

1

00:00:00,000 --> 00:00:04,420

Give us a break.

2

00:00:04,420 --> 00:00:07,000

Don't try what you're about to see at home.

3

00:00:07,000 --> 00:00:20,760

On this episode of MythBusters, Adam and Jamie shed some light and heat on the Hindenburg

4

00:00:20,760 --> 00:00:23,080

disaster.

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00:00:23,080 --> 00:00:27,080

Was the inferno caused by chemicals painted onto its skin?

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00:00:27,080 --> 00:00:28,880

That was totally amazing.

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

From zeppelins to zigzags.

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

No, the crocodile.

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

Is a crooked run the best way to confound a ravenous reptile?

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00:00:38,880 --> 00:00:45,880

Who are the MythBusters?

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

Adam Savage.

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00:00:46,880 --> 00:00:48,880

Is everybody ready for diving?

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

Jamie Heinemann.

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

It's me all worked up just looking at it.

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

That was beautiful.

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

Between them more than 30 years special effects experience.

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

That was heavy.

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

Joining them, Grant Imahara.

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

You feeling lucky, punk?

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00:01:02,880 --> 00:01:03,880

Tori Belichi.

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00:01:03,880 --> 00:01:05,880

Somebody order some exploding pants.

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00:01:05,880 --> 00:01:07,880

And Carrie Byron.

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

Picazzo!

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00:01:08,880 --> 00:01:11,880

They don't just tell the myths.

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00:01:11,880 --> 00:01:14,880

They put them to the test.

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00:01:27,880 --> 00:01:28,880

So what's the myth?

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00:01:28,880 --> 00:01:37,880

The myth today has to do with the cause of the Hindenburg disaster.

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00:01:37,880 --> 00:01:39,880

May 6th, 1937.

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00:01:39,880 --> 00:01:43,880

One of the darkest days in aviation history.

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00:01:43,880 --> 00:01:50,880

The giant German zeppelin Hindenburg with 97 people on board hovers over New York City.

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00:01:50,880 --> 00:01:56,880

That evening, as it comes into land at Lakehurst Naval Air Station, the airship suddenly bursts

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00:01:56,880 --> 00:01:58,880

and it's changed.

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00:01:58,880 --> 00:02:00,880

Oh man, you manned it all up there.

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

Thirty-six people die in the inferno.

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00:02:03,880 --> 00:02:09,880

History's largest airship is reduced to ashes in just 34 seconds.

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00:02:09,880 --> 00:02:14,880

And an unforgettable image is burned into the memory.

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00:02:14,880 --> 00:02:21,880

Doesn't everybody know that that was caused by the hydrogen, which is the reason they don't fill blimps with hydrogen anymore?

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00:02:21,880 --> 00:02:22,880

Not according to our myth.

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00:02:22,880 --> 00:02:29,880

Our myth states that the cause of the Hindenburg disaster was its skin, specifically the dope and paint on its skin.

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00:02:29,880 --> 00:02:32,880

This myth is not just wild internet speculation.

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00:02:32,880 --> 00:02:39,880

The incendiary paint theory was actually put forward by a retired NASA scientist, Dr. Addison Bain.

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00:02:39,880 --> 00:02:49,880

After studying fragments of the Hindenburg's hull, Bain cleared hydrogen as the cause of the blaze, blaming instead the airship's metal-based paint.

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00:02:49,880 --> 00:02:52,880

It's a myth Adam and Jamie were born to bust.

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00:02:52,880 --> 00:02:59,880

They're going to turn up the heat, do the rottomy, and put the paint theory to the ultimate test.

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00:02:59,880 --> 00:03:07,880

In a world first, they'll build scale model Hindenburgs, cover them with a paint identical to that used on the giant blimp,

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00:03:07,880 --> 00:03:12,880

and find an answer to aviation's burning question once and for all.

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00:03:12,880 --> 00:03:15,880

This is my favorite scale experiment we've ever done.

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00:03:15,880 --> 00:03:17,880

Full stop.

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00:03:17,880 --> 00:03:19,880

Okay, well where do we start?

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00:03:19,880 --> 00:03:23,880

Well, since the myth is about the skin, I think that's where we should start.

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00:03:23,880 --> 00:03:26,880

We should find out exactly the type of fabric that was used,

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00:03:26,880 --> 00:03:32,880

and exactly what that fabric was coated with, and replicate the skin in the shop, and see how it burns.

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00:03:32,880 --> 00:03:33,880

Okay.

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00:03:33,880 --> 00:03:41,880

The Hindenburg skin was 100% cotton, treated with a kind of paint, or dope as it's known in the trade,

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00:03:41,880 --> 00:03:43,880

which made the fabric taut and waterproof.

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00:03:43,880 --> 00:03:48,880

The dope's ingredients included aluminum powder and iron oxide.

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00:03:48,880 --> 00:03:54,880

Put them together, and they produce an extraordinarily explosive substance called thermite.

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00:03:54,880 --> 00:03:58,880

Adam's keen to demonstrate, he's going to whip up a batch of thermite.

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00:03:58,880 --> 00:04:04,880

For this cooking lesson, Adam will need the fire suit, and its safety masks all around.

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

So, just like gumbo night at Adam's.

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00:04:09,880 --> 00:04:16,880

Take a cast iron skillet, add the aluminum powder and iron oxide, combine well.

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00:04:16,880 --> 00:04:19,880

Thing is, they won't ignite by themselves.

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00:04:19,880 --> 00:04:24,880

To get a thermite reaction, you need to add one or two secret ingredients.

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00:04:24,880 --> 00:04:27,880

This ingredient is made of blur.

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00:04:27,880 --> 00:04:30,880

And this has some blur in it too.

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00:04:30,880 --> 00:04:35,880

Blur is very dangerous, you don't want to mix blur with blur.

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00:04:35,880 --> 00:04:40,880

Add the mysterious mixture to the pan, and retire immediately.

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00:04:40,880 --> 00:04:48,880

It takes a few seconds for the ingredients to react, then suddenly you're cooking, on a very high heat.

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00:04:48,880 --> 00:04:52,880

4500 degrees in fact.

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00:04:52,880 --> 00:04:54,880

Wow!

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00:04:54,880 --> 00:05:02,880

So we've seen thermite in action, and we know that the Hindenburg skin was coated with the compounds that create thermite.

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00:05:02,880 --> 00:05:05,880

So, that's a check mark for the myth.

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

The question now is, will they do that in a dope solution?

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00:05:09,880 --> 00:05:12,880

So I think it's time to test the fabric samples.

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00:05:12,880 --> 00:05:16,880

Now the Hindenburg didn't have the same dope solution all over.

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00:05:16,880 --> 00:05:20,880

The lower half had three coats of dope containing aluminum powder.

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00:05:20,880 --> 00:05:28,880

The upper half had the thermite mix, a base coat of butyrate and iron oxide, then three coats of butyrate and aluminum.

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00:05:28,880 --> 00:05:36,880

Here's what I'm wondering, if aluminum powder and iron oxide are so dangerous, why use those two components to coat the Hindenburg skin?

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00:05:36,880 --> 00:05:46,880

Well, they figured that was the best combination to reflect both heat and light from the delicate inner bladders that held the hydrogen.

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00:05:46,880 --> 00:05:51,880

Good enough for me!

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00:05:51,880 --> 00:05:58,880

Jamie prepares panels using cotton and aluminum frames that match the material used on the Hindenburg.

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00:05:58,880 --> 00:06:07,880

On one panel, the fabric's left raw, the second is painted to match the bottom of the Hindenburg, and the third has the same dope mix as the top half.

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00:06:07,880 --> 00:06:12,880

This is basically to find out if the dope has any influence on the speed of burn.

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00:06:12,880 --> 00:06:18,880

So we'll start out with a raw piece of fabric, see how fast that burns, and then compare that to the other concentrations we have.

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00:06:18,880 --> 00:06:24,880

Adam sets fire to the untreated cotton. It doesn't so much burn as smolder.

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00:06:24,880 --> 00:06:27,880

If we don't have high speed on this, we need a time lapse.

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00:06:27,880 --> 00:06:30,880

Anything you say, Adam.

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00:06:30,880 --> 00:06:32,880

Five minutes and 25 seconds.

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00:06:32,880 --> 00:06:34,880

That's not very fast.

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00:06:34,880 --> 00:06:37,880

That took almost ten times longer than the Hindenburg took to burn.

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

The entire Hindenburg.

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

Okay, we've got our control. Time for the first dope test.

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00:06:43,880 --> 00:06:46,880

Bottom of the Hindenburg, plain dope with three coats of aluminum.

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00:06:46,880 --> 00:06:48,880

Yeah, you ready?

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00:06:48,880 --> 00:06:50,880

I'm ready.

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00:06:50,880 --> 00:06:53,880

Go.

97

00:06:53,880 --> 00:06:55,880

It's not a cajom.

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00:06:55,880 --> 00:07:00,880

The Hindenburg was 800 feet long and the whole thing burned in less than a minute.

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

Remember, there's no chance of a thermite reaction here because there's no iron oxide in the dope.

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00:07:06,880 --> 00:07:08,880

What was the time on that one?

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00:07:08,880 --> 00:07:10,880

Two minutes, 26 seconds.

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00:07:11,880 --> 00:07:14,880

The bottom sample burned twice as fast as the raw fabric,

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00:07:14,880 --> 00:07:21,880

which makes it pretty clear that there is a factor in the coating that has to do with how fast this thing burns.

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00:07:21,880 --> 00:07:25,880

Next, the dope that was on the Hindenburg's upper half.

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00:07:25,880 --> 00:07:30,880

This is the potential thermite mix. Will there be a reaction?

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00:07:30,880 --> 00:07:34,880

Still ahead, the croc zigzag myth has the guys on the run.

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00:07:34,880 --> 00:07:36,880

What is that? Was a mouse chasing you?

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00:07:36,880 --> 00:07:40,880

And up next, Adam becomes Jumpin' Jack Flash.

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00:07:42,880 --> 00:07:44,880

It's gas, gas, gas.

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00:07:44,880 --> 00:07:46,880

Everybody okay?

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00:07:53,880 --> 00:07:55,880

Alright you guys, get ready for this one.

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00:07:55,880 --> 00:07:57,880

Crocodile myth.

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

Is it that they live in the serious?

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

No.

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

Is it that crocodiles have tears?

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00:08:02,880 --> 00:08:09,880

Oh no. This one is. If you're getting chased by a crocodile, you can easily escape it by running in a zigzag pattern,

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00:08:09,880 --> 00:08:11,880

because they cannot turn corners.

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00:08:11,880 --> 00:08:16,880

In the water, the crocodile is a lightning quick ambush predator.

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00:08:16,880 --> 00:08:24,880

In that explosive split second when they strike, crocodile lunges have been clocked at around 30 miles an hour.

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00:08:24,880 --> 00:08:26,880

Lunging is one thing.

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00:08:26,880 --> 00:08:28,880

Running is another.

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00:08:28,880 --> 00:08:33,880

According to the myth, if you're being chased by a crocodile, all you have to do is run in a zigzag,

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

because their long bodies and short legs cannot make sharp turns.

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00:08:38,880 --> 00:08:44,880

The plan is to dangle a dummy from a remote controlled trolley, which moves from side to side.

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00:08:44,880 --> 00:08:47,880

The trolley in turn will be suspended from a steel track.

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00:08:47,880 --> 00:08:53,880

As the trolley is pulled along the track, those juicy meat legs will zigzag.

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00:08:53,880 --> 00:08:56,880

Then they'll take the rig to a croc farm,

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00:08:56,880 --> 00:08:59,880

and see if they can make some reptiles run.

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00:08:59,880 --> 00:09:04,880

But this time, believe it or not, Buster's off the hook.

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00:09:04,880 --> 00:09:08,880

The rig that we're going to have to put up is going to be suspended.

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00:09:08,880 --> 00:09:11,880

Therefore, my Buster needs to be really, really lightweight.

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00:09:11,880 --> 00:09:17,880

I'm going to make him entirely out of foam for a torso, and then I might have a little surprise for his legs.

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00:09:17,880 --> 00:09:22,880

Soon a new foam Buster is rising like a cake in an oven.

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00:09:27,880 --> 00:09:32,880

As you can see, he's very light, and it's not going to put a whole lot of strain on the rig.

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00:09:32,880 --> 00:09:39,880

This new lightweight Buster hasn't got a leg to stand on, but Keri has a pair of meat legs all mapped out.

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00:09:39,880 --> 00:09:40,880

What are these?

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00:09:40,880 --> 00:09:42,880

They're fishnet stockings.

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

He'll be wearing fishnet stockings.

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00:09:44,880 --> 00:09:47,880

Give me all your cash!

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00:09:47,880 --> 00:09:50,880

And they'll be stuffed with quail.

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00:09:50,880 --> 00:09:55,880

But these are not like any frozen bird you might find in your supermarket.

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00:09:55,880 --> 00:09:59,880

Oh, see, I can't do this.

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00:09:59,880 --> 00:10:00,880

They've got feathers on them still.

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

I can't do this.

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00:10:01,880 --> 00:10:03,880

You know what, they're not even gutted.

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00:10:25,880 --> 00:10:27,880

No thermite reaction.

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00:10:27,880 --> 00:10:29,880

No intense heat.

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00:10:29,880 --> 00:10:33,880

In fact, it takes five and a half minutes for the panel to be consumed.

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00:10:33,880 --> 00:10:37,880

That's almost twice as long as the aluminum coated cotton.

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00:10:37,880 --> 00:10:40,880

It's almost identical to the cloth by itself.

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00:10:40,880 --> 00:10:43,880

Wow.

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00:10:43,880 --> 00:10:44,880

Hang on, guys.

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00:10:44,880 --> 00:10:46,880

Don't write off this myth yet.

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00:10:46,880 --> 00:10:48,880

That was one little panel.

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00:10:48,880 --> 00:10:52,880

The Hindenburg was covered in thousands of square feet of material.

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00:10:52,880 --> 00:10:56,880

Could there be a better boom on a bigger scale?

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00:10:56,880 --> 00:11:01,880

I mean, maybe there's some crazy amount that could yield an energetic reaction, but it's not this amount.

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00:11:01,880 --> 00:11:07,880

Obviously, the Hindenburg's designers didn't set out to coat their creation in rocket fuel.

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00:11:07,880 --> 00:11:13,880

Those who pan the paint theory say the aluminum and iron oxide couldn't afford to be used.

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

Because the compounds weren't mixed that way.

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00:11:16,880 --> 00:11:19,880

The recipe was completely different.

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00:11:19,880 --> 00:11:21,880

So that's got the mythbusters curious.

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00:11:21,880 --> 00:11:25,880

What would happen if you did paint pure thermite on the skin?

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00:11:25,880 --> 00:11:32,880

It's more like a paste than a paint, but I think we can smear it on.

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00:11:32,880 --> 00:11:36,880

Next up, whoa, mechadope.

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00:11:36,880 --> 00:11:39,880

This is just total worst-case scenario.

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00:11:39,880 --> 00:11:43,880

Can you actually make thermite in a dope formulation?

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

Be careful when you light it.

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00:11:45,880 --> 00:11:47,880

Adam ignites the panel.

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00:11:47,880 --> 00:11:49,880

Time it.

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00:11:51,880 --> 00:11:55,880

Not exactly the pyrotechnic display we might have expected.

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00:11:55,880 --> 00:11:59,880

They start discussing Plan B when suddenly...

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00:11:59,880 --> 00:12:02,880

Oh!

174

00:12:02,880 --> 00:12:04,880

Deuteronomy!

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00:12:04,880 --> 00:12:06,880

Okay, wait.

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00:12:06,880 --> 00:12:09,880

Well, that's thermite.

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00:12:09,880 --> 00:12:11,880

You got that right.

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

Wow!

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

Once the mechadope ignited, the panel was consumed in just 20 seconds.

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00:12:17,880 --> 00:12:19,880

That was dramatically different.

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00:12:19,880 --> 00:12:21,880

That was totally amazing.

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00:12:21,880 --> 00:12:27,880

Well, I'll tell you, that's the first evidence I've seen yet that there might actually be something to this myth.

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00:12:27,880 --> 00:12:31,880

Because that's the kind of thing that's going to be a problem.

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00:12:31,880 --> 00:12:34,880

This was not what was on the Hindenburg.

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00:12:34,880 --> 00:12:38,880

We have to make that clear, because this was just over the top crazy.

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00:12:38,880 --> 00:12:41,880

The concentration of thermite in there was...

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00:12:41,880 --> 00:12:46,880

Thermite to dope was maybe like 75% thermite.

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00:12:46,880 --> 00:12:52,880

And they wouldn't have, in any stretch of the imagination, coated the Hindenburg with something like that.

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00:12:55,880 --> 00:12:58,880

So, burn the skin side of the mechadope.

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00:12:59,880 --> 00:13:06,880

So, burn the skin samples, but you know, the Hindenburg was filled with 200,000 cubic meters of hydrogen.

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00:13:06,880 --> 00:13:11,880

Well, let's burn some skin in the presence of hydrogen, see what it does.

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

The newsreel shows the Hindenburg engulfed by fire.

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00:13:15,880 --> 00:13:20,880

Yet high school science tells us hydrogen burns with a near invisible flame.

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00:13:20,880 --> 00:13:23,880

So, what are we seeing in the disaster footage?

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00:13:23,880 --> 00:13:26,880

Is it the skin burning and not the gas?

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00:13:26,880 --> 00:13:30,880

Adam will burn some hydrogen to see what the flame looks like.

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00:13:30,880 --> 00:13:37,880

He takes a cylinder of 100% pure hydrogen and makes an enormous Bunsen burner.

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00:13:37,880 --> 00:13:39,880

That's an orange burn, baby.

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00:13:39,880 --> 00:13:43,880

The hydrogen definitely burns orange, but it is extremely low visibility.

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00:13:43,880 --> 00:13:47,880

In contrast to the newsreel footage in which the flame is clearly visible.

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

Now, I've witnessed a set it burned orange, but it's a lot more visible than this was.

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00:13:51,880 --> 00:13:55,880

One thing's for sure, hydrogen burns like nobody's business.

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00:13:55,880 --> 00:13:58,880

So, it does sort of beg the question.

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00:13:58,880 --> 00:14:04,880

You know, I don't understand why if it's so flammable, they filled the Hindenburg with hydrogen in the first place.

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00:14:04,880 --> 00:14:08,880

Well, the Hindenburg was originally intended to be filled with helium,

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00:14:08,880 --> 00:14:13,880

but a United States military embargo against the Germans and selling them helium

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00:14:13,880 --> 00:14:17,880

caused the Germans to re-engineer the Hindenburg to use hydrogen instead.

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00:14:17,880 --> 00:14:20,880

And in any case, it gave more lift.

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00:14:20,880 --> 00:14:22,880

Okay, so what do we do now?

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00:14:22,880 --> 00:14:30,880

The Hindenburg was filled with 200,000 cubic feet of hydrogen, which burns like this.

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00:14:30,880 --> 00:14:33,880

That's an orange burn, baby.

212

00:14:33,880 --> 00:14:39,880

And its skin was covered in chemicals which, in the correct concentrations, burn like this.

213

00:14:39,880 --> 00:14:43,880

Deuteronomy! Wow!

214

00:14:43,880 --> 00:14:48,880

So what happens when gas and skin burn together?

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00:14:48,880 --> 00:14:53,880

To find out, Adam builds a box and stretches some fabric over the top.

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00:14:53,880 --> 00:15:00,880

The dope-covered fabric that I've got covering this box for this test represents the top half of the Hindenburg.

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

It is a layer of butyrate dope and iron oxide covered with three layers of butyrate dope and aluminum powder.

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00:15:07,880 --> 00:15:09,880

Ladies and germs, here we go.

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

Hydrogen is pumped into the box, and Adam introduces a naked flame.

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

Oh!

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00:15:18,880 --> 00:15:23,880

Okay! Is everybody okay?

222

00:15:23,880 --> 00:15:26,880

Fresh underwear for Mr. Savage, please.

223

00:15:26,880 --> 00:15:34,880

Because the volume of gas inside the box was only small, the reaction was quick and violent.

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00:15:34,880 --> 00:15:42,880

To have skin and gas actually burn rather than go bang, the hydrogen will have to be diffused over a larger area.

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00:15:42,880 --> 00:15:49,880

We want a slow burn. We want to see the fabric burning with the hydrogen. We don't just want an explosion here.

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00:15:49,880 --> 00:15:57,880

Time for Adam and Jamie to start thinking outside the box and take their Hindenburg hijinks large scale.

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00:15:57,880 --> 00:16:03,880

Still to come, the great Hindenburg experiment, almost up in smoke before it starts.

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00:16:03,880 --> 00:16:06,880

That is the textbook definition of irony, kids.

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00:16:06,880 --> 00:16:12,880

And next, can you get away from a crocodile by running zigzag?

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00:16:14,880 --> 00:16:20,880

According to the myth, outrunning a crocodile is not straightforward. It's a zigzag.

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00:16:20,880 --> 00:16:27,880

Carries foam and fishnet, Buster Bait is ready. Meanwhile, Tari's got the crock rig on track.

232

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

So I have my two inch steel tube. This is going to be our track that's going to go over the crocodiles.

233

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

And so now what I'm going to do is build the trolley. And the trolley will carry the dummy along that run and the crocodile will have something to chase.

234

00:16:42,880 --> 00:16:46,880

Next, the zigzag rig has to be calibrated for human speed.

235

00:16:46,880 --> 00:16:59,880

So what we're going to do is lay out a grid on the floor of our shop, take a shot from overhead and just run a bunch of zigzags and see what the best time is.

236

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

The grid is made up of 12 inch squares. It's 12 feet long and 9 feet wide.

237

00:17:09,880 --> 00:17:12,880

The question is, what constitutes a zigzag?

238

00:17:12,880 --> 00:17:18,880

Well, I'm pretty sure that the essence of this myth comes from the fact that they have those long rigid bodies.

239

00:17:18,880 --> 00:17:24,880

So it's not sort of like a weird hopping thing like they're snapping and you're just jumping, but it's more of a...

240

00:17:25,880 --> 00:17:31,880

So you're going to try and hit the corners as fast as you can rather than like hopscotch jumping.

241

00:17:31,880 --> 00:17:32,880

Yeah.

242

00:17:37,880 --> 00:17:40,880

What the heck was that?

243

00:17:40,880 --> 00:17:44,880

One by one, the guys run a series of zigzags across the grid.

244

00:17:48,880 --> 00:17:51,880

What I was trying to do is actually maximize the side to side.

245

00:17:55,880 --> 00:18:00,880

What it may have saved your life due to the fact that that crocodile right now is in a belly laugh.

246

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

He can't even move. He's like cramping.

247

00:18:02,880 --> 00:18:05,880

Then Grant studies the high speed footage.

248

00:18:05,880 --> 00:18:13,880

By counting how many frames it takes to move across one square on the grid, he can time each rut and come up with an average speed.

249

00:18:13,880 --> 00:18:16,880

And it is very average.

250

00:18:16,880 --> 00:18:29,880

The average speed in the X direction, which is the long direction that you're going to be handling, is 7.6 feet per second.

251

00:18:29,880 --> 00:18:32,880

That works out to be only five miles per hour.

252

00:18:32,880 --> 00:18:36,880

Some crots have been clocked running at more than twice that speed.

253

00:18:36,880 --> 00:18:40,880

So will our cross-dressing dummy be fast enough to escape?

254

00:18:40,880 --> 00:18:43,880

Time to see what this crock-rig can do.

255

00:18:46,880 --> 00:18:49,880

Yay!

256

00:18:49,880 --> 00:18:53,880

That weird buster-rig is actually working really, really good.

257

00:18:53,880 --> 00:18:55,880

Hey, nice meat legs by the way.

258

00:18:55,880 --> 00:18:57,880

Where are we going to get some crocs?

259

00:18:57,880 --> 00:18:59,880

Clearly there aren't any around here.

260

00:18:59,880 --> 00:19:03,880

The only place we're going to be able to get crocodiles to chase us is going to be in Florida.

261

00:19:03,880 --> 00:19:04,880

So pack your bags.

262

00:19:04,880 --> 00:19:05,880

Field trip!

263

00:19:07,880 --> 00:19:09,880

It's time to crock and roll.

264

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

Is Florida here we come?

265

00:19:10,880 --> 00:19:11,880

Here we go.

266

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

Later, Tari has to come to grips with his new role, wrestling crocs.

267

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

You'll actually tape the jaw shut too.

268

00:19:22,880 --> 00:19:24,880

It's no longer able to bite us.

269

00:19:24,880 --> 00:19:25,880

What?

270

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

And after the break, Adam and Jamie's glim-building business is cooking.

271

00:19:29,880 --> 00:19:32,880

These things are always catching on fire.

272

00:19:47,880 --> 00:19:54,880

Adam and Jamie are on the case, but so far their Hindenburg investigations have been hindered by scale.

273

00:19:54,880 --> 00:19:58,880

Well, the small scale just isn't doing it for answering all these questions that we've got.

274

00:19:58,880 --> 00:20:02,880

We have to go bigger scale, but we can't possibly go full scale.

275

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

How big do you think we can go?

276

00:20:04,880 --> 00:20:06,880

I don't know, like 10, 12 feet?

277

00:20:06,880 --> 00:20:09,880

Well, if we go 16 feet, that's 1.50th scale.

278

00:20:09,880 --> 00:20:10,880

It's a nice round number.

279

00:20:10,880 --> 00:20:11,880

You think we can do that?

280

00:20:11,880 --> 00:20:14,880

This should solve the mystery once and for all.

281

00:20:14,880 --> 00:20:21,880

They'll build two 16-foot Hindenburg scale models and coat them with the aluminum iron oxide paint.

282

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

One will be full of air, the other hydrogen.

283

00:20:25,880 --> 00:20:31,880

And if the hydrogen Hindenburg burns faster, then this blimp myth is busted.

284

00:20:31,880 --> 00:20:33,880

Okay, everyone happy?

285

00:20:33,880 --> 00:20:34,880

Not quite.

286

00:20:34,880 --> 00:20:36,880

I think we need to do a third one as well.

287

00:20:36,880 --> 00:20:40,880

I mean, one that guarantees a thermite reaction.

288

00:20:40,880 --> 00:20:41,880

All right, so three blimps it is.

289

00:20:41,880 --> 00:20:43,880

I think we can do it.

290

00:20:43,880 --> 00:20:51,880

That third blimp burn will show what would happen if someone was crazy enough to paint their airship with pure thermite.

291

00:20:56,880 --> 00:21:01,880

To help with the build, Adam unearthed some blueprints of the real Hindenburg.

292

00:21:02,880 --> 00:21:09,880

To match the original airship, the replicas will need aluminum frames, so Jamie's off to get wired.

293

00:21:09,880 --> 00:21:16,880

We've come to a wire stock place and they have just about every kind of gauge of steel wire that we need.

294

00:21:16,880 --> 00:21:17,880

I'm going to buy some.

295

00:21:19,880 --> 00:21:25,880

The wire will have to be thin to keep the models lightweight, yet strong enough to prevent buckling.

296

00:21:25,880 --> 00:21:28,880

The last thing they want is a limp blimp.

297

00:21:28,880 --> 00:21:33,880

I've picked a wire gauge that is, I think, just thick enough for us to weld.

298

00:21:33,880 --> 00:21:38,880

And otherwise, the frame, when we're done with it, may only weigh maybe 10 or 15 pounds.

299

00:21:38,880 --> 00:21:43,880

Back at Hindenburg headquarters, Adam and Mithern Jess Nelson are hard at work.

300

00:21:44,880 --> 00:21:51,880

Behind me here, this fishbone is the guide backbone for all the concentric rings that make up the body of the Hindenburg.

301

00:21:51,880 --> 00:21:59,880

And then we will, once we have that laid out with all the rings on it, we will go in and weld all the long struts and then we'll do it again.

302

00:21:59,880 --> 00:22:02,880

And then when we're done with that, we'll do it again.

303

00:22:09,880 --> 00:22:16,880

By following the original Hindenburg blueprints, the Mythbusters soon have their own mini Hindenburg taking shape.

304

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

Look at that! That is very, very cool.

305

00:22:23,880 --> 00:22:26,880

It weighs maybe about 10 pounds of that.

306

00:22:27,880 --> 00:22:31,880

Okay, enough with the horseplay. We need another two Hindenburgs pronto.

307

00:22:39,880 --> 00:22:44,880

You want three Zeppelins in a day? We'll give you three Zeppelins in a day.

308

00:22:44,880 --> 00:22:48,880

The frames need cotton skins. Adam soon has that all sewn up.

309

00:22:49,880 --> 00:22:54,880

Everything's going smoothly until Jamie opts for a spot of last-minute welding.

310

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

And suddenly, the model is looking disturbingly like the real Hindenburg.

311

00:23:01,880 --> 00:23:04,880

These things are always catching on fire.

312

00:23:05,880 --> 00:23:09,880

The last thing they have to do is apply the dope and the models are complete.

313

00:23:09,880 --> 00:23:13,880

Now the Mythbusters are ready to crack this case once and for all.

314

00:23:14,880 --> 00:23:18,880

Next up on Discovery, the world's deadliest piñata.

315

00:23:26,880 --> 00:23:29,880

Can you escape a crocodile by jumping into the water?

316

00:23:30,880 --> 00:23:32,880

Or by running in a zigzag?

317

00:23:32,880 --> 00:23:38,880

To find out, Carri-Torian Grant have harnessed all their know-how and built a zigzag rig.

318

00:23:39,880 --> 00:23:42,880

Now they're off on a reptile wrecking.

319

00:23:46,880 --> 00:23:49,880

We are now here in Florida at St. Augustine Alligator Farm.

320

00:23:50,880 --> 00:23:55,880

And they're crazy enough to let us try our buster rig on some of these alligators and crocodiles.

321

00:23:55,880 --> 00:23:57,880

What does it mean when they hiss?

322

00:23:57,880 --> 00:24:00,880

When they hiss, they feel a little threatened because you're getting a little bit too close to them.

323

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

So they're kind of unhappy with your presence right now.

324

00:24:03,880 --> 00:24:04,880

They're unhappy.

325

00:24:14,880 --> 00:24:19,880

St. Augustine is the only farm in the world to have all 23 species of crocodilian.

326

00:24:20,880 --> 00:24:23,880

Director John Bruggan has heard the zigzag myth many times.

327

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

The crocodiles are going in the straight line, you're kind of going in the zigzag.

328

00:24:27,880 --> 00:24:29,880

I think you're going to meet a couple times in there.

329

00:24:29,880 --> 00:24:32,880

It doesn't sound so good to me, but it's worth trying.

330

00:24:32,880 --> 00:24:35,880

They choose a good straight run and assemble the rig.

331

00:24:39,880 --> 00:24:43,880

Soon, Buster Tu's got his fetching, quail-filled fishnets on.

332

00:24:43,880 --> 00:24:45,880

Now, it's croc time.

333

00:24:45,880 --> 00:24:51,880

These are very dangerous animals, so it's important that you're listening to the keepers, listen to David and Kevin.

334

00:24:51,880 --> 00:24:55,880

They'll tell you where to be, if something goes wrong, they're going to be yelling at you.

335

00:24:55,880 --> 00:24:58,880

They don't mean any disrespect, but they're going to tell you to get somewhere quickly.

336

00:24:58,880 --> 00:25:02,880

Hope you were listening, Tori. You're going to help wrangle the first reptile.

337

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

I've been watching a lot of professional wrestling on television, so I've learned some wrestling moves,

338

00:25:06,880 --> 00:25:08,880

and I'm going to try them out on this crocodile.

339

00:25:09,880 --> 00:25:14,880

The Cuban crocodile is one of the quickest and most aggressive crocodiles on the planet,

340

00:25:14,880 --> 00:25:17,880

a perfect candidate for the zigzag test.

341

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

If they can catch one, that is.

342

00:25:19,880 --> 00:25:24,880

We'll get the animal secured, hold the mouth shut, and then you'll actually tape the jaw shut

343

00:25:24,880 --> 00:25:26,880

so it's no longer able to bite us.

344

00:25:26,880 --> 00:25:27,880

What?

345

00:25:27,880 --> 00:25:29,880

You're going to tape the mouth shut.

346

00:25:29,880 --> 00:25:31,880

That's what he thought you said.

347

00:25:37,880 --> 00:25:39,880

Give Kevin that mouthful.

348

00:25:42,880 --> 00:25:43,880

Wow!

349

00:25:43,880 --> 00:25:44,880

Okay.

350

00:25:44,880 --> 00:25:46,880

Okay, here we go.

351

00:25:46,880 --> 00:25:50,880

Can the Cuban crocodile catch those zigzagging quail legs?

352

00:25:50,880 --> 00:25:54,880

Tori's poised to pull the dummy along the track.

353

00:25:54,880 --> 00:25:59,880

Using the remote control, Grant twitches Buster's delicious legs.

354

00:25:59,880 --> 00:26:07,880

Our reptile doesn't seem tempted, although its potential speed is obvious when it suddenly rounds on its keepers.

355

00:26:07,880 --> 00:26:08,880

Whoa!

356

00:26:09,880 --> 00:26:15,880

They keep trying to tease the croc into a chase, but the beast just won't budge.

357

00:26:15,880 --> 00:26:16,880

Signor.

358

00:26:16,880 --> 00:26:18,880

So they wheel out a second Cuban.

359

00:26:18,880 --> 00:26:21,880

Okay, this is the new one, the fresh crocodile.

360

00:26:21,880 --> 00:26:22,880

Here we go.

361

00:26:22,880 --> 00:26:23,880

Jiggling.

362

00:26:24,880 --> 00:26:25,880

Tasty.

363

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

Come on.

364

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

Take a bite.

365

00:26:28,880 --> 00:26:30,880

But no cigar.

366

00:26:30,880 --> 00:26:32,880

The reptiles just won't run.

367

00:26:32,880 --> 00:26:37,880

A big part of the problem may very well be that it knows it's not a person.

368

00:26:37,880 --> 00:26:39,880

How can it tell?

369

00:26:39,880 --> 00:26:40,880

Yeah.

370

00:26:40,880 --> 00:26:47,880

The test subjects are refusing to chase Buster's meat legs in a zigzag or any other configuration.

371

00:26:47,880 --> 00:26:50,880

Luckily, the mythbusters have a plan B.

372

00:26:50,880 --> 00:26:55,880

We're actually going to take a quail and put it on my robot here.

373

00:26:55,880 --> 00:26:58,880

This is a battle-ready combat robot.

374

00:26:58,880 --> 00:27:05,880

So if, unfortunately, an animal gets a hold of it in its jaws, it is built for combat,

375

00:27:05,880 --> 00:27:07,880

so it probably will stand up.

376

00:27:07,880 --> 00:27:13,880

With its cargo of quail in place, Grants Robot sets out on its mission.

377

00:27:13,880 --> 00:27:19,880

Looking like the Mars rover, it parks near the edge of a pool, well within striking distance.

378

00:27:19,880 --> 00:27:24,880

Grants poise to hit the accelerator at the first crocodilian quiver.

379

00:27:24,880 --> 00:27:29,880

But, apparently, this croc doesn't feel like meals on wheels.

380

00:27:29,880 --> 00:27:32,880

We're having a hard time getting this crocodile to come to the surface of the water,

381

00:27:32,880 --> 00:27:34,880

so I'm going to try to entice it with some quail.

382

00:27:34,880 --> 00:27:38,880

I'm just going to drop it right in front of his nose, or her nose.

383

00:27:38,880 --> 00:27:41,880

Tori ventures close and throws the bird.

384

00:27:41,880 --> 00:27:44,880

Nothing, not a ripple.

385

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

I don't think he's coming out the water.

386

00:27:46,880 --> 00:27:53,880

Well, the trainers here say that they're naturally secretive animals, and what's more, they're not stupid.

387

00:27:53,880 --> 00:27:56,880

Yeah, it seems pretty spooked by their robot.

388

00:27:56,880 --> 00:27:59,880

No response to the rig, no response to the robot.

389

00:27:59,880 --> 00:28:04,880

You can't say the mythbusters aren't trying.

390

00:28:04,880 --> 00:28:09,880

You know, those crocodiles seem like they're slow on land, but shooting out of the water, they're lightning.

391

00:28:09,880 --> 00:28:15,880

Well, actually, I've done a little bit more research, and it turns out in almost every crocodile or alligator attack,

392

00:28:15,880 --> 00:28:19,880

since they've been keeping records, the victim has been in or near the water.

393

00:28:19,880 --> 00:28:23,880

Well, then what are the rules to avoid being chomped?

394

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

First, if there are any warning signs, don't go in the water.

395

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

Second, if you fall into the water, get out as quickly as possible,

396

00:28:32,880 --> 00:28:38,880

and third, never ever dangle your legs or arms over the side of the boat.

397

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

I think we can handle these rules.

398

00:28:40,880 --> 00:28:45,880

There's only one thing left, Plan C. That's C for crazy.

399

00:28:45,880 --> 00:28:51,880

Tori's going to put his behind on the line and get a crock to chase him instead.

400

00:28:51,880 --> 00:28:53,880

Stay with us.

401

00:28:54,880 --> 00:28:58,880

Soon, Adam and Jamie will see if the Hindenburg myth can stand the heat.

402

00:28:58,880 --> 00:29:00,880

It's a lot quicker than I thought it was going to go.

403

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

But next, Tori's in for a crock shot.

404

00:29:07,880 --> 00:29:13,880

Tori, Carrie and Grant have been wrestling with the myth that crocodiles can't run in a zigzag.

405

00:29:13,880 --> 00:29:18,880

So far, they haven't been able to coax a crock into running at all.

406

00:29:18,880 --> 00:29:22,880

You know what they say about desperate times and desperate measures.

407

00:29:22,880 --> 00:29:26,880

What I'm going to do is I'm going to actually suit up with some protective gear,

408

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

get in there, try to agitate the crocodiles and see if they'll chase me.

409

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

Tori's going out on a limb.

410

00:29:32,880 --> 00:29:36,880

Let's just hope all his are still there when it's over.

411

00:29:36,880 --> 00:29:38,880

Tori's legs will be well protected.

412

00:29:38,880 --> 00:29:42,880

Unfortunately, the heavy padding will also slow him down.

413

00:29:42,880 --> 00:29:46,880

Great. The safety protection caused me to fall down.

414

00:29:46,880 --> 00:29:50,880

Protective gear is hindering me from running away from the crocodile.

415

00:29:50,880 --> 00:29:55,880

Nevertheless, he's ready for a face-to-face crock confrontation.

416

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

The Johnston's crocodile is found in Australian waters.

417

00:29:58,880 --> 00:30:03,880

It's smaller than the Cuban crock, but fast and fiercely territorial.

418

00:30:03,880 --> 00:30:07,880

So there's a first test chasing Tori with the Johnston's crocodile.

419

00:30:07,880 --> 00:30:09,880

What do you think is going to happen?

420

00:30:09,880 --> 00:30:11,880

I think it can catch him.

421

00:30:11,880 --> 00:30:15,880

Can Tori snatch victory from the jaws of defeat?

422

00:30:15,880 --> 00:30:18,880

Was that an unfortunate turn of phrase?

423

00:30:18,880 --> 00:30:23,880

Once again, provoking a crock attack proves to be a lot harder than you'd think.

424

00:30:23,880 --> 00:30:29,880

But if he succeeds, Tori will have to remember to run in a zigzag.

425

00:30:29,880 --> 00:30:31,880

Suddenly...

426

00:30:36,880 --> 00:30:41,880

The crocodile lunges, but doesn't continue the chase beyond that initial strike.

427

00:30:43,880 --> 00:30:46,880

The experiment ends with Tori intact.

428

00:30:46,880 --> 00:30:50,880

And he's starting to draw some conclusions about this myth.

429

00:30:50,880 --> 00:30:52,880

I don't think you're going to have to worry about it.

430

00:30:52,880 --> 00:30:55,880

I think you're more worried about getting away from that initial explosive attack.

431

00:30:55,880 --> 00:30:59,880

If you can get away from that, you're pretty much going to be okay.

432

00:30:59,880 --> 00:31:02,880

Actually, Tori, you're spot on.

433

00:31:02,880 --> 00:31:06,880

In the wild, crocodiles don't chase prey on land.

434

00:31:06,880 --> 00:31:11,880

They're ambush predators attacking from the water, escape that initial lunge,

435

00:31:11,880 --> 00:31:13,880

and you're pretty much home-free.

436

00:31:13,880 --> 00:31:15,880

That's crocodiles.

437

00:31:15,880 --> 00:31:17,880

But what about alligators?

438

00:31:17,880 --> 00:31:22,880

Grant wants to try one more experiment, swapping the crocs for their cousins.

439

00:31:22,880 --> 00:31:26,880

Okay, David, so up to this point, we've been using crocodiles.

440

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

They haven't been going for the food, but here you have some trained alligators.

441

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

We have three good candidates in here today.

442

00:31:33,880 --> 00:31:35,880

We have Fluffy, Skipper, and Bob.

443

00:31:35,880 --> 00:31:39,880

And with any luck, one of those will come at you at full speed.

444

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

Fluffy, Skipper, Bob, Gee!

445

00:31:42,880 --> 00:31:46,880

With names like that, it must be hard not to smile at a crocodile.

446

00:31:46,880 --> 00:31:50,880

You should lay the food about maybe a foot in front of his head.

447

00:31:50,880 --> 00:31:52,880

Oh, okay, that close.

448

00:31:52,880 --> 00:31:54,880

That close.

449

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

Using his most commanding voice, Grant calls the animal.

450

00:31:58,880 --> 00:32:01,880

Skipper! Skipper!

451

00:32:01,880 --> 00:32:04,880

I said commanding voice.

452

00:32:04,880 --> 00:32:07,880

Skipper! Skipper!

453

00:32:07,880 --> 00:32:12,880

Skipper follows the bait, but he's not setting any land speed records.

454

00:32:12,880 --> 00:32:18,880

So then Carrie plays Gator Bader, trying to lure her living dinosaur in a zigzag.

455

00:32:18,880 --> 00:32:22,880

Oh, yes, you're just freaking me out now, Smiley.

456

00:32:22,880 --> 00:32:25,880

Yay! This way! All right!

457

00:32:25,880 --> 00:32:27,880

You're the most popular girl in the lagoon.

458

00:32:27,880 --> 00:32:30,880

I don't know if she's more afraid of the alligator or the bird.

459

00:32:30,880 --> 00:32:34,880

The alligator slowly changes direction to follow Carrie,

460

00:32:34,880 --> 00:32:38,880

but is that a zigzag as defined by the myth?

461

00:32:38,880 --> 00:32:40,880

I did a zig, I did a zag.

462

00:32:40,880 --> 00:32:43,880

He could follow me, but only sort of in a curvy motion,

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00:32:43,880 --> 00:32:50,880

not really sharp turns, and it didn't make me get away from him any better or any faster.

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00:32:50,880 --> 00:32:53,880

Let's face it, this myth is looking more and more,

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00:32:53,880 --> 00:32:56,880

if you'll pardon the expression, like a crock.

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00:32:58,880 --> 00:33:02,880

Man, we threw everything at this one, including ourselves.

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00:33:02,880 --> 00:33:04,880

I don't know what more we could have done.

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00:33:04,880 --> 00:33:08,880

Yeah, you know, I'm really frustrated. We didn't even get to try our crock zigzag rig.

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00:33:08,880 --> 00:33:13,880

We were in the right place at the right time of year on a hot day with cranky crocodiles

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00:33:13,880 --> 00:33:17,880

and their food of choice, and they still wouldn't chase.

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00:33:17,880 --> 00:33:21,880

I mean, we even strapped quails to your robot, and we couldn't get those crocodiles to chase it.

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00:33:21,880 --> 00:33:25,880

Well, doesn't that in itself prove something? Forget the zigzag.

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00:33:25,880 --> 00:33:28,880

Crocodiles are just not going to chase you on land.

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00:33:28,880 --> 00:33:31,880

Yeah, they're ambush predators. If they miss you that first time,

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00:33:31,880 --> 00:33:34,880

they're just going to wait until some easier prey comes along.

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00:33:34,880 --> 00:33:37,880

So this whole zigzag theory is just ridiculous.

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00:33:37,880 --> 00:33:40,880

I mean, you're never going to use it because they're never going to chase you.

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00:33:40,880 --> 00:33:43,880

It's ridiculous, and what's more, it's busted.

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00:33:43,880 --> 00:33:44,880

Busted.

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00:33:44,880 --> 00:33:45,880

Totally busted.

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00:33:47,880 --> 00:33:51,880

After the break, it's high noon for the Hindenburg.

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00:33:51,880 --> 00:33:53,880

It is maker break for this myth.

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00:33:58,880 --> 00:34:04,880

For almost 70 years, it's been assumed that hydrogen was the cause of the Hindenburg disaster.

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00:34:04,880 --> 00:34:09,880

But the incendiary paint theory, developed by a retired NASA scientist,

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00:34:09,880 --> 00:34:14,880

lays the blame for the blaze on the metal paint that covered the airship's skin.

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00:34:14,880 --> 00:34:17,880

Adam and Jamie have built some blimps.

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00:34:17,880 --> 00:34:18,880

Ta-da!

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00:34:18,880 --> 00:34:22,880

And are set to give that theory a serious thermal workout.

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00:34:22,880 --> 00:34:27,880

They're off to their home away from home, the abandoned naval base.

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00:34:27,880 --> 00:34:30,880

And now, we're going to blow up some zeppelins.

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

As Tarantino might say, bring out the blim.

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00:34:34,880 --> 00:34:38,880

At 16 feet long, the zeppelin is 1 50th scale.

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00:34:38,880 --> 00:34:43,880

It's not been designed to get airborne, so it'll have to hang suspended.

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00:34:43,880 --> 00:34:45,880

We've got these figures from a train set.

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00:34:45,880 --> 00:34:47,880

These are 1 50th scale.

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00:34:47,880 --> 00:34:49,880

Check these guys out.

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00:34:50,880 --> 00:34:55,880

That's how big an actual person would have been with the Hindenburg.

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00:34:55,880 --> 00:34:58,880

This thing is massive.

499

00:34:58,880 --> 00:35:04,880

This fire must have been just the most unbelievable thing that anyone that day had ever seen.

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00:35:04,880 --> 00:35:10,880

The myth says that the destruction of the Hindenburg was because of the skin, and not because of the hydrogen.

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00:35:10,880 --> 00:35:16,880

The blimp skin matches the Hindenburgs exactly, right down to the dope formula painted on its surface.

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00:35:16,880 --> 00:35:23,880

The first test is just the blimp, and without any gas, no hydrogen,

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00:35:23,880 --> 00:35:26,880

we're just going to burn the skin and see what that does.

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00:35:26,880 --> 00:35:30,880

The room will be a strict no-go zone during the test.

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00:35:30,880 --> 00:35:34,880

Adam and Jamie will watch a live feed of the action outside.

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00:35:34,880 --> 00:35:39,880

To set fire to the blimp remotely, Jamie rigs a blow torch on a stand.

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00:35:39,880 --> 00:35:41,880

This is a test number one.

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00:35:41,880 --> 00:35:45,880

Period, correct skin, no gas.

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00:35:45,880 --> 00:35:46,880

Good night when you're ready.

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00:35:46,880 --> 00:35:50,880

Time to put a blow torch to the belly of this 70-year-old myth.

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00:35:50,880 --> 00:35:54,880

That looks good, you're right on target, it's going! That was quick!

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00:35:54,880 --> 00:35:59,880

A thermal imaging camera will show the path of the fire as it rages through the blimp.

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00:35:59,880 --> 00:36:02,880

The Hindenburg burned in 34 seconds.

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00:36:02,880 --> 00:36:08,880

For the myth to be plausible, this Hindenburg has to be consumed in a similar time.

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00:36:08,880 --> 00:36:11,880

I'm seeing little thermite sparkers, a little.

516

00:36:11,880 --> 00:36:16,880

But yeah, we're already at one minute ten seconds.

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00:36:16,880 --> 00:36:19,880

So we could have burned two Hindenburgs by now.

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00:36:19,880 --> 00:36:22,880

And we're only like not even a quarter of the way through this.

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00:36:23,880 --> 00:36:26,880

Suddenly the fire accelerates.

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00:36:26,880 --> 00:36:29,880

Oh wow! Wow!

521

00:36:29,880 --> 00:36:31,880

Oh yeah.

522

00:36:31,880 --> 00:36:32,880

That is so beautiful!

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00:36:32,880 --> 00:36:38,880

Sparks cascade as the aluminum and iron oxide on the skin create thermite.

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00:36:38,880 --> 00:36:43,880

The thermal camera shows a mass of orange as the fire spreads through the blimp.

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00:36:43,880 --> 00:36:46,880

Two minutes, six seconds.

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00:36:47,880 --> 00:36:49,880

A lot quicker than I thought it was going to go.

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00:36:49,880 --> 00:36:57,880

But still slow, the real Hindenburg could have burned almost four times over in the time it took for the model to burn.

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00:36:57,880 --> 00:37:05,880

There's the unmistakable smell of charred myth in the air, but Adam still sees a spark of hope.

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00:37:05,880 --> 00:37:11,880

Critics of the skin theory say that there couldn't have possibly been a thermite reaction on the face of the Hindenburg

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00:37:11,880 --> 00:37:15,880

because not only are there proportions of aluminum to iron oxide wrong,

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00:37:15,880 --> 00:37:18,880

but they're suspended in separate layers of butyrate.

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00:37:18,880 --> 00:37:24,880

The fact that we saw a thermite reaction in this test tells me that while that doesn't prove the myth is true,

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00:37:24,880 --> 00:37:26,880

it tells me the critics aren't entirely right.

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00:37:26,880 --> 00:37:29,880

On to Hindenburg burn number two.

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00:37:29,880 --> 00:37:32,880

This sepulon would be filled with hydrogen.

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

Now just pumping the blimp full of gas and lighting it won't work.

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00:37:36,880 --> 00:37:39,880

Instead of a burn, they'll get a bang.

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00:37:39,880 --> 00:37:41,880

Just like Adam did back at the shop.

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00:37:44,880 --> 00:37:46,880

Everybody okay?

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00:37:46,880 --> 00:37:48,880

So the gas will have to be diffused.

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00:37:48,880 --> 00:37:55,880

We're going to feed it from the hydrogen tanks through this blue gas hose up the main strut and into a trough of water.

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00:37:55,880 --> 00:38:00,880

And the trough of water is going to diffuse the hydrogen across the entire Hindenburg.

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00:38:00,880 --> 00:38:03,880

This is where the rubber meets the road people.

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00:38:03,880 --> 00:38:10,880

If this hydrogen Hindenburg burns faster than the first blimp, the paint theory enthusiasts will be deflated.

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00:38:10,880 --> 00:38:14,880

It is make or break for this myth on this test. Let's go.

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00:38:14,880 --> 00:38:17,880

Jamie sets fire to the blimp.

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00:38:17,880 --> 00:38:20,880

Call it. You're lit.

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00:38:20,880 --> 00:38:25,880

As the flames take hold, Jess starts feeding hydrogen into the Hindenburg.

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00:38:25,880 --> 00:38:27,880

The gas ignites.

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00:38:27,880 --> 00:38:29,880

Whoa!

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00:38:29,880 --> 00:38:32,880

More hydrogen. More, more, more.

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00:38:33,880 --> 00:38:36,880

And the blimp is instantly filled with flame.

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00:38:40,880 --> 00:38:42,880

Wow.

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00:38:49,880 --> 00:38:51,880

Look at that.

555

00:38:53,880 --> 00:38:54,880

What's our time?

556

00:38:54,880 --> 00:38:56,880

Boom. Wow.

557

00:38:56,880 --> 00:38:58,880

59 seconds flat.

558

00:38:58,880 --> 00:39:03,880

That just feels exactly like what we see in the newsreel. God, it's great.

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00:39:06,880 --> 00:39:11,880

Compare Adam and Jamie's result with the newsreel footage. They're remarkably similar.

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00:39:14,880 --> 00:39:19,880

This is my favorite scale experiment we've ever done. Full stop.

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00:39:19,880 --> 00:39:22,880

The burn times tell the story.

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00:39:22,880 --> 00:39:28,880

The period skin plus the hydrogen burned twice as fast as the period skin without the hydrogen.

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00:39:28,880 --> 00:39:32,880

It doesn't get much more definitive than that kind of result.

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00:39:32,880 --> 00:39:37,880

The metal compounds on the skin undoubtedly played a role in the Hindenburg tragedy.

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00:39:37,880 --> 00:39:42,880

But to say the hydrogen had no effect, well, that's a lot of hot air.

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00:39:42,880 --> 00:39:50,880

At the outset of this, we said for this myth to be true, both burn times with and without hydrogen had to be the same and they weren't.

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00:39:50,880 --> 00:39:55,880

With hydrogen, this thing burned up twice as fast. It's busted.

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00:39:55,880 --> 00:39:59,880

Yeah, but the skin actually did have a fair amount to do with this.

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00:39:59,880 --> 00:40:04,880

We saw that it does burn aggressively and it was clearly a part of what was going on here.

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00:40:04,880 --> 00:40:13,880

We even saw little bitty thermite reactions, which tells us that like any good myth, there is a grain of truth to the fact that the skin had something to do with thermite.

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00:40:13,880 --> 00:40:16,880

But in the end, it was the hydrogen plus the skin.

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00:40:16,880 --> 00:40:17,880

Yeah.

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00:40:17,880 --> 00:40:19,880

We're calling this one busted.

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00:40:19,880 --> 00:40:31,880

But hang on, what about that third blimp?

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00:40:31,880 --> 00:40:40,880

The skin of this Hindenburg has been coated with pure thermite. Aluminum and iron oxide blended in a secret searing formula.

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00:40:40,880 --> 00:40:47,880

It's the same over the top completely unrealistic, mega dope mix Jamie tested back at the start.

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00:40:47,880 --> 00:40:48,880

Deuteronomy.

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00:40:48,880 --> 00:40:53,880

With the myth already busted, this test is simply myth buster theatrics.

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00:40:53,880 --> 00:41:02,880

What you're about to see is what would have happened if the original Hindenburg filled with hydrogen was painted with rocket fuel.

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00:41:02,880 --> 00:41:08,880

There's 15 pounds of thermite on this blimp right now. It's a different sort of beast.

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00:41:08,880 --> 00:41:11,880

This thing is going to burn.

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00:41:11,880 --> 00:41:13,880

It's a safety red alert.

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00:41:13,880 --> 00:41:15,880

You're lit.

584

00:41:15,880 --> 00:41:17,880

Whoa.

585

00:41:17,880 --> 00:41:20,880

Dude.

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00:41:20,880 --> 00:41:28,880

Unsurprisingly, the flammable thermite fires up in no time and after a dash of hydrogen, we're cooking with gas.

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00:41:28,880 --> 00:41:29,880

Whoa.

588

00:41:29,880 --> 00:41:31,880

Oh.

589

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

Dynamon's Hindenburg is history.

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00:41:41,880 --> 00:41:43,880

We got to call that. Boom.

591

00:41:43,880 --> 00:41:45,880

30 seconds flat.

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00:41:45,880 --> 00:41:58,880

That is exactly the kind of burn that the proponents of the skin theory believe happened.

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00:41:58,880 --> 00:42:04,880

Except that the skin of the Hindenburg was not coated in hundreds of tons of thermite.

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00:42:04,880 --> 00:42:08,880

Yeah, that thing wouldn't have gotten off the ground with that much thermite per square foot.

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00:42:08,880 --> 00:42:09,880

No way.

596

00:42:16,880 --> 00:42:20,880

Our work here is definitively done.

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00:42:20,880 --> 00:42:23,880

I love the smell of thermite in the afternoon.

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00:42:34,880 --> 00:42:40,880

You know, Hindenburg was more fun than I've had in a long time, but I'll just bet it doesn't end there.

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00:42:40,880 --> 00:42:43,880

I'll bet this one is going to be super controversial.

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00:42:43,880 --> 00:42:52,880

Well, one of the good things about the show is that we do listen to the fans and in fact we've got a whole episode coming up that is devoted to fan suggestions.

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00:42:52,880 --> 00:42:56,880

Right you are. So you sitting there yelling at us, forgetting it wrong?

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00:42:56,880 --> 00:43:02,880

Log on to Discovery.com slash MythBusters and tell us exactly what you'd like to see on the show.

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00:43:02,880 --> 00:43:04,880

Yeah.