

Tukufu Zuberi: Our first story takes us on an American road trip with a surprising detour to Nazi Germany. It's the early 1960s, and the American love affair with the automobile shifts into high gear when a brand-new invention comes on the scene: the car tape player. Now drivers can forget about the radio and play their favorite songs wherever and whenever they feel like it. But where did this new-fangled technology come from? A man in Opelika, Alabama, heard that it may have been born in Nazi Germany in the last days of World War II.

Robert: Yeah, if it turned out that this was historically significant, it would be totally fascinating, but even more fascinating to me would be just to know the truth.

Tukufu: I'm Tukufu Zuberi, and I'm here in Opelika to meet Robert and take a look at his tape player. Ooh, this has some weight to it.

Robert: Yes, I call it the '57 Chevy of tape players.

Tukufu: "Orrtronic." okay, yeah.

Robert: And it goes with this.

Tukufu: Okay, now, have you ever tried to play it?

Robert: No, no, I've been a little leery. I'd like to know if it plays, but I don't know.

Tukufu: Okay, what is it that I can find out for you?

Robert: Well, the first thing I'd like to know is that -- the story goes that this is the first commercially produced automobile tape player.

Tukufu: Okay.

Robert: And the other thing I'd like to know is about the tape itself. Supposedly, John Herbert Orr, the founder and the starter of all this, brought the formula for magnetic tape over from Germany in World War II from a Nazi scientist.

Tukufu: Now is there any information you can give me to work with?

Robert: Well, I know that the tape player itself was built right here in Opelika. This Orrtronic Company is the second of John Herbert's companies, so he was a fairly well-known local, successful businessman and entrepreneur.

Tukufu: All right, I'll get back to you soon.

Robert: Thanks a lot.

Tukufu: It looks to me like Robert's tape player is from the late '50s or early '60s. Back then, American society was undergoing a transformation in urban geography. Construction of suburban housing and development prompted the laying of thousands of miles of highway and the manufacturing of millions of new automobiles. Post-war America was a driver's paradise, and these drivers wanted the freedom of choice to listen to their favorite music, including some of the radical new sounds flowing from the culture. If this Orrtronics machine

was the first car tape player, that means it came before the 8-track format. When I was in college, 8-track was the most popular system, both for car and home. Later on, compact cassettes took over, and 8-tracks faded into pop culture history. Just where does this tape machine fit into that history?

"Orrtronic tapette." I don't know quite what to make of this tape. The player has this mount on top, and I could see how that could be mounted underneath the dash. That part of the story makes sense. "manufactured by J. Herbert Orr enterprises, incorporated, Opelika, Alabama." And on the front, we have a pretty simple design. Okay, wait a minute. Let's see. There's a series of teeny embossed numbers inside the deck: patent numbers. Back at my hotel room, I run a search on the numbers. "November 3, 1959. Tape feeding apparatus for magnetic sound recording and reproducing mechanisms. Inventor, Bernard A. Cousino." No mention of John Herbert Orr here. Clearly he wasn't the patent holder. I do a little digging and discover that Cousino was one of the first guys to invent a magnetic tape cartridge. Still, this doesn't look anything like the tape Robert gave me. I'm meeting an historian of technology at Georgia Tech University. I wonder, what can he tell me about Robert's tape and tape player? David Morton is the author of *Sound Recording, the Life Story of a Technology*. I ask him how car sound systems got started.

David Morton: So even as early as 1956, there was something introduced called highway hi-fi.

Tukufu: And what was that? Is this for real? A record player under the dash.

David: Oh, yeah. They figured out a way to keep the needle from skipping most of the time, but it wasn't very convenient, and you could only get it in a Chrysler. So, you know, other inventors were out there and they started using magnetic recording tape instead.

Tukufu: That led to the development of the 8-track cassette tape player, designed by Bill Lear, the guy behind the Lear jet. I'm interested to know if you're familiar with this machine.

David: That is an automate tape player made by the Orrtronic company probably about 1964.

Tukufu: Was this made exclusively for the car?

David: Yeah, it was intended to be installed sort of up under your dash.

Tukufu: Now, there must be some reason why I know about the 8-track tape and I know nothing about the automate.

David: Well, you might get a sense of what this was all about from looking at their catalog.

Tukufu: Dave has an original copy of the Orrtronic spoken-word tape catalog from 1964. You have Norman Vincent Peale, Billy Graham.

David: Yeah, you have some big names there, but the Orrtronic catalog included a lot of these religious tapes reflecting John Herbert Orr's deeply held Christian beliefs.

Tukufu: Orr tried to combine doing business with doing the work of God. His automate barely makes it over the Mason-Dixon Line. Bill Lear, on the other hand, had friends in other high places, the boardrooms of corporate America.

David: Bill Lear was successful in striking up a deal with the Ford Motor Company to install the players in cars; also, the Motorola Company to make the players; and the RCA Victor Company, which agreed to issue

some of its catalog on 8-track tape.

Tukufu: The result: over 70 million 8-track tapes were sold from 1967 to 1980. You said the automate predated the 8-track. What I really want to know is, was this the first car tape player?

David: No, it wasn't.

Tukufu: It wasn't.

David: You know, about 1962, a couple years before this came out, out on the West Coast a guy named Earl Muntz introduced this system called the Stereo-Pak. That was a 4-track tape cartridge, very similar to this.

Tukufu: Does that mean that this automate is relatively unimportant?

David: I guess, in the history of technology, this is pretty much a -- a little footnote.

Tukufu: A footnote. Not exactly what Robert was hoping to hear about the automate.

David: But John Herbert Orr, the man behind this, he's worth remembering, not so much for his tape player, but for his tape, because he was a pioneer in the tape industry.

Tukufu: Really? What way was he a pioneer?

David: He was -- well, he was one of the first people to manufacture magnetic recording tape in the United States.

Tukufu: Maybe there is something to Robert's extraordinary story, that Orr got the formula for magnetic tape from Nazi Germany. Dave told me my next stop should be Auburn University. They have a collection of Orr's papers cataloged after his death in 1984. This says that John Herbert Orr was a high school dropout who taught himself electrical engineering. Here's a picture of him at age 34. Then I discover something intriguing. In 1981 and 1984, a graduate student interviewed Orr about his work in radio in the '30s and the '40s, so we have an opportunity to hear the man's story in his own words. Orr started the first radio station in Opelika, so he was one of the guys there at the beginning of the radio age here in Alabama.

Interviewer: Well, how did you end up on General Eisenhower's staff?

Tukufu: Eisenhower and psychological warfare. Robert's story is suddenly sounding a lot more credible. Maybe Orr's magnetic tape business really did have some connection with Nazi Germany. But Orr doesn't say any more about it on this tape. To find out more about Orr's service in the psychological warfare division, I've ordered military documents from the national archives in Washington, D.C. In the meantime, I'm getting up to speed on the history of psychological warfare.

Tukufu: Germany, 1933. Hitler's propaganda chief, Joseph Goebbels, seizes control of German radio, press, cinema, and theater. The message is clear: Hitler is a veritable God, and Germany's destiny is to rule the world. In early 1944, General Dwight Eisenhower uses Allied propaganda to fight back, authorizing the U.S. Army to form the Psychological Warfare Division. The division gets its anti-Hitler message across using mobile radio transmitters, loudspeaker broadcasts, and leaflet drops. But what was John Herbert Orr's role in this division? My documents from the National Archives have arrived. There are a lot of interesting declassified papers from the Psychological Warfare Division here. But so far, nothing about Orr. What we have here

are documents referring to a Radio Luxembourg. Apparently, the Allies took over a radio station that had been run by the Nazis. The Psychological Warfare Division put the former Nazi station back on the air, but now it was broadcasting Allied propaganda. Wait a minute. "16 May, 1945. Use of Luxembourg shortwave transmitter for relay broadcast." A little bit of technical information. Here it is. J. Herbert Orr, our guy, signed it. That's a good start. Let's see what else we can find. I find nothing else about John Herbert Orr, and nothing about magnetic tape formulas or exchanges with German scientists either. Is there anything to Robert's story about Orr getting magnetic tape technology from the Germans? I decide to head to the East Alabama Museum in Opelika to meet the man who cataloged Auburn University's collection of Orr papers. I'm hoping Peter Branum will know something about Robert's story. I'm having a hard time finding documentation on Orr in World War II. I do know from a memo that he was a deputy chief engineer and that he worked at Radio Luxembourg. The record dries up after that.

Peter Branum: It sure does. It's probably because most of the records, if not all of them, were destroyed in a fire in a government records center in 1973.

Tukufu: A fire at the National Personnel Records Center in St. Louis on July 12, 1973, destroyed 16-18 million official military personnel files. A lot of military history research has been frustrated by the losses from that fire.

Peter: Almost everything we know about this part of Orr's life comes from stories that he told and repeated again and again.

Tukufu: Really? Now what stories have you heard?

Peter: Well, I've heard his main job was to monitor Nazi broadcasts, propaganda broadcasts, primarily speeches, that were heard day and night of Adolph Hitler. They knew they couldn't be live, but the recordings were of a fidelity level that was heretofore unknown. I want to show you a machine that he found there that truly changed the history of recording.

Tukufu: What Peter showed me answered my questions about John Herbert Orr and the development of magnetic tape recording. I'm headed back to Robert's place to tell him everything I learned. This was not the first car tape player.

Robert: Well, I mean, that's the story. The story is the story. That's what I wanted to hear.

Tukufu: The investigation of the car tape player led me to an investigation of the evolution of the magnetic tape. And in that evolution, John Herbert Orr was a pioneer.

Peter: This is a 1935 Magnetophon which was captured by Orr and his men at Radio Luxembourg.

Tukufu: 1935. You know, this looks like a contemporary tape recorder.

Peter: It really does. When Orr and his men listened to this, they could not believe the quality of the sound they heard.

Tukufu: Orr saw the commercial possibilities from such high-fidelity recording. He contacted a leading German scientist, Karl Pfleumer, from the I.G. Farben Corporation. Pfleumer gave Orr the formula for German tape. That formula became the recipe for Orr's business success when the war ended.



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Peter: Orr, and some of his associates, took these out of Germany, brought them here to the United States, and began duplicating this technology, and thus opened a new chapter in American recording history.

Robert: It was just a tall tale until you guys put reality to it, and that's what I was looking for, was the real story. Thanks so much; that's awesome.

Tukufu: My pleasure. This industrial park in Opelika is where John Herbert Orr opened his tape plant after World War II. Until it closed, it was the only place in the United States still manufacturing magnetic recording tape. The automate wasn't the commercial success Orr had hoped for, but, by pioneering magnetic tape technology, John Herbert Orr left his mark as a true innovator in American recording history.