



## THE CAPITAL: SPEAKING TRUMPET, BUCK'S COUNTY, PENNSYLVANIA.

Gwen: This week, "History Detectives" comes from the Capital region, and our first investigation begins in Bucks County, Pennsylvania.

Elyse: In this part of the country, you never know where you're going to find a piece of history. One man in Bucks County thinks that he's found something that not only dates back to the Revolutionary War, but might have played a part in the conflict. Howard Schmolko is a furniture restorer from Pennsylvania. He made his discovery at a local antique fair.

Howard Schmolko: I spotted an object that was very old looking. It was hidden underneath a table. I started to get a real strong feeling about it. It was like a smashed up bunch of tin that had to have been -- went through a War or something. And I thought, wow, this is too much. This is unbelievable. If this piece could speak, you know, what would it say? It's a beautiful house.

Elyse: I'm Elyse Luray, and Tukufu Zuberi and I have come to meet Howard to find out what he has to say about his unusual find. So I see it has an inscription on it. "This trumpet," it says, "was used" -- it's hard to read -- "in the Revolutionary War in a row galley between West Point and Fort Washington."

Elyse: I've never seen anything like this before, I have to say. But you know, you just don't look at it and know exactly what it is right away.

Howard: That's the question.

Elyse: Wow. Look at that. This comes out. It stretches out here. That makes it more unusual. I'd love to know what this piece is. Was this really used during the Revolutionary War? And who was Captain Lewis? Who is he, where was he, and how was this object used?

Howard: I'd really like to know.

Elyse: Let's go see what we can find out.

Howard: Okay, I can't wait.

Tukufu: In 1770, the first blood of the Revolutionary War was spilled in Boston, signaling more than a decade of war. It made the names of people like George Washington and Paul Revere, but I've never heard the name Captain Lewis or of a significant battle taking place between Fort Washington and West Point.

Elyse: While Tukufu goes to authenticate the inscription, I'm checking out Howard's artifact. We keep calling it a trumpet, but what it is really? I've brought it to American University to show musicologist Professor Dan Abraham.

Professor Dan Abraham: Look at that. The mouthpiece is really the main contact area to create the vibrations through the instrument from the player's/ performer's lips into the actual apparatus of the instrument itself. And this mouthpiece is amazingly deep.

Elyse: It looks like a trumpet, but does it play like one? Dan's got two other trumpets that he wants to compare ours to.

Dan: This instrument is a modern reproduction of a baroque trumpet, or what we could call a natural trumpet, one without valves. And you can see the tubing itself is much thinner, creating resistance in the instrument. The modern instrument today has valves, so in a way we have many multiple trumpets all in one.

[Dan tests instrument]

Dan: Nothing. Nothing. Hot air. Lots of hot air. There's really no resistance within the instrument itself, which means the air column that's vibrating really has no place to sort of hold it back and create vibration within the instrument.

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Elyse: So if it's not a musical instrument, what do you think it could be?

Dan: Well, it's probably either one of two things: either an ear trumpet, one for listening, or most likely a speaking trumpet, one for talking to large crowds.

Elyse: Wow, it's loud.

Dan: Sure. It amplifies the sound.

Elyse: what does any of this have to do with the Revolutionary War?

Tukufu: I've come to the library of congress in Washington, D.C. The inscription on the trumpet stated that it was used by Captain Lewis on a Row Galley. So to start with, I need to find out what these Row Galleys were, if they really existed. Let's see what we got here. All right, here is a picture of a Row Galley showing that it was a ship with sails and the ability also to be rowed, so you had a space for oars to go in. The Row Galleys were round bottom, some 72 feet long and 20 feet in beam. Their armament was mixed, carrying two 18-pounders. These are large cannons, okay. Two 12-pounders, two 9-pounders, and 4-pounders and so on. This was a heavily armed vessel. What did these Row Galleys do? I've just found a letter from the Army Generals to general Washington that might explain. It appears that they provided firepower as part of a huge blockade across the Hudson River. Iron cables were stretched from bank to bank to keep the enemy back. "the two continental ships should be immediately manned and fixed and the two Row Galleys be stationed just above the obstructions, which will form a front fire equal to what the enemy can bring against them."

The role of the row galleys on the Hudson River was to protect the chain and cables that were stretched across the Hudson River to prevent the British ships from going up and down the river. And here's something else. It's an invoice letter that actually lists the ships the Navy had built for the War. From these documents, I know that there were three Row Galleys on the Hudson River: the "Lady Washington," the "Putnam" and the "Independent." What I need to found out is, could our Captain Lewis have served as the Captain on one of these three Row Galleys?

Elyse: But what about the trumpet itself? Is it really a speaking trumpet used in the Revolutionary War? I've arranged to meet with someone in Washington D.C., who should know exactly what it is, Navy Museum curator Ed Furgol.

Ed Furgol: I think that we're looking at a custom-built trumpet that was made for a naval officer either on the rivers or lakes or even in deep-sea operations for the Continental Navy during the American Revolution.

Elyse: So a Captain would really stand on his boat and scream through this to talk to other people.

Ed: Yes. You have to understand that the ship that this may have been used on was about 80 feet long, and the captain wanted to communicate the whole length of the ship. And he would have been standing higher than his crew. But still it would have been necessary for him to be able to project his voice, and he'd need something like this.

Elyse: Speaking trumpets turn up so rarely that Ed has only seen about a dozen, one of which is in the Navy Museum Collection. This one is from the 19th century, from a frigate or sloop of wars. Ed, why are our trumpets so different?

Ed: Well, I think that yours is a customized trumpet as opposed to this one, which is a much more standardized one.

Elyse: So they were custom-made?

Ed: Yes.

Elyse: So Captain Lewis had this probably custom-made for himself and he probably asked for a very long trumpet.

Ed: Yes, he certainly did ask for a long one, because by standards of speaking trumpets that I've seen, this one that I have is by far the longest.

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Elyse: I need to be 100% sure our trumpet is from the 1700s, so I'm taking it to the Smithsonian Institution to have its materials and construction analyzed by Carol Grissom.

Carol Grissom: I'm going to take a very tiny sample, I think from the edge of this letter "W," and put it on a stub for elemental analysis in a scanning electron microscope.

Elyse: Elemental analysis tests the trumpet's materials at a molecular level. By figuring out the makeup of the paints and metals, we'll be able to tell if our trumpet is from the Revolutionary War period or not. I can see it on there.

Carol: I see it. It's good. Good sample.

Elyse: While the samples go to the electron microscope, the trumpet is whisked off for an x-ray.

Tukufu: I know about the Row Galleys, but now I'm on a hunt for the man himself, Captain Lewis. There's got to be something here in these naval records that will tell me if a Lewis was onboard one of these ships. I found a muster row, which is a crew list, for the "Lady Washington." "Lady Washington." Voila! I have Captain Abraham Lewis serving as Captain on "Lady Washington." I got him! On top of that, it says here that in July, 1777, the ship was based at Fort Montgomery, which lies between West Point and Fort Washington. So the trumpet's inscription is accurate. But I want to know about Lewis' role in the War, and the place to look is the Rare Book Room in the Library of Congress. I'm looking at a bound copy of "The Collector," a historical magazine. Even better than a mention, there are letters reprinted here that were written directly to Captain Lewis.

"Fort Montgomery, June 27, 1777. Abraham Lewis, Master of the Continental Frigate. General Montgomery is immediately to take command of the Lady Washington Galley". This is Captain Lewis being given his command of the "Lady Washington Galley." Abraham Lewis was appointed Captain 10 days after a British force had begun invading from Canada.

"July 12th, 1777." A letter by John Hodge: "Sir, you'll immediately put your vessel in "as complete order for a state of defense as you possibly can. "The men that I shall send onboard your Galley "are to be immediately under your command and follow your directions." So here he's being urged to get his ship ready for battle. Captain Lewis, get ready, the British are coming.

Elyse: Back at the Smithsonian, the trumpet's going through a whole battery of tests. And the x-ray results are in. Okay, so what do we have here?

Carol: The old metal goes down to here, and then you have -- the new and old overlap in that area. Here, you have only new metal and here you have new and old.

Elyse: The x-ray is good news. Aside from a modern repair, irregularities in the sheet metal suggest that it was hammered flat by hand, a method of construction common in the 1700s. The electron microscope results are good news, too. The trumpet is made of iron and there's red lead paint on the inside, both authentic 18th-century materials.

Tukufu: So the trumpet checks out and so does Captain Lewis. But did the Captain and his trumpet ever see action? This is a letter to Captain Abraham Lewis of "Lady Washington Galley." "The signal to be given on the appearance of the enemy "are the firing of two cannon by General Varnum "at Peek's Hill...to be answered by two from the brass 24-pounder near New Windsor."

Captain Lewis had his orders, and in October, 1777, his moment arrived. A British force was spotted sailing up the Hudson. Captain Lewis' trumpet could have been used to give the order to fire in the midst of battle. Cannon fire all around, the trumpet would have been very important in getting those orders to the seamen.

Facing overwhelming firepower, Captain Lewis heroically rescued retreating Americans, taking them safely upriver, away from the advancing British forces. Under his command, the ship continued to defend the Hudson at West Point until

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1778. After that, there are no more letters, so the trail goes cold. He was not famous, but Captain Lewis played his part in the struggle for American Independence, and his speaking trumpet was a crucial device for communicating in wartime. It may sound far-fetched, but that old trumpet is the great-grandfather of the high-tech military communication systems we know today.

Elyse: We've got some good news to share with the trumpet's owner, Howard schmolko. You asked us to find out what this is. I sure did. It's a speaking trumpet. I should tell you it's extremely rare. Our expert has only known of about 10 or 12 other speaking trumpets, so it's very rare, which we're really excited about. It was a tough one.

Howard: It validates my feeling about it, and that makes me feel really great.

Tukufu: And it shows you have a great eye.

Howard: A-ha, yeah, well, thank you.

Elyse: Howard, you asked me to go found out if the inscription on the trumpet was true, and I can tell you That Captain Lewis did exist and his name was Captain Abraham Lewis.

Howard: Abraham Lewis? You call him Abraham.

Tukufu: He served as a captain in the U.S. Navy and he served on a Row Galley.

Howard: So that makes sense. That ties right in with the inscription.

Tukufu: This inscription is correct. It's very likely that Captain Lewis used this speaking trumpet to give the order to fire during the Revolutionary War.

Howard: Well, I wish it could speak. It shows a lot of use, so it must have been through an awful lot, just like Captain Lewis went through an awful lot. That makes this piece very special and important, more than ever before, and that makes me real excited.

Tukufu: We've brought Howard's trumpet back to the exact spot on the Hudson where it saw action with Captain Lewis over 200 years ago.

Elyse: It's cold and wet, but that's just when the Navy needs its communication systems to work at their best. The famous battle occurred in October of 1777. Captain Lewis and his boat, "Lady Washington, engaged the enemy. In fact, that boat saved the day. In a fight with the British, the "Lady Washington" served and played a decisive role. The other ships were sunk and captain Lewis took his boat, collected everybody, all the other seamen and everybody else, and protected them from getting captured by the British and took them upstream.

Elyse: Right here. Right where we stand. He would have used this to give his orders and commands. This is the exact trumpet he would have used, and I'm holding it. Hello, out there! You ready? Gun 7, fire!

Elyse: Fire! Fire! After all these years, this trumpet still works. Let's look out this way. Ready? Fire!

Tukufu: Well, we've answered Howard's question and we proved that the inscription on his trumpet is accurate. But one thing still intrigues me: who wrote it in the first place? I guess we'll never know.



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### MORE ON MILITARY COMMUNICATION

Good military communication will win you wars, but what happened before satellites? Well, of course, there was the messenger. Trouble is, they didn't always make it. Speaking trumpets like Captain Lewis' were state of the art in the 1790s, but the technology really took off in the 19th century. First, you have semaphore, a signaling system based on waving a pair of flags. Each different pattern, a letter of the alphabet. Morse code was around as early as the 1840s, and it was used throughout the Civil

War. Possibly the most successful form of military communication: the carrier pigeon, and believe it or not, they received medals for bravery in World War II. But the armed forces would be nowhere without Mark Koenig. He pioneered wireless communication. By the end of World War I, radios were being used in the field for the first time. Since the 1960s, satellites have allowed instant communication with the most remote areas of the world and transformed warfare as we know it.

ENDS