



Season 6, Episode 5: Hindenburg Artifact

Elyse Luray: Our first story investigates a palm-sized device that may be linked to one of the most famous tragedies in aviation history. May 6th, 1937: spectators and newsmen gather at an American navy station in Lakehurst, New Jersey. The largest aircraft ever to fly has just crossed the Atlantic from Frankfurt, Germany, and is about to land.

Archive: *It burst into flames!*

Elyse: Without warning, the icon of Nazi might becomes a fatal inferno.

Archive: *Oh, the humanity! And all the passengers screaming around here!*

Elyse: 36 passengers and crewmen die only moments from the end of their three-day journey. The mysterious crash sparks a flurry of sabotage theories – and multiple inquiries.

Archive: *They have 42 navy men frantically searching among the debris down there, which is smoldering now.*

Elyse: But investigators fail to pinpoint the cause of the disaster, and what sparked the fatal blaze remains unknown to this day. 70 years later, Tim Fugmann of Hoboken, New Jersey has a metal box that family folklore says was pulled from the crash site.

Tim: It was in my father's collection in a large china cabinet that he had in his study and I kinda looked at it through the glass when I was a kid, and I'd like to know whether the story I was told is true.

Elyse: I'm Elyse Luray, and I've come to see Tim's artifact for myself.

Tim: Hi, how are you?

Elyse: Hi, Elyse.

Tim: How are you doing?

Elyse: Nice to meet you.

Tim: Pleasure to meet you.



Elyse: So what do we have here?

Tim: Allegedly it's a piece from the Hindenburg.

Elyse: The Hindenburg! What makes you think that?

Tim: Well, it was left to me in my stepdad's will whose family lived down in Lakehurst on the site at the time, as the story goes they went and picked it up after the accident before any government had sealed it off.

Elyse: Did you get their names?

Tim: No.

Elyse: You don't have their names?

Tim: I do not.

Elyse: So it's just family folklore then?

Tim: It is strictly family folklore

Elyse: And what do you know about the piece?

Tim: I did take it to a friend of mine. He's of German descent and I had him translate this line right up here. He said that pretty much translated to height speed calculator.

Elyse: Has the plastic always been missing?

Tim: Yes.

Elyse: What about the knobs; have you moved them?

Tim: When I was a kid I turned them a few times.

Elyse: All right, you played with it uh?

Tim: A little bit.



Elyse: And what exactly do you want me to find out?

Tim: I would like to find out what it is and if it is from the airship Hindenburg.

Elyse: Okay, well I have to tell you that family folklore is often pretty hard to prove. But you've intrigued me, so I will see what I can do.

Tim: Terrific.

Elyse: It's pretty heavy. It has a lot of condition issues, which is good if it is coming from the Hindenburg, we will expect that. I don't see a lot of burn marks, but the plastic or whatever the casing was over this is completely destroyed. I see a mark here and it says Goerz Berlin. Is this a manufacturers logo? My office has sent me some research. It seems that the Goerz manufacturing company did make binoculars for Zeppelin crews. But there's a potential problem: according to my office's research, most of the records for the two main companies who made the airship itself – Zeppelin and Lufthansa – were destroyed during Allied bombing in World War II. I think this is going to be one tough investigation. My office also translated the German writing, and they've confirmed what Tim was told – these markings translate roughly to "airspeed indicator adjusted for altitude". It does say kilometers and it goes up to 160. Scanning the Hindenburg's flight statistics, I discover its maximum cruising speed was 135 kph. That's close to the upper end of the speed indicated on our scale. It's a pity the dials have been turned. If this was from the Hindenburg, perhaps it contained some useful data about the final flight. Theories about the crash included mechanical failure, Jewish saboteurs, gunfire from the ground, and lightning strikes. International tensions were already high, and America and Germany trod carefully to avoid a crisis. Investigators' findings were ultimately inconclusive. With such a high profile disaster, would it have really been possible to take a cockpit flight instrument from the crash site? Hey Aaron.

Aaron: Hi.

Elyse: Nice to meet you.

Aaron: Nice to meet you.

Elyse: I'm meeting Special Agent Aaron Ford at the Newark FBI headquarters. He's agreed to show me the once-secret Hindenburg file.

Aaron: Should be down this row. It looks as though the case was declassified in 1989. The file was closed and the case is not available for public viewing.



Elyse: Aaron tells me that although the navy and the Department of Commerce had jurisdiction over the Hindenburg case, the FBI was brought in to investigate the possibility of sabotage.

Elyse: Here is my artifact. And I'm hoping that maybe your files have a list of inventory or some type of information about the instruments on board.

Aaron: Sure let's take a look

Elyse: It's compelling reading. The file is filled with tips from eyewitnesses, anonymous sabotage theories, and documents redacted to protect people's identities. Sifting through it, we find something that speaks directly to my investigation. Oh, this is interesting...after the crash the general public swarmed over the field from all directions and it was some three to four hours before a military patrol was established and the public was excluded...now was that common during that time? I would think they would secure it right away.

Aaron: During this time it's not uncommon to have had three to four hours lag time between the time of incident and the time police responded.

Elyse: It says here I saw a member of the ground squad carrying away a length of a girder, six feet and when he looked at me, he looked a little ashamed...there's evidence that pieces were taken right?

Aaron: Sure, it certainly could have happened. There were people all over the field. There were people climbing fences to get in so anything could have happened literally during that time.

Elyse: Wreckage taken from the disaster site could possibly have provided clues to the cause of the crash. Aaron says the failure to explain the crash of the airship, and problems quickly securing other disaster and crime scenes during the same period, ultimately taught investigative agencies a lesson.

Aaron: Now there's a more strict protocol regarding crime scenes. I think everyone's seen yellow police tape around crime scenes today. So police immediately respond and form a perimeter.

Elyse: But the old files contain no list of wreckage recovered, nor anything else that might help us identify our instrument. Aaron suggests my best bet might be at the Lakehurst Naval Air Station, where the former airship hanger houses a museum. But before I check their collection, I'm meeting crash eyewitness Robert Buchanan. On that May evening in 1937, Robert was a teenage crewman waiting on the ground to dock the airship. So this is where it all happened?



Robert: This is where it all happened.

Elyse: As the Nazi Leviathan approached the metal docking pylon, many strong arms were needed to stop the ship from drifting in the wind.

Robert: It was full of people, full of reporters, because they had a full compliment of passengers going back to Germany that night.

Elyse: He tells me he was positioned directly below the AFT section when disaster struck.

Robert: And – poof!

Archive: *It burst into flames!*

Robert: This wasn't a loud explosion. And then it immediately burst into an enormous ball of fire.

Elyse: As millions of cubic feet of hydrogen gas suddenly caught fire, Robert found himself in the middle of an inferno.

Robert: My hair was singed quite bad. I thought it was the end of my life. It was the hottest thing I ever felt in my life. It was just suffocating heat. And it was shooting out ahead of me, which gave me the idea that I wouldn't make it. I had no idea how far I ran, but it was quite a distance.

Archive: *I, I can't talk ladies and gentlemen.....*

Robert: It rained twice and that's what saved us, I'm sure.

Elyse: All but one ground crewman survived, largely thanks to their rain-soaked clothes. I'm investigating this piece that I think may have come from the Hindenburg. I tell Robert about our investigation. He says that night he was too busy searching for his cousin – who was also part of the ground crew – to notice anyone taking souvenirs. Have you ever heard of people owning pieces from the Hindenburg?

Robert: Oh there were a lot of people who had parts of it. In fact I had a piece myself.

Elyse: Robert says that, in the days and weeks following the disaster, there was a healthy local trade in Hindenburg artifacts.



Elyse: So it's not uncommon for people to own things from the Hindenburg?

Robert: There are still many, many pieces around.

Elyse: Many Hindenburg artifacts and archives are now stored at the Navy Lakehurst Historical Society. Rick Zitarosa is curator.

Rick: Welcome to Lakehurst.

Elyse: Thank you. Wow look at this.

Rick: This is hanger number one, it is a national historic landmark. The home of Navy lighter than air, and it's the place where the Hindenburg was actually housed during two of its 1936 visits here to Lakehurst.

Elyse: The museum holds a great many fragments that testify to the first class fare the Hindenburg offered, and to the intensity of the terrible fire that night.

Rick: Here is a knife and very easily identifiable of course it has the Zeppelin company, Deutsche Zeppelin-Reederei crest on it, it was separated, the solder in it melted from the heat but its just pretty well identifiable piece such as this one obviously got a little bit more heat.

Elyse: Has burn marks on it...I tell Rick that I'm bothered by not seeing burn marks or other indications that Tim's device had been caught in a blaze. He says I shouldn't be concerned.

Rick: You have to remember in the fire of the airship most of the hydrogen fire was directed upward and outward in the case of the control car where an item like this would have come from, the flame was away from that, the control car was actually one of the last parts of the ship to hit the ground, and it would have been exposed to a searing blast of heat but not any actual crash impact per se.

Elyse: Rick warns that there is a better reason to be suspicious of alleged Hindenburg artifacts – the disaster produced a robust market for phony items.

Rick: As the authentic artifacts began to run scarce or disappear all together, people were not above taking old model Ts, mattresses, box springs anything that you can get the hands on ...and then taking them out to road side stands and selling them to unsuspecting tourists.



Elyse: But Rick has made what may be a significant discovery. In his files, he's uncovered a photo of the control cabin of the Hindenburg's sister ship, *the Graf Zeppelin*.

Rick: What you basically have here is the altimeter, an item that looks very, very similar to what we have here.

Elyse: It's not an *exact* match, but he says the two airships carried similar components.

Rick: Don't forget that the Hindenburg was largely experimental, even though it was an in-service passenger airship, and the instrumentation was often modified and retrofitted to suit the needs and demands of the operators.

Elyse: Rick says our piece of machinery and the one in the photograph were used to make sure the other instruments on the airship were working properly.

Rick: This device in many ways reminds me of a slightly sophisticated abacus that you would just use to tabulate your true measurements versus what your instruments were showing.

Elyse: He doubts any data it may once have recorded would have given investigators useful information about the ship's final minutes. But he says it does recall an approach to flying that long predates onboard computers and GPS navigation.

Rick: Over water they would use a soda water bottle, drop it out the window, and time the descent with a stopwatch.

Elyse: The information would then be recorded on a device like this.

Rick: And that gave you a way to check the accuracy of your altimeter. This instrument would be used to calibrate their main instruments in the control car.

Elyse: And based on its markings, Rick is confident that such a device would not have been found on an airplane, ocean liner, or other type of vessel.

Rick: Speed is a factor here. 160 kilometers per hour, way too slow for aeroplanes of the day for the most part. The altitude measurement, generally 600 meters or less, way too low for an aeroplane and irrelevant with a steamship.



Elyse: Rick says our instrument was certainly used onboard a German airship. But he can't be certain it was on the Hindenburg itself, so I've arranged to run some scientific tests at a forensics lab in Atlanta with Dr. Michelle Cavaliere.

Michelle: Nice to meet you. Let's take it back to the lab and we will take a look at it.

Elyse: Okay.

Michelle: It looks like we have both some green paint and some plastic that we could analyze. So first we sample a little bit of paint... pick it up put it on the slide.

Elyse: Michelle puts our sample under an infrared microscope to reveal its unique chemical composition.

Michelle: The binder appears to be a natural plant oil and those were certainly used in the 20's and 30's, and today we might see something more like a synthetic, an acrylic, or something along those lines, as a binder.

Elyse: Alright, now let's look at the plastic. The plastic is also composed of cellulose nitrate. It's an organic ingredient in hard, clear plastics, but hasn't been used much since the 1930's. Michelle's powerful microscope reveals tell-tale signs of acute and sudden distress.

Michelle: You can see that it is very bubbled and kind of crystalline looking.

Elyse: Michelle tells me that could have been caused by exposure to heat. Her trained eyes spot something I overlooked: a faint stain on a corner of the device.

Michelle: There is this darkened discolored area and I'm wondering if that's some charred material possibly from heat exposure.

Elyse: What Michelle tells me next ties the whole case together. It's time to take the results back to Tim. What you have is something really unique.

Tim: What do I have?

Elyse: I tell Tim that the FBI's declassified Hindenburg file, the German translation, and the eyewitness accounts all seem to support his family's folklore.

Tim: Really?



Elyse: But it wasn't until I turned to chemical analysis that I found an answer. Tim's airspeed indicator bore the faintest sign of a sudden blast of extreme heat – which had almost certainly come on that terrible night in 1937.

Michelle: Well those two peaks are in the position that is consistent with a carbon containing burned or charred material. In my opinion, this could have come from the wreckage of the Hindenburg.

Tim: Holy Christmas, that's something. I think it's really nice that it's actually valid. My stepdad would be absolutely thrilled.

Elyse: And what's also amazing is that this piece was in your hands all these years. Since the time of the Hindenburg crash, disaster scenes have become very sophisticated and it's almost impossible to get relics or objects from them. This artifact really illustrates how investigators have learned lessons from the past.

Tim: Wow I am still kind of speechless.

Elyse: The captain of the Hindenburg, and several other crewmen who survived, were convinced their ship had been deliberately destroyed by a bomb. But neither the American nor German investigations found evidence of a crime, nor of faulty valves, or impact from a broken propeller. Official reports of both countries concluded that a leak occurred in hydrogen cell four or five, allowing a combustible mixture of inflammable gas to build up. However, the specific cause of that leak – and of the spark that ignited it – was never determined.