



## Episode 1, 3D Cuban Missile Crisis, Dayton, Washington D.C. and Portland

Wes Cowan: Our first story examines a strange projection screen that may have played a crucial role in the Cuban Missile Crisis. October 14<sup>th</sup>, 1962, an American U2 reconnaissance jet takes pictures of what look like Soviet missiles in Cuba. Photo interpreters in Washington think they're nuclear missiles that could hit cities deep inside the U.S. The interpreters recheck their measurements and compare their data to everything they know about the Russian arsenal. The implication of these images is terrifying. If these are Soviet missiles, the world may be on the brink of nuclear war. But one critical question looms large – how can President Kennedy be sure the photos are accurate? A woman in Portland, Oregon thinks she's got just the thing that helped JFK make up his mind. Annie Dubinsky is the Director of the 3D Center of Art and Photography. Hi. How are you? Looks like a realist screen. Is that what it is?

Annie Dubinsky: Correct. An early 1950s Stereo Realist six by six foot silver screen.

Wes: Annie says the museum was given the screen from an anonymous donor in 2007. That donor got it from the Dayton Ohio Stereo Camera Club, a local group of 3D enthusiasts. Okay, this is a great 1950s screen, but so what? I mean, what's so special about it?

Annie: Well, we have this letter that came with the donation.

Wes: The letter from a club member says in 1962 they were approached by someone from nearby Wright-Patterson Air Force Base to borrow the screen. The reason?

Annie: We later learned it was used at the White House to project stereo views of the Russians landing missiles in Cuba for JFK.

Wes: Now that's a great story! So, I guess what you want me to do is to find out: is the story true?

Annie: Was this the screen used in 1962 in the White House to project stereo images for President Kennedy?

Wes: Before I get started, we take it for a spin. 3D works by mimicking the way we really see. You know, most people I guess don't know that if you want to project stereoscopic slides, you've got to have a screen that's made specifically for that.

Annie: Correct.

Wes: So how does this particular screen work?



Annie: Because you need to separate the left and the right images, if you're going to project a stereo pair and separate them, you need to use different polarizations.

Wes: We have to sort of cross the images to make them appear 3D and that's what this screen does, correct?

Annie: The screen, plus the glasses that we wear.

Wes: Oh, and I forgot the great glasses. The screen is too big to take with me, so some regular 2D shots will have to do. I can't imagine though that the Pentagon would have to ask a 3D club to borrow the screen to take to Washington to set up in the White House? I mean, I'm skeptical. I head to a coffee shop with an Internet connection to refresh my memory of the crisis. Even though I was just a kid in 1962, I remember the tensions between Kennedy and Castro were really running high.

*President Kennedy: I have directed the Armed Forces to prepare for any eventuality.*

Wes: Americans were stunned when Kennedy went on live TV to warn that the Russians had put nuclear missiles in Cuba. Across the country Americans scrambled to prepare fallout shelters. The fear of nuclear war suddenly became a terrifying possibility. Castro came to power in 1959. And although he had crushed the CIA sponsored Cuban rebels at the Bay of Pigs in 1961, he remained convinced the U.S. itself would invade Cuba, so he welcomed what he claimed were shipments of defensive weapons – Russian tanks and anti-aircraft guns. Then on October 15<sup>th</sup>, 1962, Kennedy saw high altitude photos taken by a U2 reconnaissance jet of what appeared to be Soviet nuclear missiles capable of hitting the U.S. It seemed certain that Castro and the Russians had lied. Here's some great stuff on the National Security Archive website from George Washington University. Missile trailers, launchers, tents. This is curious. It seems the U2 cameras were taking pictures that could be viewed in 3D. On the face of it, our story doesn't make sense. If the CIA was taking 3D pictures, you'd think they'd have all the tools they needed to view them. Why in the world would the Air Force want to borrow a viewing screen from a local stereo club. I'm going to look at that letter again. The local Wright-Patt Air Force Base contacted our club president in 1962, requesting the loan of it for unspecified purposes. Maybe someone at Wright-Patterson can help me get to the bottom of this. I'm lucky enough to locate Ben Jacobowski and I head to Dayton, Ohio. Ben was acting director of reconnaissance engineering at Wright-Patterson during the missile crisis. We meet at the National Museum of the United States Air Force on the Wright-Patt base. He tells me that even though the U2 images had first warned President Kennedy that the Russians were lying, those images had a problem.

Ben Jacobowski: The cameras in the U2 were high altitude, up to 70,000 feet, so the detail was extremely small. And when you had weather, clouds and storms and fog, and so on, it was not a good solution to get detailed photography. President Kennedy wanted some low altitude photography so there would be no question that the installations in Cuba were missile installations built by the Russians.



Wes: Ben shows me a secret star of the missile crisis, which helped solve those problems for Kennedy. What was the solution then?

Ben: Well, the solution was low altitude photography taken by a plane like this, an RF-101, The Voodoo. We got a call from the Pentagon and they said that the parameters of operation would be at 500 feet at 600 knots. That's going pretty fast and pretty low.

Wes: By flying at treetop level, the Voodoo was able to get under Cuba's cloud cover. But there was a problem – by flying fast to evade anti-aircraft fire, at this altitude their pictures would be blurred. To solve the problem, Air Force Chief of Staff, General Curtis LeMay, reached out to a man known as the father of aerial photography.

Ben: General LeMay said there's only one solution to this and that's to call in General George Goddard.

Wes: Brigadier General George Goddard was a pioneer and innovator in the development of aerial photography through three decades. For much of his career he was in charge of the photographic laboratory at Wright-Patterson Air Force Base. Well, now wait a minute, General Goddard? He was a World War II general, right? I mean, he was retired by this point, right?

Ben: General Goddard never retired from photography. He told Kennedy and LeMay that there's only one camera that will do the job that you want, and that's a low altitude, stereo strip camera.

Wes: So the veteran photo expert, Goddard, reached into his black bag of high tech camera tricks that were now some twenty years old. You're telling me that the brass wanted you guys to put an antique camera in this plane?

Ben: To do the job that President Kennedy wanted, this was the only way to get it, was using these type of cameras.

Wes: I tell Ben about Annie's screen. And have you ever heard of that story?

Ben: No, I had not.

Wes: But Ben says there's a guy still around who might know more. Bob Balcomb, who lives near by, is a 3D collector and was a photo interpreter at Wright-Pat during World War II. I arrange to meet him on the base at the old film vault building.



Bob Balcomb: This is the same technology that was used for the RF-101 flight. We have side by side images. One is for the left eye and one for the right eye. And, you'll notice here that we have a continuous image.

Wes: Bob explains how continuous image photography was the key to getting sharp focus in low altitude aerial pictures.

Bob: This in the middle.

Wes: He tells me how Goddard had come up with the idea in the mid-30s after meeting a man at a horse track who'd found an ingenious way to photograph the winner of tight races. A stationary camera at the finish line had film moving through it at the same speed as the racing horses. The moving film was exposed when it passed over an open slit behind the lens. This meant the image of the horses crossing the finish line would be in focus, while the background would be blurred. Goddard used this concept to detailed three-dimensional photographs from the air at low altitude, moving the film over two open slits matching its speed to the ground. It was the clarity that Kennedy needed.

Bob: They can take up at 200 feet in one shot.

Wes: Wow!

Bob: And they would map a heck of a large area in just one pass.

Wes: Bob suggests that maybe someone from the local Wright-Pat Base didn't know that the CIA U2s were also taking 3D images. Perhaps they decided that if the White House needed these old cameras, they might need a 3D screen too. It's still not making a whole lot of sense. I wonder if there's anyone left from Kennedy's inner circle who can help me? Any sort of reference of that screen.... Oh, now here's something. Here's this book by a guy named Dino Brugioni. In the late 1950s, Brugioni helped organize the National Photographic Interpretation Center under the direction of Arthur C. Lundahl. Brugioni was an eyewitness to the backstage drama of the missile crisis. Here's Brugioni describing a meeting between JFK and Lundahl. And he says that Kennedy looks Lundahl straight in the eye and says, "Are you sure about the missiles?" and Lundahl replied, "Mr. President, I am as sure of this as a photo interpreter can be of anything". Could it have been Annie's screen they were looking at? Now I know who to ask: Dino Brugioni himself.

Dino Brugioni: Come on in buddy.

Wes: We go through Dino's personal archive from those nightmare days in October and November of 1962. So all this stuff has to do with the Cuban Missile Crisis?



Dino: The Cuban Missile Crisis.

Wes: Including pictures from inside the White House.

Dino: There's Rusk. There's President Kennedy.

Wes: Dino makes it clear just how close we came to nuclear disaster. The nation probably had no real clue how serious this was, correct?

Dino: They didn't know until the President addressed the nation on the 22<sup>nd</sup>. And then they just kept getting more tense each day. And on October the 26<sup>th</sup>, what we call Black Saturday.

Wes: That was the day the Russian missiles were finally ready to launch.

Dino: All 24 missile sites were operational. Meaning that within four to six hours there could be missiles fired at the United States.

Wes: Holy smokes!

Dino: There was talk that the President might be moved to the underground, and I was to go to the underground. And, that night I called my wife and I said, if I call you one more time put the kids in the car and start out for Missouri, because I was convinced that by Monday morning we would be at war. And it was going to be a nuclear war.

Wes: On Sunday, the U.S. hears a broadcast from Radio Moscow that says the missiles will be removed. But the Soviets make no formal statement and our low altitude photography that day shows that no missiles have been withdrawn. Kennedy tells his generals to give them one more day.

Dino: And then, Monday we see that they're moving the missiles back.

Wes: The world breathed a huge sigh of relief, but the job was still only half done. Once again it was the pictures from the low altitude Voodoo aircraft that helped the President confirm the Russians were doing what they'd promised.

Dino: Now it was a big job of counting all those missiles back to Russia.

Wes: Dino, I mean, there's so many great photographs. I love this one.



Dino: That's the Voodoo. Took his own picture.

Wes: This is a blowup of one of the 3D photographs, right?

Dino: Yes.

Wes: I asked Dino about the briefings for JFK and his advisors. So what did you use to brief the President with?

Dino: Used the briefing board.

Wes: Oh, so it's a big...I mean, it's a big blowup of people...

Dino: 20 x 22. It has the identification of the target. It's heavily annotated to show the President what's on the briefing board.

Wes: And these things could be passed around a table then, right?

Dino: Oh, yes. Oh, yeah.

Wes: I've got a photograph here. And the person who's asked me this, that I'm doing this investigation for... I tell Dino about our screen and ask him if it could have been used to brief the President. Is that possible? It's time to get back to Annie with Dino's answer. I tell her about the use of the World War II era 3D cameras that had helped Kennedy in his decision making.

Annie: Really?

Wes: And I said "Could this screen have helped Kennedy make up his mind?" When I'd ask Dino whether Annie's screen had been used by President Kennedy to view the missiles at the height of the crisis, he had a simple answer.

Wes: Is that possible?

Dino: No, not at the height of the crisis.

Wes: The reason was clear...and a little surprising. To use the screen they'd have to turn the lights out.

Dino: The Secret Service doesn't like to have a darkened room with the President.



Wes: Because?

Dino: Well, because of security reasons. The Secret Service doesn't permit it.

Wes: The only photographs the President saw were two-dimensional, not 3D. They briefed them with enlarged photographs. I think 20 x 20 photographs that were put on an easel and then passed around. And Brugioni said that Kennedy would have a magnifying glass and would hold it over the photograph. And I said, could this screen have been used in one of those meetings. And he flat out said, no.

Annie: Alright. Well, that's the answer. It's still a wonderful piece of stereo paraphernalia and we are happy to have it in our collection.

Wes: It was a great investigation.

Annie: Thank you so much.

Wes: Goddard's old cameras were used only briefly during the crisis, but they did take one special picture – a view of a fully operational missile site that JFK framed and kept on his desk in the Oval Office. A powerful example of the pictures that saved the world from nuclear war.