44,880 --> 00:05:52,880

And they know that given the fact that they're using such high voltage in these things that the spark will jump across into the needle and do its job.

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00:05:52,880 --> 00:05:57,880

But that jumping spark also serves as a potential source of ignition.

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00:05:57,880 --> 00:06:00,880

But will it be big enough to ignite the myth?

99

00:06:00,880 --> 00:06:03,880

You know, we've doubled with small sparks before.

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00:06:03,880 --> 00:06:08,880

How hard can it be to blow up a room full of gasoline?

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00:06:08,880 --> 00:06:11,880

And often enough, we're left disappointed.

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00:06:11,880 --> 00:06:12,880

Nothing.

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00:06:12,880 --> 00:06:13,880

What a shocker.

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00:06:14,880 --> 00:06:20,880

So ideally, they'd like a much bigger spark and they've worked out a way that perfectly fits the myth.

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00:06:20,880 --> 00:06:21,880

All right.

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00:06:21,880 --> 00:06:23,880

Let me describe the experimental setup here.

107

00:06:23,880 --> 00:06:25,880

This hamhawk is our perp.

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00:06:25,880 --> 00:06:28,880

This barb is the barb that's in his skin.

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00:06:28,880 --> 00:06:37,880

This vinyl shower curtain is our perp's clothing and this barb is the barb that didn't make it all the way to the perp's skin because it got caught up in his clothing.

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00:06:37,880 --> 00:06:39,880

Let's see what happens.

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00:06:39,880 --> 00:06:43,880

It's an intriguing twist on the basic test, but will it work?

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00:06:45,880 --> 00:06:47,880

That's what I'm talking about.

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

Nice big 3 centimeter spark through the clothes into the guy's flesh. Bingo.

114

00:06:52,880 --> 00:06:55,880

That's a big take for reliable ignition.

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00:06:55,880 --> 00:06:58,880

Next up, they'll be pushing the button on pepper spray.

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

Our second myth has blatant disregard for self-preservation written all over it.

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00:07:07,880 --> 00:07:15,880

So, a guy is lighting off fireworks at a German fireworks festival and he decides to take an action figure, strap a skyrocket to it and send it flying.

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00:07:15,880 --> 00:07:17,880

Well, I used to do that all the time when I was a kid.

119

00:07:17,880 --> 00:07:19,880

Yeah, but that's not the myth.

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00:07:19,880 --> 00:07:24,880

The myth is that he then decides to step it up and strap the fireworks to himself.

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00:07:24,880 --> 00:07:28,880

So, he gets around 400 skyrockets. He attaches them to himself.

122

00:07:28,880 --> 00:07:31,880

He builds a ramp. He lights them all off and whoosh!

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00:07:31,880 --> 00:07:36,880

He goes flying 150 feet over a lake and splashes down to safety.

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00:07:37,880 --> 00:07:39,880

The details are delightfully vague.

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00:07:39,880 --> 00:07:45,880

All we know is that some guy built some kind of ramp and launched himself with 400 skyrockets.

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00:07:45,880 --> 00:07:50,880

Is that even remotely possible or is it a special kind of stupid?

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00:07:51,880 --> 00:07:54,880

All we do know for sure is that he wasn't a professional.

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00:07:54,880 --> 00:07:57,880

So, likely the fireworks he used were over the counter.

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00:07:57,880 --> 00:07:59,880

Alright, well why don't we just start there.

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00:07:59,880 --> 00:08:04,880

We'll take some of these skyrockets. We'll add some weight and find out exactly how much one of these skyrockets can lift.

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00:08:04,880 --> 00:08:13,880

Good idea because if we can find the carrying capacity of a single firework, then we can calculate how many it's going to take to lift an average man, somebody like 200 pounds.

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00:08:14,880 --> 00:08:20,880

So, they book the bomb range and get hold of the biggest over-the-counter skyrockets money can buy.

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00:08:20,880 --> 00:08:26,880

We're out at the Alameda County bomb range so we can test the most powerful consumer fireworks that we could find.

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00:08:26,880 --> 00:08:31,880

Then, with the help of a high-speed camera and one of the biggest scales we've ever used...

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00:08:31,880 --> 00:08:33,880

Does this look straight?

136

00:08:33,880 --> 00:08:38,880

We'll time how long it takes to get from the bottom of the scale all the way to the top.

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00:08:38,880 --> 00:08:42,880

That, plus knowing how long the scale is, will give us the speed.

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00:08:42,880 --> 00:08:49,880

Once we have the speed, we'll find the carrying capacity by adding weight to the tip of the firework until it slows it down by 50%.

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00:08:49,880 --> 00:08:51,880

Then we'll call that our carrying capacity.

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00:08:52,880 --> 00:08:56,880

The plan is rock solid, but it still needs some caressing and finessing.

141

00:08:57,880 --> 00:09:01,880

Now for these tests, it's important that these skyrockets have identical flight paths.

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00:09:01,880 --> 00:09:05,880

So, I've hooked up the steel cable that we can connect our fireworks to.

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00:09:05,880 --> 00:09:10,880

So that way, each test, we have the same path, but we do not change the thrust of the rocket.

144

00:09:10,880 --> 00:09:14,880

The first control rocket carries no extra weight whatsoever.

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00:09:14,880 --> 00:09:15,880

Here we go!

146

00:09:26,880 --> 00:09:28,880

Blink and you miss it.

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00:09:29,880 --> 00:09:33,880

But the high-speed camera captures and records every detail.

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00:09:33,880 --> 00:09:38,880

Okay, so we went 32 feet in .4 seconds.

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00:09:38,880 --> 00:09:42,880

Okay, that's 80 feet per second. That's around 55 miles an hour. That's a pretty good speed.

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00:09:42,880 --> 00:09:44,880

Great, let's add some weight.

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00:09:44,880 --> 00:09:50,880

The extra weight comes courtesy of some heavy-duty nuts. Each one weighs exactly 50 grams.

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00:09:50,880 --> 00:09:57,880

All right, this is perfect. So I'll just glue it to the top of the rocket and we'll find out if this affects the thrust of it.

153

00:09:57,880 --> 00:09:58,880

Yeah.

154

00:09:58,880 --> 00:10:01,880

Carry lights the fuse, then scanners.

155

00:10:01,880 --> 00:10:06,880

Oh!

156

00:10:06,880 --> 00:10:11,880

The extra weight only slowed the rocket by 20 percent.

157

00:10:11,880 --> 00:10:16,880

So instead of adding just one more nut to the next rocket, they'll add two.

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00:10:16,880 --> 00:10:21,880

Okay, this is consumer grade firework with 150 gram load. Here we go.

159

00:10:27,880 --> 00:10:28,880

Yeah!

160

00:10:28,880 --> 00:10:30,880

Definitely slowed it down.

161

00:10:30,880 --> 00:10:33,880

Yeah, we might have found the number. I like that.

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00:10:33,880 --> 00:10:39,880

The replay confirms that they've got what they wanted. A 50% reduction in speed. That's the good news.

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00:10:39,880 --> 00:10:42,880

Now, here's the bad news.

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00:10:42,880 --> 00:10:49,880

Well, with 400 rockets, 150 grams, that's 60 kilograms, that's a carrying capacity of about 130 pounds.

165

00:10:49,880 --> 00:10:52,880

But wait, the guy alone without all his gear in this myth is 200 pounds.

166

00:10:52,880 --> 00:10:57,880

Yeah, it's not looking good for the myth. I mean, you would need well over 400 rockets to lift this guy.

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00:10:57,880 --> 00:11:03,880

In fact, they need around 800 of these US-made rockets to haul a full grown man.

168

00:11:03,880 --> 00:11:07,880

So here's hoping somebody's got a plan B.

169

00:11:08,880 --> 00:11:13,880

After the break, Adam and Jamie suit up for a spectacular pepper spray shootout.

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00:11:13,880 --> 00:11:16,880

It's not everybody gets to come to work in their jammies.

171

00:11:17,880 --> 00:11:23,880

Out at the Treasure Island fire test facility, Adam and Jamie plan to ignite some pepper spray.

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00:11:26,880 --> 00:11:28,880

I love it out here.

173

00:11:28,880 --> 00:11:33,880

They've already shown that the spark from a stun gun could have some kick to it.

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00:11:33,880 --> 00:11:36,880

Now, to advance the investigation.

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00:11:36,880 --> 00:11:38,880

Is pepper spray flammable?

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00:11:38,880 --> 00:11:41,880

And if it is, we'll be sure to find out.

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00:11:41,880 --> 00:11:46,880

We're going to take each of our samples and spray it from this location over this open flame,

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00:11:46,880 --> 00:11:50,880

both from six inches away like this and from 18 inches away.

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00:11:50,880 --> 00:11:55,880

Different sprays have different recipes, so we'll test five different types,

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00:11:55,880 --> 00:11:58,880

some of which aren't used by the California cops.

181

00:11:58,880 --> 00:12:02,880

These pepper sprays are non-lethal, but they are really pretty nasty.

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00:12:02,880 --> 00:12:08,880

In fact, when we were testing with them, we found out that they were actually used by the California cops.

183

00:12:08,880 --> 00:12:10,880

But they are really pretty nasty.

184

00:12:10,880 --> 00:12:15,880

In fact, when we were testing with them earlier, I managed to get some on my hands and my skin was irritated for days.

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00:12:15,880 --> 00:12:18,880

The crew that was taping this was coughing and sneezing.

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00:12:18,880 --> 00:12:20,880

It was really kind of unpleasant.

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00:12:20,880 --> 00:12:25,880

So this time around, we've got to hold up some of the level three chem suits that we're going to be wearing.

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00:12:25,880 --> 00:12:29,880

So we can focus on the testing and not about how bad we feel.

189

00:12:30,880 --> 00:12:35,880

Adam's already dressed for success, so Jamie follows suit.

190

00:12:35,880 --> 00:12:38,880

It's not everybody gets to come to work in their jammies.

191

00:12:39,880 --> 00:12:43,880

So a persistent rumor is confirmed by the great man himself.

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00:12:43,880 --> 00:12:47,880

Jamie does go to bed wearing hazmat pajamas.

193

00:12:48,880 --> 00:12:51,880

Welcome Earthlings. We mean you no harm.

194

00:12:51,880 --> 00:12:56,880

Our first five samples tested from six inches away.

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00:12:56,880 --> 00:13:00,880

The first one's supposed to be non-flammable. Let's see if it's true.

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

Just for the record, that six inch gap is exactly the industry standard for testing flammability.

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00:13:06,880 --> 00:13:08,880

All right. You ready for number one?

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00:13:08,880 --> 00:13:09,880

Yep.

199

00:13:09,880 --> 00:13:10,880

All right, here we go.

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00:13:11,880 --> 00:13:15,880

The first canister fully lived up to its no burn promise.

201

00:13:15,880 --> 00:13:17,880

So let's check the second.

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00:13:20,880 --> 00:13:21,880

Bupkis.

203

00:13:21,880 --> 00:13:25,880

That's two quick strikes, but the third shows some promise.

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00:13:27,880 --> 00:13:28,880

Oh, not bad.

205

00:13:30,880 --> 00:13:35,880

As for number four, just lay back and bask in the ambient heat of the can that can.

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00:13:38,880 --> 00:13:41,880

That's the money right there. Want to see it again?

207

00:13:42,880 --> 00:13:43,880

I think we all do.

208

00:13:47,880 --> 00:13:51,880

The key thing that made this a fireball was the kind of propellant it used.

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00:13:52,880 --> 00:13:54,880

So on to can five.

210

00:13:56,880 --> 00:13:58,880

Five is a contender.

211

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

As it turns out, at six inches, two out of our five samples were aggressively flammable.

212

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

So they found the two most volatile cans, but there's no guarantee that either one will ignite when it's sprayed on a fabric.

213

00:14:14,880 --> 00:14:20,880

To test that, we will be staging the world's first wet flannel shirt contest.

214

00:14:23,880 --> 00:14:29,880

We're back in the shop because we found even the most powerful consumer fireworks we can get in the entire United States

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00:14:29,880 --> 00:14:32,880

did not have the thrust we need to propel a man.

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00:14:32,880 --> 00:14:37,880

So since this myth originated in Europe, we're thinking maybe they had something a little more powerful.

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00:14:38,880 --> 00:14:43,880

Now, since we weren't able to get the European skyrockets with the greater thrust, we need to have to make our own rocket.

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00:14:43,880 --> 00:14:47,880

So we have the next best thing, a mono rocket motor.

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00:14:47,880 --> 00:14:48,880

It has the same exact thrust.

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00:14:48,880 --> 00:14:54,880

Now all we need to do is add a cone, attach a stick, and maybe make them look more like skyrockets.

221

00:14:56,880 --> 00:14:58,880

Things get off to a slowish start.

222

00:14:59,880 --> 00:15:01,880

I've glued myself to the rocket already.

223

00:15:01,880 --> 00:15:07,880

As they set about custom building an arsenal of European strength single stage skyrockets.

224

00:15:07,880 --> 00:15:10,880

We pride ourselves on quantity, not quality.

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00:15:10,880 --> 00:15:17,880

Let's hope he's joking because all these homemade fireworks have to be just as reliable as the store bought ones.

226

00:15:18,880 --> 00:15:21,880

That's it. If I want a pageant, this would definitely be my bouquet.

227

00:15:22,880 --> 00:15:23,880

Those look awesome.

228

00:15:23,880 --> 00:15:25,880

All right, you guys ready to set them off?

229

00:15:25,880 --> 00:15:26,880

Yeah.

230

00:15:26,880 --> 00:15:27,880

Definitely.

231

00:15:28,880 --> 00:15:31,880

So it's back to the bomb range with something to prove.

232

00:15:31,880 --> 00:15:32,880

Yeah, I got high hopes.

233

00:15:32,880 --> 00:15:37,880

If these rockets can't bear a much bigger load, the myth is as good as busted.

234

00:15:37,880 --> 00:15:39,880

All right, so our first test is going to be our control.

235

00:15:39,880 --> 00:15:43,880

This is our new and improved rockets with no weights.

236

00:15:43,880 --> 00:15:46,880

We'll find out how fast they go.

237

00:15:46,880 --> 00:15:55,880

This time they've hooked up the rocket to a much safer electric fuse and Carrie's about to show how she responds in a moment of pure panic.

238

00:15:55,880 --> 00:15:57,880

In three, two, one.

239

00:16:02,880 --> 00:16:03,880

Okay.

240

00:16:03,880 --> 00:16:09,880

The skyrocket turned kamikaze, but it stayed straight enough for long enough to get the data.

241

00:16:09,880 --> 00:16:12,880

96 miles per hour at the top of the scale.

242

00:16:12,880 --> 00:16:18,880

I also learned something very valuable, which is when in peril, I will use one of my coworkers as a human shield.

243

00:16:18,880 --> 00:16:20,880

Sorry, Grant.

244

00:16:21,880 --> 00:16:23,880

But Grant remains unfazed.

245

00:16:23,880 --> 00:16:27,880

He's already decided they can afford to up the starting weight.

246

00:16:27,880 --> 00:16:34,880

So I think we can go directly to the 150 gram load, which is exactly what the consumer grade firework could do for its maximum capacity.

247

00:16:34,880 --> 00:16:42,880

By adding small weights to single rockets, they hope to find out if 400 fireworks really could launch a human.

248

00:16:42,880 --> 00:16:45,880

In three, two, one.

249

00:16:51,880 --> 00:16:52,880

It's gone.

250

00:16:52,880 --> 00:16:55,880

I don't think that weight did a whole lot.

251

00:16:55,880 --> 00:16:58,880

That weight didn't do anything.

252

00:16:58,880 --> 00:17:03,880

Actually, it did, but the homemade rocket bore its burden with relative ease.

253

00:17:03,880 --> 00:17:05,880

That's crazy.

254

00:17:05,880 --> 00:17:09,880

All right, that is 53 miles per hour, so not even 50% yet.

255

00:17:09,880 --> 00:17:15,880

Well, I'd also like to point out that the commercial ones that we're using before look like they were slowing when they got to the top of the scale.

256

00:17:15,880 --> 00:17:16,880

These have way more thrust.

257

00:17:16,880 --> 00:17:18,880

I think we can add even, like, double the weight.

258

00:17:18,880 --> 00:17:20,880

All right, let's take it up to 300 grams.

259

00:17:20,880 --> 00:17:21,880

All right.

260

00:17:21,880 --> 00:17:26,880

So Tori glues six knots to the top of the cone of the next skyrocket.

261

00:17:26,880 --> 00:17:32,880

This seemed dangerous to launch 300 grams of steel into the air.

262

00:17:32,880 --> 00:17:36,880

Well, given the flight path of the first rocket, yeah.

263

00:17:36,880 --> 00:17:40,880

In three, two, one.

264

00:17:45,880 --> 00:17:47,880

It lifted it.

265

00:17:47,880 --> 00:17:50,880

All right, let's see how fast it went.

266

00:17:50,880 --> 00:17:56,880

The high speed confirms they've honed in on the Goldilocks figure for weight-bearing rockets.

267

00:17:56,880 --> 00:17:57,880

Wow.

268

00:17:57,880 --> 00:18:00,880

All right, and that is 43 miles per hour.

269

00:18:00,880 --> 00:18:02,880

And that's pretty impressive.

270

00:18:02,880 --> 00:18:03,880

Yeah, but you know what?

271

00:18:03,880 --> 00:18:09,880

It is slowing at the end of the line, so I think we're going to have to call this the limit, the carrying capacity for the rocket motor.

272

00:18:09,880 --> 00:18:16,880

Okay, with 300 grams added to what is already 100 grams for the rocket, that means we're going to have to have about 400 rockets to get our man out.

273

00:18:17,880 --> 00:18:19,880

That gives validity to this myth.

274

00:18:19,880 --> 00:18:21,880

All right, guess who did it?

275

00:18:21,880 --> 00:18:22,880

Cool.

276

00:18:22,880 --> 00:18:23,880

That's awesome.

277

00:18:23,880 --> 00:18:27,880

So the myth of the fireworks man is alive and kicking.

278

00:18:27,880 --> 00:18:31,880

They just need to put all that potency into practice.

279

00:18:38,880 --> 00:18:40,880

Well, so far so good.

280

00:18:40,880 --> 00:18:46,880

Yep, stun guns do provide a very reasonable spark for ignition, and some pepper sprays are quite flammable.

281

00:18:46,880 --> 00:18:51,880

So now all we've got to do is put two together and see if we get some kind of spontaneous combustion.

282

00:18:51,880 --> 00:18:52,880

Slow down there, cowboy.

283

00:18:52,880 --> 00:18:59,880

I think there's one more thing we could take a look at in here, which is what kind of material was the shirt made of that the perp was wearing?

284

00:18:59,880 --> 00:19:04,880

There's a lot of different things they make clothing out of, and some are more flammable than others.

285

00:19:04,880 --> 00:19:09,880

I think we need to do some tests and find out which kind of material we can find that burns the fastest.

286

00:19:09,880 --> 00:19:10,880

Okay.

287

00:19:11,880 --> 00:19:17,880

Armed with a lighter and a charming selection of swatches, the method is pretty straightforward.

288

00:19:17,880 --> 00:19:25,880

Fabric placed on a 45-degree angle, exposed to a lighter at the bottom for one second, and timed how long it takes for the flame to reach the top.

289

00:19:25,880 --> 00:19:29,880

We compare all these and figure out which one's the most flammable.

290

00:19:29,880 --> 00:19:30,880

I like it.

291

00:19:30,880 --> 00:19:34,880

The guy on CSI that gets set on fire was wearing a flannel shirt.

292

00:19:34,880 --> 00:19:36,880

Now, what is flannel?

293

00:19:36,880 --> 00:19:39,880

Well, in the early days, it was a wool material.

294

00:19:39,880 --> 00:19:40,880

Then it was a wool blend.

295

00:19:40,880 --> 00:19:46,880

Now it can be virtually any kind of material that is thick and sort of fluffy and has this plaid pattern.

296

00:19:46,880 --> 00:19:55,880

So from natural fibers, it comes cotton, to acrylics and acetates, the guys put the torch to some hopefully flammable fabrics.

297

00:19:55,880 --> 00:19:58,880

All right, let's try rayon.

298

00:19:58,880 --> 00:20:01,880

Some take their own sweet time.

299

00:20:01,880 --> 00:20:02,880

45 seconds.

300

00:20:02,880 --> 00:20:04,880

And that's it.

301

00:20:05,880 --> 00:20:08,880

Some just refuse to catch fire.

302

00:20:08,880 --> 00:20:11,880

No burning at all from wool.

303

00:20:11,880 --> 00:20:15,880

And others burn up like a trail of gunpowder.

304

00:20:15,880 --> 00:20:16,880

Dude.

305

00:20:16,880 --> 00:20:19,880

Police burns with vigor.

306

00:20:19,880 --> 00:20:22,880

Bang, that's right there. 15 seconds.

307

00:20:22,880 --> 00:20:25,880

Now all that remains is to find out the fastest.

308

00:20:25,880 --> 00:20:27,880

The results are in.

309

00:20:27,880 --> 00:20:31,880

We have burned eight kinds of fabric, gotten eight different burn times.

310

00:20:31,880 --> 00:20:35,880

And the winner, it turns out, is a tie at 15 seconds.

311

00:20:35,880 --> 00:20:39,880

The fastest burning fabrics are both acrylic and flink.

312

00:20:39,880 --> 00:20:41,880

Robert, tell them what they've won.

313

00:20:41,880 --> 00:20:42,880

Thanks, Adam.

314

00:20:42,880 --> 00:20:46,880

Yesterday's two fabrics both win the chance to return to the game as real shirts.

315

00:20:46,880 --> 00:20:51,880

Then get burned right down to their buttons and a winner takes all torch time trial.

316

00:20:51,880 --> 00:20:53,880

Back to you, Adam.

317

00:20:53,880 --> 00:20:58,880

When you do that, I'm going to call upon all the skills I remember from home economics

318

00:20:58,880 --> 00:21:01,880

in fourth and fifth grade with Miss Cabanitas.

319

00:21:01,880 --> 00:21:03,880

I still remember a couple things.

320

00:21:03,880 --> 00:21:05,880

Adam's not showing off.

321

00:21:05,880 --> 00:21:08,880

We just couldn't buy a plaid fleece shirt.

322

00:21:08,880 --> 00:21:11,880

So this is a home spun savage original.

323

00:21:11,880 --> 00:21:15,880

But he will need some torsos to hang his designs on.

324

00:21:15,880 --> 00:21:20,880

That's where this guy comes in because I'm going to make a wire mannequin that looks roughly like this

325

00:21:20,880 --> 00:21:23,880

so we have something to hang them on while they burn.

326

00:21:23,880 --> 00:21:27,880

In just a few minutes, they both finish flirting with fashion.

327

00:21:27,880 --> 00:21:30,880

And they both seem enamored with their efforts.

328

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

Show Jamie the threads.

329

00:21:34,880 --> 00:21:36,880

Check it out.

330

00:21:36,880 --> 00:21:39,880

Uh, who's your tailor, dude?

331

00:21:39,880 --> 00:21:40,880

I am my tailor.

332

00:21:40,880 --> 00:21:43,880

Hey, these are one time use.

333

00:21:43,880 --> 00:21:46,880

These guys look great.

334

00:21:46,880 --> 00:21:49,880

Meet Bernie and his little brother, Crispin.

335

00:21:49,880 --> 00:21:52,880

So Bernie and Crispin get shirted up.

336

00:21:52,880 --> 00:21:57,880

One with a plaid that's all acrylic and the other made from so-called fleece.

337

00:21:57,880 --> 00:22:01,880

Another synthetic that's partly made from recycled plastic.

338

00:22:01,880 --> 00:22:06,880

The boys are eager to learn just how combustible a shirt can be.

339

00:22:06,880 --> 00:22:10,880

Both shirts are lit from the same point at the same time.

340

00:22:10,880 --> 00:22:13,880

Right now the acrylic really seems to be winning by a fair bit.

341

00:22:13,880 --> 00:22:16,880

It's much more aggressive.

342

00:22:16,880 --> 00:22:17,880

Indeed.

343

00:22:17,880 --> 00:22:21,880

With no pepper spray, both shirts burn slowly but consistently.

344

00:22:21,880 --> 00:22:24,880

Adam, of course, has a vested interest.

345

00:22:24,880 --> 00:22:27,880

Come on, fleece. After all our training, after all our discussion,

346

00:22:27,880 --> 00:22:29,880

is that all you got? You're going to let acrylic take you to town?

347

00:22:29,880 --> 00:22:31,880

You're going to let him show you up?

348

00:22:31,880 --> 00:22:33,880

Put something into it, man!

349

00:22:33,880 --> 00:22:35,880

But he's back the wrong glows.

350

00:22:35,880 --> 00:22:39,880

Eventually, the acrylic is the first one to give up the ghost.

351

00:22:39,880 --> 00:22:41,880

I'm going to call it.

352

00:22:42,880 --> 00:22:44,880

Eight minutes, 25 seconds.

353

00:22:44,880 --> 00:22:52,880

The acrylic is completely burnt up to a crisp and the fleece still has more than halfway to go.

354

00:22:52,880 --> 00:22:56,880

So, acrylic it is. And here's the upshot.

355

00:22:56,880 --> 00:23:00,880

Shirts do burn. Stun guns can make a big spark.

356

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

And some pepper sprays are totally flammable.

357

00:23:03,880 --> 00:23:08,880

Now all that remains is to pull these best case combustibles together

358

00:23:08,880 --> 00:23:12,880

to see if they can really make that instantaneous human fireball.

359

00:23:15,880 --> 00:23:17,880

Don't try anything you've seen on the show at home.

360

00:23:17,880 --> 00:23:20,880

We are what you're called experts.

361

00:23:23,880 --> 00:23:28,880

Alright, so according to the test, we are going to need a lot of these fireworks to get this guy off the ground.

362

00:23:28,880 --> 00:23:32,880

But the toughest part is getting all those rockets to ignite at the same time.

363

00:23:32,880 --> 00:23:35,880

And how are they attached to him? What kind of rig are we talking about here?

364

00:23:35,880 --> 00:23:41,880

Again, the details are vague. We do know that he launched himself off a ramp, but there's no other information.

365

00:23:41,880 --> 00:23:45,880

Alright, well then why don't we do this? We'll each come up with our own design, small scale.

366

00:23:45,880 --> 00:23:48,880

We'll attach an action figure to it and we'll launch him off the ramp.

367

00:23:48,880 --> 00:23:51,880

And we'll see which one has the best launch and which one has the best flight pattern.

368

00:23:51,880 --> 00:23:57,880

So in this workshop arena, three specialist craftsmen go head to head.

369

00:24:02,880 --> 00:24:06,880

They have just one hour to whip up a workable prototype.

370

00:24:06,880 --> 00:24:09,880

So, let the games begin.

371

00:24:09,880 --> 00:24:16,880

Each contestant gets two basic ingredients. One raw mini-buster and one sprig of skyrockets.

372

00:24:16,880 --> 00:24:21,880

The winning design is the one that can best launch the doll from a miniature ramp.

373

00:24:21,880 --> 00:24:27,880

Okay, so my idea is a giant Christmas tree-shaped fireworks cluster.

374

00:24:27,880 --> 00:24:30,880

I mean, what is more directional than an arrow?

375

00:24:30,880 --> 00:24:35,880

So all the thrust is going to go down this way and the guy is going to go straight out.

376

00:24:35,880 --> 00:24:42,880

The only problem is making sure that the exhaust from all the fireworks doesn't burn him to a crisp.

377

00:24:42,880 --> 00:24:44,880

I'll work that out later.

378

00:24:44,880 --> 00:24:46,880

Yeah, good luck with that.

379

00:24:46,880 --> 00:24:47,880

Meantime.

380

00:24:47,880 --> 00:24:48,880

That's the outfit.

381

00:24:48,880 --> 00:24:50,880

Now my design for fireworks man is very simple.

382

00:24:50,880 --> 00:24:54,880

It's basically taking a set of wings and attaching them to his back.

383

00:24:54,880 --> 00:24:56,880

And then down the wing, I'll be attaching rockets.

384

00:24:56,880 --> 00:25:00,880

Now when I launch that off, hopefully it'll act like a jet.

385

00:25:00,880 --> 00:25:03,880

The only thing is, I hope these guys can keep up with my pace.

386

00:25:03,880 --> 00:25:05,880

But we still haven't heard from Carrie.

387

00:25:05,880 --> 00:25:07,880

Essentially this is my design.

388

00:25:07,880 --> 00:25:13,880

We have rockets shooting out the back, a big wing for stabilization, a comfortable pillow for my guy to lay on,

389

00:25:13,880 --> 00:25:17,880

and a skateboard that's going to reduce the resistance of the ramp.

390

00:25:17,880 --> 00:25:22,880

Now I think the best part of my design is that I've created a flash pan that's going to ignite all of my rockets at once

391

00:25:22,880 --> 00:25:27,880

because simultaneous admission is something that we've always had trouble with on Mythbusters.

392

00:25:27,880 --> 00:25:33,880

While Carrie and Grant push on with their plans, there's been a small sensation over at Team Tori.

393

00:25:33,880 --> 00:25:37,880

He's decided to scrap his design and go with a new one.

394

00:25:37,880 --> 00:25:40,880

I really wish that I had come up with Tori's design.

395

00:25:40,880 --> 00:25:44,880

Just because I'm a big Star Wars fan, and it looks just like X-Wing Fighter.

396

00:25:44,880 --> 00:25:52,880

I know it was a little late in the game to change the design of Firework Man, but you know, I think this design is much better.

397

00:25:52,880 --> 00:25:57,880

The hour is up, and these radically different designs are about to be put to the test.

398

00:25:57,880 --> 00:26:00,880

Three, two, one, and...

399

00:26:00,880 --> 00:26:01,880

Done!

400

00:26:01,880 --> 00:26:02,880

Done!

401

00:26:03,880 --> 00:26:04,880

Let's see them!

402

00:26:04,880 --> 00:26:05,880

Alright.

403

00:26:05,880 --> 00:26:11,880

Oh, you ready to put your rockets where your mouth is?

404

00:26:11,880 --> 00:26:13,880

Bring it, let's launch them!

405

00:26:13,880 --> 00:26:15,880

Alright, get ready to lose you guys.

406

00:26:15,880 --> 00:26:19,880

Just like Adam and Jamie, they're testing at Treasure Island under the Bay Bridge.

407

00:26:19,880 --> 00:26:25,880

They're aiming to see which design has the best flight path, and which one flies the farthest.

408

00:26:25,880 --> 00:26:28,880

For that, they'll need to stake out their turf.

409

00:26:28,880 --> 00:26:31,880

That might be a little presumptuous.

410

00:26:31,880 --> 00:26:36,880

Given the strength of the mini rockets, 200 feet might be a tad optimistic.

411

00:26:36,880 --> 00:26:39,880

Now for that to occur, two things have to happen.

412

00:26:39,880 --> 00:26:42,880

One, we have to have straight and stable flight.

413

00:26:42,880 --> 00:26:45,880

Two, we have to not explode on the launch pad.

414

00:26:45,880 --> 00:26:50,880

Two very good points, and Torey's the first to test his luck.

415

00:26:50,880 --> 00:26:53,880

I have trays of black powder at each bundle of fireworks.

416

00:26:53,880 --> 00:26:57,880

I'm using an electric igniter to light off each of those trays of black powder.

417

00:26:57,880 --> 00:27:01,880

Once I hit the button, all rockets should fire at the same exact time.

418

00:27:01,880 --> 00:27:04,880

In three, two, one...

419

00:27:06,880 --> 00:27:07,880

Wow!

420

00:27:07,880 --> 00:27:09,880

It did something!

421

00:27:09,880 --> 00:27:12,880

I think it exploded on the launch pad!

422

00:27:12,880 --> 00:27:19,880

The X-Wing aircraft went pretty much nowhere, but the pilot covered some fair piece of real estate.

423

00:27:19,880 --> 00:27:25,880

Torey's launch was awesome, mostly because I can't even tell what happened.

424

00:27:25,880 --> 00:27:31,880

And the guy ended up with his butt burned up over on the lawn in a totally different direction.

425

00:27:31,880 --> 00:27:35,880

Now, there's a piece of my fireworks rocket. There's another piece.

426

00:27:35,880 --> 00:27:40,880

Talk about epic fail. Not only did it crash and burn, it exploded into pieces.

427

00:27:40,880 --> 00:27:43,880

Time for the next fledgling to test her wings.

428

00:27:43,880 --> 00:27:46,880

But it's Grant who makes the prediction.

429

00:27:46,880 --> 00:27:51,880

And if you pick up her flight vehicle, it's a little back heavy actually.

430

00:27:51,880 --> 00:27:57,880

So it could end up sort of doing... I think it's actually going to do a loop-de-loop.

431

00:27:57,880 --> 00:27:59,880

As a matter of fact...

432

00:28:00,880 --> 00:28:02,880

Hold on, little missy.

433

00:28:02,880 --> 00:28:04,880

Fireworks man, carry design, small scale.

434

00:28:04,880 --> 00:28:08,880

In three, two, one...

435

00:28:10,880 --> 00:28:12,880

Wow!

436

00:28:16,880 --> 00:28:21,880

Well, if we wanted something to go across the surface really quickly, we got it!

437

00:28:21,880 --> 00:28:24,880

That was spectacular! Oh my god!

438

00:28:24,880 --> 00:28:27,880

It didn't fly high, but it did fly straight.

439

00:28:27,880 --> 00:28:31,880

And every bit of that unlikely apparatus left the ramp.

440

00:28:31,880 --> 00:28:35,880

As for the added sparkles, nice touch.

441

00:28:35,880 --> 00:28:38,880

My guy isn't charred. We had a perfect ignition.

442

00:28:38,880 --> 00:28:40,880

We had a pretty good distance.

443

00:28:40,880 --> 00:28:44,880

So maybe if I had longer wings, this would have been a perfect flight.

444

00:28:44,880 --> 00:28:47,880

I think I might actually have the winning design here.

445

00:28:47,880 --> 00:28:50,880

But we're yet to see Grant's design take to the air.

446

00:28:50,880 --> 00:28:53,880

And he's suffering from pre-flight nerves.

447

00:28:53,880 --> 00:28:55,880

Okay, here's my biggest fear.

448

00:28:55,880 --> 00:29:00,880

Instead of going on this nice ballistic trajectory out that way, it goes...

449

00:29:02,880 --> 00:29:04,880

And comes right back at us.

450

00:29:04,880 --> 00:29:07,880

If I see that happen, I'm hitting the deck.

451

00:29:07,880 --> 00:29:09,880

Okay, good luck.

452

00:29:09,880 --> 00:29:14,880

When even the experts are scared, it's probably wise to duck and cover.

453

00:29:14,880 --> 00:29:17,880

In three, two, one...

454

00:29:23,880 --> 00:29:27,880

Grant's launch looked more like a guy slipping on soap.

455

00:29:27,880 --> 00:29:28,880

Oh!

456

00:29:28,880 --> 00:29:31,880

So there's no real need for a high-speed replay.

457

00:29:31,880 --> 00:29:33,880

But let's do it anyway.

458

00:29:33,880 --> 00:29:38,880

This one barely made it off the launch pad, did not achieve flight,

459

00:29:38,880 --> 00:29:43,880

could not get simultaneous ignition, and therefore has to be rejected.

460

00:29:43,880 --> 00:29:45,880

Oh!

461

00:29:45,880 --> 00:29:48,880

So the winning design is clearly carries.

462

00:29:48,880 --> 00:29:51,880

In the end, this is the design we're going with.

463

00:29:51,880 --> 00:29:55,880

We have one bank of fireworks that all ignite simultaneously.

464

00:29:55,880 --> 00:29:58,880

We have a heat shield that keeps our little driver from getting fried,

465

00:29:58,880 --> 00:30:02,880

and the wing created enough stability to get us a nice short flight.

466

00:30:02,880 --> 00:30:06,880

Now I think if we increase the length of the wing, we'll get more stability

467

00:30:06,880 --> 00:30:08,880

and maybe get a perfect trajectory.

468

00:30:16,880 --> 00:30:23,880

After days of experimentation, Adam and Jamie are finally ready to test the myth of the CSI stun gun.

469

00:30:24,880 --> 00:30:29,880

This fine specimen of manhood here will soon be our perp for our final test.

470

00:30:29,880 --> 00:30:33,880

Now in order to be a proper perp, I need him to have conductive skin.

471

00:30:33,880 --> 00:30:38,880

So I'm going to give him a layer of foam, and then I'm going to cover that foam with foil.

472

00:30:38,880 --> 00:30:44,880

And that foil will act as the conductive skin that hopefully will give us the spark to light our perp on fire.

473

00:30:46,880 --> 00:30:47,880

He's ready.

474

00:30:47,880 --> 00:30:52,880

And in hope of a blazing conclusion, it's back to Treasure Island.

475

00:30:52,880 --> 00:30:54,880

The methodology here is actually pretty simple.

476

00:30:54,880 --> 00:30:57,880

Our perp here is dressed in the latest fashion.

477

00:30:57,880 --> 00:30:59,880

The acrylic shirt that we found the most flammable.

478

00:30:59,880 --> 00:31:03,880

We are going to spray him down with the pepper spray we found the most flammable,

479

00:31:03,880 --> 00:31:07,880

just under four, and then I'm going to stand back with this stun gun

480

00:31:08,880 --> 00:31:12,880

and pop him right in the chest and see if he bursts into flames.

481

00:31:12,880 --> 00:31:13,880

Alright, stand clear.

482

00:31:14,880 --> 00:31:19,880

So confirming the myth of an instant massive fireball all comes down to this.

483

00:31:19,880 --> 00:31:24,880

Just like they did on CSI, Adam unloads for a good few seconds.

484

00:31:24,880 --> 00:31:25,880

Please!

485

00:31:28,880 --> 00:31:29,880

Hey!

486

00:31:30,880 --> 00:31:31,880

Dude!

487

00:31:31,880 --> 00:31:32,880

It's burning.

488

00:31:34,880 --> 00:31:36,880

I totally... wow!

489

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

It's totally burning!

490

00:31:39,880 --> 00:31:42,880

And we totally need the fire extinguisher.

491

00:31:45,880 --> 00:31:47,880

You have the right to not be on fire.

492

00:31:47,880 --> 00:31:51,880

Anything you burn, Canon, will be held against you in a court of law.

493

00:31:51,880 --> 00:31:54,880

But do we have the right to call this confirmed?

494

00:31:54,880 --> 00:31:58,880

Of course, it wasn't quite the big fireball that we saw on CSI.

495

00:32:00,880 --> 00:32:05,880

But this being Mythbusters, we're going to do our darndest to get one.

496

00:32:05,880 --> 00:32:11,880

So they postpone the judgment, discharging four whole cans on a backup acrylic shirt.

497

00:32:11,880 --> 00:32:12,880

Think that's enough?

498

00:32:12,880 --> 00:32:13,880

No.

499

00:32:15,880 --> 00:32:19,880

Just for good measure, Jamie almost doubles the dose.

500

00:32:21,880 --> 00:32:22,880

Alright.

501

00:32:24,880 --> 00:32:25,880

Freeze!

502

00:32:27,880 --> 00:32:28,880

Nice!

503

00:32:30,880 --> 00:32:31,880

Oh, yeah!

504

00:32:32,880 --> 00:32:36,880

Now that's really close to the human bonfire we saw on TV.

505

00:32:36,880 --> 00:32:37,880

There's your fireball.

506

00:32:40,880 --> 00:32:42,880

It's instantaneous, look at that.

507

00:32:43,880 --> 00:32:45,880

Yeah, you might as well lit it with a match.

508

00:32:45,880 --> 00:32:46,880

Unbelievable.

509

00:32:47,880 --> 00:32:53,880

It's a fabulous fireball, but in this case they did use an ocean of pepper spray.

510

00:32:55,880 --> 00:32:57,880

So how do we want to call this one?

511

00:32:57,880 --> 00:32:59,880

Well, let's do a little math.

512

00:32:59,880 --> 00:33:05,880

One acrylic shirt plus a can of flammable pepper spray plus one stun gun equals...

513

00:33:05,880 --> 00:33:06,880

Plausible.

514

00:33:06,880 --> 00:33:07,880

I agree.

515

00:33:07,880 --> 00:33:13,880

One acrylic shirt plus a stun gun plus a whole crop load of pepper spray equals...

516

00:33:13,880 --> 00:33:14,880

Gratuitous.

517

00:33:14,880 --> 00:33:16,880

That's our favorite four-syllable word.

518

00:33:16,880 --> 00:33:20,880

So the verdict on this myth is plausible, but we're not done yet.

519

00:33:20,880 --> 00:33:23,880

Jamie's determined to end with a serious spectacle.

520

00:33:23,880 --> 00:33:26,880

And believe me, you don't want to miss this.

521

00:33:35,880 --> 00:33:38,880

Okay, so we're back in the shop after our small-scale experiment.

522

00:33:38,880 --> 00:33:44,880

The myth that we're testing is that some crazy German thought it was a great idea to strap 400 fireworks to himself

523

00:33:44,880 --> 00:33:47,880

from himself off a ramp into a lake.

524

00:33:47,880 --> 00:33:52,880

So it is going to take 400 of our homemade skyrockets to launch our fireworks man.

525

00:33:52,880 --> 00:33:59,880

Now the big challenge of this design is to attach all 400 together and to get them to go off at the same exact time.

526

00:33:59,880 --> 00:34:05,880

And I'll be attaching a new and improved wing design which should help with the one flaw from my small-scale,

527

00:34:05,880 --> 00:34:07,880

which is spinning out of control.

528

00:34:09,880 --> 00:34:16,880

And they figured the best way to minimize friction on the ramp is to hook two skateboards up to a shiny, slippery metal rail.

529

00:34:17,880 --> 00:34:19,880

I can't stop.

530

00:34:21,880 --> 00:34:23,880

Are you okay?

531

00:34:23,880 --> 00:34:24,880

Yes.

532

00:34:24,880 --> 00:34:26,880

Dude, you gotta be careful.

533

00:34:27,880 --> 00:34:29,880

Now, why a skateboard, you ask?

534

00:34:29,880 --> 00:34:35,880

Well, this was clearly not some sort of highly engineered NASA law.

535

00:34:35,880 --> 00:34:38,880

So this is a guy that's trapped a bunch of fireworks to himself.

536

00:34:38,880 --> 00:34:41,880

And if you're in that mindset, what are you going to use?

537

00:34:41,880 --> 00:34:44,880

You're going to use some sort of fancy system?

538

00:34:44,880 --> 00:34:45,880

No.

539

00:34:45,880 --> 00:34:47,880

You're probably going to use a skateboard.

540

00:34:47,880 --> 00:34:50,880

Now for the sled, I came up with something interesting.

541

00:34:50,880 --> 00:34:51,880

A surfboard.

542

00:34:51,880 --> 00:34:53,880

It serves two purposes.

543

00:34:53,880 --> 00:34:54,880

For one, it's really light.

544

00:34:54,880 --> 00:34:57,880

It's not going to add a lot of weight to our contraption.

545

00:34:57,880 --> 00:35:02,880

And number two, we're launching hopefully all the way into a lake.

546

00:35:02,880 --> 00:35:06,880

And retrieving all of our rockets would be a pain in the butt if our whole thing sank.

547

00:35:06,880 --> 00:35:08,880

So it's made of styrofoam.

548

00:35:08,880 --> 00:35:10,880

This thing floats.

549

00:35:10,880 --> 00:35:14,880

So while the team gets very, very busy with the building,

550

00:35:14,880 --> 00:35:18,880

carry with these new wings, and grant with some stabilizing fins,

551

00:35:18,880 --> 00:35:20,880

Tori gets to play with fire.

552

00:35:20,880 --> 00:35:25,880

So I've removed the sticks from the skyrockets, and I've glued together banks of a hundred.

553

00:35:25,880 --> 00:35:31,880

Now that they're all glued together, what I'm going to do is cut grooves on the table saw through the nozzle area.

554

00:35:31,880 --> 00:35:35,880

That way, these grooves will be filled up with black powder.

555

00:35:35,880 --> 00:35:38,880

When I fill this whole thing up with black powder and ignite it,

556

00:35:38,880 --> 00:35:46,880

the flame will move through the grooves into the nozzles and ignite all of the rockets at the same exact time.

557

00:35:46,880 --> 00:35:51,880

And there's no time to test Tori's groove like the present.

558

00:35:51,880 --> 00:35:54,880

In three, two, one.

559

00:36:00,880 --> 00:36:02,880

That looks so synchronized.

560

00:36:05,880 --> 00:36:06,880

Wow.

561

00:36:06,880 --> 00:36:08,880

That looks synchronized.

562

00:36:08,880 --> 00:36:10,880

That is a beautiful ignition system.

563

00:36:10,880 --> 00:36:12,880

I see good things in our future.

564

00:36:12,880 --> 00:36:19,880

Back inside, the wings, the fins, and the skateboard rail are the key additions to a makeshift vehicle

565

00:36:19,880 --> 00:36:24,880

that just might launch a stand-in man 150 feet.

566

00:36:24,880 --> 00:36:27,880

And it's probably just as well he's missing the back of his head.

567

00:36:27,880 --> 00:36:34,880

Now if all of our calculations are correct, we should see this fireworks man fly up that ramp and across the lake.

568

00:36:34,880 --> 00:36:37,880

Or it's going to fail miserably and explode on the ramp.

569

00:36:44,880 --> 00:36:52,880

With the myth of the CSI stun gun wrapped up, the boys feel the need to go out in a totally gratuitous blaze of glory.

570

00:36:52,880 --> 00:36:55,880

Jamie left me this really cryptic message.

571

00:36:55,880 --> 00:37:00,880

We said only bring him a burnable perp and dress for a fire.

572

00:37:01,880 --> 00:37:04,880

I am, as they say, intrigued.

573

00:37:06,880 --> 00:37:13,880

Adam dresses his man in a fitting fashion and the shirt, as you've guessed, is the famous flat-o.

574

00:37:13,880 --> 00:37:16,880

Uh, are you red a little, buddy?

575

00:37:18,880 --> 00:37:23,880

This is actually the standard model of robot that are all of Grant's servants back at his castle.

576

00:37:30,880 --> 00:37:37,880

So the savage awaits the barbarian.

577

00:37:37,880 --> 00:37:43,880

And Jamie's weapon of choice is a vintage Vietnam-era gasoline flamethrower.

578

00:37:43,880 --> 00:37:45,880

Oh, hey, what do you got?

579

00:37:45,880 --> 00:37:47,880

Stand clear, I'm going hot.

580

00:37:47,880 --> 00:37:48,880

Okay.

581

00:37:48,880 --> 00:37:55,880

Long time viewers know that sometimes when a myth falls frustratingly short of confirmation,

582

00:37:55,880 --> 00:37:56,880

you see any bulls?

583

00:37:56,880 --> 00:37:58,880

I'm seeing it all.

584

00:37:58,880 --> 00:38:00,880

We like to, uh,

585

00:38:00,880 --> 00:38:01,880

fire!

586

00:38:01,880 --> 00:38:03,880

turn it up a notch or ten.

587

00:38:06,880 --> 00:38:11,880

Once again, Jamie's ready to skip the method and go straight for the mayhem.

588

00:38:11,880 --> 00:38:18,880

Three, two, one.

589

00:38:18,880 --> 00:38:23,880

There's no better way to unleash hell than a 60-foot flame.

590

00:38:23,880 --> 00:38:25,880

Ha ha ha ha ha ha!

591

00:38:25,880 --> 00:38:27,880

Nice!

592

00:38:27,880 --> 00:38:30,880

That's what I'm talking about.

593

00:38:30,880 --> 00:38:32,880

Ha ha ha ha ha!

594

00:38:32,880 --> 00:38:35,880

Very post-apocalyptic of you.

595

00:38:35,880 --> 00:38:37,880

Is that hot enough?

596

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

No.

597

00:38:38,880 --> 00:38:39,880

No.

598

00:38:39,880 --> 00:38:40,880

No.

599

00:38:40,880 --> 00:38:41,880

No.

600

00:38:41,880 --> 00:38:42,880

No.

601

00:38:42,880 --> 00:38:43,880

No.

602

00:38:43,880 --> 00:38:44,880

No.

603

00:38:44,880 --> 00:38:45,880

No.

604

00:38:45,880 --> 00:38:46,880

No.

605

00:38:46,880 --> 00:38:47,880

No.

606

00:38:47,880 --> 00:38:48,880

No.

607

00:38:48,880 --> 00:38:49,880

No.

608

00:38:49,880 --> 00:38:50,880

No.

609

00:38:50,880 --> 00:38:51,880

No.

610

00:38:51,880 --> 00:38:52,880

No.

611

00:38:52,880 --> 00:38:53,880

No.

612

00:38:53,880 --> 00:38:54,880

No.

613

00:38:54,880 --> 00:38:55,880

No.

614

00:38:55,880 --> 00:38:56,880

No.

615

00:38:56,880 --> 00:38:57,880

No.

616

00:38:57,880 --> 00:38:58,880

Is that hot enough for ya?

617

00:38:58,880 --> 00:39:01,880

Well that was only ever gonna end one way.

618

00:39:01,880 --> 00:39:05,880

And thanks to a \$5 shirt, you've got a million-dollar memory.

619

00:39:05,880 --> 00:39:23,320

Any kid who's ever read a comic book has surely dreamed of personal rocket propulsion.

620

00:39:23,320 --> 00:39:29,920

According to fans, one man actually flew 150 feet with skyrockets, so we had to see for

621

00:39:29,920 --> 00:39:30,920

ourselves.

622

00:39:30,920 --> 00:39:36,120

We studied the physics, built the best amateur rig we could, and found a flooded quarry for

623

00:39:36,120 --> 00:39:37,120

the crash landing.

624

00:39:37,120 --> 00:39:40,000

This place is cool!

625

00:39:40,000 --> 00:39:41,320

Woo!

626

00:39:41,320 --> 00:39:43,680

Already dangerous!

627

00:39:43,680 --> 00:39:48,640

So, if our math is correct and our fireworks do what they're supposed to, we should get

628

00:39:48,640 --> 00:39:51,640

a man landing in the lake anytime now.

629

00:39:51,640 --> 00:39:52,640

Ooh, nice!

630

00:39:52,640 --> 00:39:58,440

He's got two, not exploded in the launch pad, have a stable flight, and, according to the

631

00:39:58,440 --> 00:40:02,120

math, fly at least 150 feet.

632

00:40:02,120 --> 00:40:03,680

I hope he does it.

633

00:40:03,680 --> 00:40:06,080

Now to check on correct starting length.

634

00:40:06,080 --> 00:40:09,440

Alright, how much do we weigh?

635

00:40:09,440 --> 00:40:11,080

Okay, 183.

636

00:40:11,080 --> 00:40:15,160

Well, the sled weighs 60, so that makes him 243.

637

00:40:15,160 --> 00:40:16,160

That's perfect.

638

00:40:16,160 --> 00:40:18,160

That's exactly around what we need.

639

00:40:18,160 --> 00:40:19,160

Alright.

640

00:40:19,160 --> 00:40:20,160

Load them up!

641

00:40:20,160 --> 00:40:22,800

Let's do this!

642

00:40:22,800 --> 00:40:28,280

From Grand Fit skateboards to rails for a hopefully friction-free ride.

643

00:40:28,280 --> 00:40:34,600

While Tori sets the charge to ignite every last one of those 400 rockets, fingers crossed,

644

00:40:34,600 --> 00:40:35,840

they will launch together.

645

00:40:35,840 --> 00:40:39,600

Now, I know this might not seem like a lot of black powder, but I'm actually using six

646

00:40:39,600 --> 00:40:40,600

ounces.

647

00:40:40,600 --> 00:40:44,320

I mean, that would be plenty to fire off a cannonball.

648

00:40:44,320 --> 00:40:49,360

So the fuses are fixed, and the very last bits of the puzzle slide neatly enough into

649

00:40:49,360 --> 00:40:50,360

place.

650

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

I like a surgeon with that thing.

651

00:40:52,360 --> 00:40:56,160

Do you guys realize this is a dream come true?

652

00:40:56,160 --> 00:40:57,160

I think for all of us.

653

00:40:57,160 --> 00:40:58,960

It's a thing of beauty.

654

00:40:58,960 --> 00:41:03,520

But let's remember that fireworks man still has a hell of a lot to live up to.

655

00:41:03,520 --> 00:41:06,280

For this myth to be possible, we need two things to happen.

656

00:41:06,280 --> 00:41:10,560

One, we need Buster to launch off that ramp and hit the water.

657

00:41:10,560 --> 00:41:16,200

And two, we need him to not be a burning, massive, melting Buster.

658

00:41:16,200 --> 00:41:19,600

You can bet your bionic britches that Buster's in full agreement.

659

00:41:19,800 --> 00:41:21,800

We're all wired up, ready to go.

660

00:41:23,800 --> 00:41:28,800

This is fireworks man in three, two, one.

661

00:41:40,800 --> 00:41:41,800

We've got to launch!

662

00:41:41,800 --> 00:41:42,800

I'm still going!

663

00:41:43,000 --> 00:41:50,000

From the shore, it's a dazzling display of smoke and sparkles.

664

00:41:50,000 --> 00:41:52,000

I just put yourself in roster shoes.

665

00:41:59,000 --> 00:42:01,000

It was looking so good.

666

00:42:01,000 --> 00:42:02,000

We've got a perfect launch.

667

00:42:02,000 --> 00:42:05,400

He was going up the ramp, he gets on top of the ramp.

668

00:42:05,400 --> 00:42:08,000

And that's where everything goes all wrong.

669

00:42:09,000 --> 00:42:14,000

In fact, it's the good, the bad, the ugly and the awesome.

670

00:42:14,000 --> 00:42:17,000

All in one amazing launch.

671

00:42:17,000 --> 00:42:25,000

As Buster gets dragged from the drink, it's time to reflect on what worked and what didn't.

672

00:42:25,000 --> 00:42:31,000

So we got simultaneous ignition, we used actual fireworks, he made it off the ramp and into the water.

673

00:42:31,000 --> 00:42:36,000

Yeah and on top of that, he didn't catch on fire or explode, which means he would have survived the launch.

674

00:42:36,000 --> 00:42:39,000

We might have survived the launch, but I'm not so sure about the landing.

675

00:42:39,000 --> 00:42:41,000

And we didn't fulfill all the criteria of the myth.

676

00:42:41,000 --> 00:42:44,000

I mean, he did not go the 150 feet we talked about.

677

00:42:44,000 --> 00:42:47,000

It's one of the toughest decisions they've ever been faced with.

678

00:42:47,000 --> 00:42:53,000

On the one hand, it was really only those loose legs tipping the sled backwards that spoiled the party.

679

00:42:53,000 --> 00:42:57,000

On the other hand, Buster only flew 30 feet.

680

00:42:57,000 --> 00:43:03,000

And there's no doubt that the yahoo and the myth went away less trouble than we did, with far fewer resources.

681

00:43:03,000 --> 00:43:07,000

So with regret, that's where we're drawing the line.

682

00:43:07,000 --> 00:43:10,000

So I think we're still going to have to call this one Busted.

683

00:43:10,000 --> 00:43:11,000

Alright, Busted.

684

00:43:11,000 --> 00:43:12,000

Busted.

685

00:43:12,000 --> 00:43:14,000

But man, what a way to bust a myth.

686

00:43:14,000 --> 00:43:15,000

Right?