



Episode 243 – Bob Sumption – W9RAS

Transcription Funded by : Gregory Popelas VA3CBN

Eric, 4Z1UG:

QSO Today episode 243, Bob Sumption, W9RAS. This episode of QSO Today is sponsored by Icom America, makers of the finest HF, VHF, and UHF transceivers for the radio amateur. Icom is excited to announce the new IC-9700 VHF/UHF and 1200 megahertz all mode transceiver. More on this later, and by QRP Labs Hans Summers, G0UPL's kit company, and the creators of many fine radio kits, including the popular QCX transceiver kit. Please support the QSO Today podcast by supporting these fine sponsors. Links to both are on this week's show notes page.

Welcome to the QSO Today podcast. I'm Eric Guth, 4Z1UG, your host. My QSO Today is with Bob Sumption, W9RAS, who was raised on Popular Electronics and Popular Mechanics magazines, learned how to fix anything from his father, and finally became a ham radio operator in the '50s. Bob was an electronics technician at Heathkit, who assembled the first and only prototype SS9000 synthesized HF amateur radio transceiver. Bob is a consummate, long-term big project builder who shares his success, knowledge, expertise, and history with us in this episode of QSO Today.

W9RAS, this is Eric, 4Z1UG. Are you there, Bob?

Bob, W9RAS:

4Z1UG, this is W9RAS. Go ahead, Eric.

Eric, 4Z1UG:

Bob, thanks for joining me on the QSO Today podcast. Can we start at the beginning of your ham radio story? When and how did it start for you?

Bob, W9RAS:

Well, I built my first little one-tube radio when I was nine years old out of plans that I found in Popular Mechanics, and that got me interested. My father then subscribed to Popular Electronics magazine, which I just waited every month just anxiously for it to come, and from there on, it just blossomed.

Eric, 4Z1UG:

So Popular Mechanics was already a feature in your home and you picked it up because your father read it?

Bob, W9RAS:

Yes.

Eric, 4Z1UG:

Did he have an electronics workshop in the house?

Bob, W9RAS:

No, he didn't. He was a florist.

Eric, 4Z1UG:

Really?

Bob, W9RAS:

Yes.

Eric, 4Z1UG:

I'm just curious. Why would he get Popular Electronics?

Bob, W9RAS:

Oh, he got the Popular Electronics I'm sure to help me with my interest. The Popular Mechanics was one of his interests. He just liked to read the articles about new mechanical things.

Eric, 4Z1UG:

You grew up in Michigan?

Bob, W9RAS:

I grew up mostly in South Bend, Indiana.

Eric, 4Z1UG:

In those days, we're not quite contemporaries. You're a little bit older than I am, but I recall that all the male people in my family were fixers. I think that that was probably the era post-war when everybody fixed their own stuff. That may have been the reason that Popular Mechanics was lying around the house.

Bob, W9RAS:

Yeah, absolutely. Our family, the Sumption family, is known to be a family of, the men anyways, of fixers. We tackle most anything and work on most anything like cars, radios, televisions, lawnmowers, whatever.

Eric, 4Z1UG:

Do you think that was a generational thing? Do you think that all of your neighbors were fixers at that time?

Bob, W9RAS:

Not really. Not as much as we were, but yes, some of them were really good at fixing things and doing things, and you did a lot of things that way. You kept things working. You didn't always go out and buy a new and throw things away like a lot of people do today.

Eric, 4Z1UG:

Things were a lot more expensive I think in those days.

Bob, W9RAS:

Yes. It sounds like it might be cheaper, but then back in the 1950s, people might be working for \$40 a week or something like that, and that's tough to keep a family.

Eric, 4Z1UG:

Right, and I think in the '50s, Collins, was it R390 receiver, something like that, was close to a thousand dollars.

Bob, W9RAS:

Yes.

Eric, 4Z1UG:

All right. So that was almost a year's worth of wages for some people.

Bob, W9RAS:

Yes, it was. They made the 75A4 and KWM1, I think, KWS1 kilowatt linear that went with it.

Eric, 4Z1UG:

Here you are a nine-year-old with a one-tube AM radio, I think.

Bob, W9RAS:

Yes.

Eric, 4Z1UG:

So what happened after that?

Bob, W9RAS:

Well, after that-

Eric, 4Z1UG:

You're getting Popular Electronics magazine. Did you start to build the projects in it?

Bob, W9RAS:

Yes. I used to build projects. I remember I had a huge, huge box of projects that I had built, and a large portion of them, which didn't work, but I was learning, and that was the important thing. I was just fascinated with electronics. I couldn't wait to get home from school to get to work on some electronics project. I built my very first transmitter that I got on the air with. It was a Hart 25 transmitter, and I believe the plans for that were in Popular Electronics. I'm thinking 1955 Popular Electronics magazine. I built that transmitter. I didn't have an antenna up. I didn't have any feed line. I found some rubber covered twin lead, twin wire that was used for telephones to go to the house, and I found-

Eric, 4Z1UG:

Oh, drop wire.

Bob, W9RAS:

Drop wire. yes, I found some of that laying beside the road I think it was, and I picked it up and brought it home. I used that as feed line for a dipole and strung a dipole in the yard and got on the air with that, with the Hart 25, which put out about six watts. I remember calling CQ and I called CQ and the station came back to me just strong and clear. I was so nervous and excited. I couldn't answer him on CW. I just couldn't do it. So I shut the rig off.

Eric, 4Z1UG:

So when did you get your first license and how old were you?

Bob, W9RAS:

I got my first license in 1958. I was 16 years old. I was going to high school. They had an amateur radio club in the high school, and that's where I started working on getting my amateur radio license.

Eric, 4Z1UG:

Now, besides the encouragement that your father gave you in electronics, did you have any other Elmers or mentors that helped you along?

Bob, W9RAS:

Oh, yes. When I was stringing that dipole antenna in the yard, a gentleman stopped. I saw a car pull up and he comes walking across the yard and he was a great big guy. He walked up and he said, "Hi." He says, "I'm Don Smith, W9EPT," and he says, "What are you doing here, young man?"

I said, "Well, I'm stringing up an antenna for my shortwave radio."

He said, "Oh," he says, "Well, I'm a ham radio operator." He says, "I'm one of your neighbors." So we were talking and he said, "What are you working on?"

I said, "Well, I'm building a ..." I think it was called a twinplex regenerative receiver, used a 6SN7 tube, and I told him, I said, "I got everything for it, but," I said, "I don't have a 6SN7 tube."

The next day then, he stopped by the house on his way home from work and reached in his pocket and he handed me a nice, good-looking 6SN7 tube. He says, "I tested it. It's good." So that was the start of an Elmer relationship with Don Smith, who was a really good ham.

Another ham that helped me out a lot was W9MCJ. His name was Arthur Bauemfeind. Arthur Arthur Bauemfeind was one of the best CW operators I'd ever seen. He had, as I recall back in 1957 when I met him, he had 360 countries confirmed on his DX list. So he was the one that really got me interested in CW. I had tried to learn code. I had tried tapes. I had tried records. I even tried one of those old, old paper tape machines that the military used.

Eric, 4Z1UG:

The Instructograph.

Bob, W9RAS:

Yes, yes, Instructograph. That's the word. It didn't take. I just couldn't get it. He said to me, he said, "Why do you suppose they have the novice license?"

I said, "What do you mean?"

He said, "The novice license is for beginners." He said, "You are a beginner." He said, "What you need to do is take your equipment, turn it on and make a contact." He said, "Make one contact a day." He said, "It could be a 15-minute contact. That's okay. Make that contact on CW once a day," and I did that. Then after about a month, I got on the air and I was listening to W1AW code practice on 40 meters, and they got up to 15 words a minute and I was still copying, and I thought, "Holy cow! This is great," and all I had to do to achieve that was to get on the air.

Now, I made a lot of mistakes, but the guys on the air, they know what you're doing and they don't mind the mistakes. They've been through that too. So that would be one of the things that I would tell a new guy. If you want to learn CW, if you got a license, get on the air and make a brief contact every day, and before you know it, you'll become a CW operator.

Eric, 4Z1UG:

Now, do you copy in your head?

Bob, W9RAS:

Yes, I do. I don't have a machine to read CW at all. I just copy in my head, and sometimes I know one day I was down here on the exercise bike and I hear these guys going along and the one fella made some ... I forget what it was. He's talking about a Heathkit on CW and he wanted to know this or that, and he's asking the other guy and the other guy really didn't know. So then I got onto the internet. I looked his call letters up on qrz.com and clicked on his email address and I sent him an answer for his Heathkit question, which surprised him.

Eric, 4Z1UG:

Did you find that there was some transition that you had to make when you stopped copying the CW and writing it with a pencil or pen and doing it in your head? Was there some big change that you had to make?

Bob, W9RAS:

There was a change, but it didn't seem to be a really big change. When I first started copying in my head like that, I would just do that with stations I was working that were going along nice and slow. I consider myself to be a slow CW operator. I'm usually going on along about 13 to 18 words a minute right in there. I can copy a little faster than that. I did copy 20 words a minute. I got 100% on the 20 word per minute code test, which was required back in 1986.

Eric, 4Z1UG:

For the extra class?

Bob, W9RAS:

Yeah, that's when I got my extra class.

Eric, 4Z1UG:

What was your first rig?

Bob, W9RAS:

Very first rig was a BC348 receiver, which you see one right over here, but that's not the one I had then. The one I had then I modified it severely, took it all apart and did all kinds of things to it, which I do not recommend. They are a great receiver just as they are, but I had read this article on band spreading your BC348. I took it apart and changed the dial and everything else in it, and that one I-

Eric, 4Z1UG:

So leave it stock.

Bob, W9RAS:

Leave it stock. So I bought another one in 1972, which was stock, and there it is sitting on the shelf there and it works every time I turn it on there. Just a great piece of equipment.

Eric, 4Z1UG:

What's the transmitter in the first rig? That was the one that you built from the magazine or did you have something else?

Bob, W9RAS:

That was a one tube transmitter, the Hart 25. That was a 6W6, I think. It was a transmit tube. A 6V6 is the same thing, which is basically an audio tube. Like I say, put out about six watts. I do have an interesting story about that. My daughter lives out in Colorado. She lives on the side of the slope leading up to Pikes Peak, and she is at an altitude of 9,100 feet in the pine trees there. So we went to visit her and I strung an 80-meter dipole in the pine trees and brought the coax into the house. Then some of my friends would get on NI9Y, Dan Caesar, in Mishawaka, Indiana. He gets on about 6:00 in the morning on 3552 CW on 80 meters.

So I knew he was on. So I had to get up at 4:00 in the morning because there's two-hour time difference between here and Colorado. I got up at 4:00 in the morning, I was using a Yaesu FT-857S, the receiver, and the little Hart 25 transmitter, which I reconstructed here. I've got it sitting over on the shelf over there. I had that connected as the transmitter with a 3552 Crystal, which I had ground myself. Then I gave him a call and he was just so excited when he heard my signal from Colorado. It was I think about 1,200 miles and I talked to him for quite a bit then with that and running about six watts. So that was very exciting.

Eric, 4Z1UG:

You had the 857, which is, what, 100 watts to fall back on if you needed to?

Bob, W9RAS:

Yes.

Eric, 4Z1UG:

For that contact?

Bob, W9RAS:

Yes, I could do that. I could do that if I needed to and there wouldn't have been any problem, but he copied the little six watts just fine. He said it was coming in. What did he say about a 569, something like that? It wasn't bad.

Eric, 4Z1UG:

Did ham radio play a part in the choices that you made for your education and career?

Bob, W9RAS:

Absolutely. Absolutely. When I was in high school, while most of the kids around me were getting ready for college and things like that or looking forward to working somewhere, I had my eyes set on a career in electronics. Specifically at that time, I wanted to get into broadcasting. So I wanted to get my broadcasting license and I worked towards that goal and I got my broadcasting second class license, and then I was going to go and get my broadcasting first class license, and then the FCC dropped the first class license.

So I never did get the first class, but I did get the second class. I did work in a television station for a little less than a year, and I got out of that because it was crazy, the hours that you had to work. You had to go and work on the transmitter and things at 2:00 in the morning because you couldn't do it while it was on the air. Then they had us doing repair work and things, and monitoring the equipment during the holidays and all. When other people would be off, I'd be at the TV station working. So I thought, "I don't like this." So from there, then I found the job at Heathkit and that was the best job I ever had.

Eric, 4Z1UG:

Now, this message from Icom America. I'm so excited to be able to tell you about the new Icom IC-9700 SDR transceiver. Icom had in mind the weak signal operator when it applied its DSP and direct sampling technology to the IC-9700's receiver design, allowing the operator to dig out the faintest signals from moon bounce and meteor scatter contacts. The Icom IC-9700 is a triglycerides-band, a VHF, UHF, and 1200 megahertz transceiver. Operating modes include AM single sideband, FM, CW, RTTY, and all of the digital modes. You can even use the IC-9700 to talk on the local D-STAR repeater, making it an ideal rig for exploring the amateur bands two meters and above.

For the satellite operator, the IC-9700 has dual independent receivers that allow full duplex cross-band operation with normal and reverse tracking and 99 memory slots for your favorite satellites. The IC-9700 is beautifully appointed with an almost identical footprint to the IC-7300. It will make a beautiful sidekick to your current HF rig in your shack. With its 4.3 inch color touch screen, you can easily control the rig and find the band activity using the waterfall display.

To learn more about the IC-9700 or any of the other fine Icom products, go to www.icomamerica.com/amateur or click on the Icom banner in this week's show notes page. When you visit your local Icom dealer to purchase your IC-9700, be sure to tell them that you heard about it here on QSO Today. Now, back to our QSO Today.

On your QRZ site, there's a mention, more than a casual mention that you worked at Heathkit. Can you talk a little bit about the history of or the background of Heathkit's for maybe the younger listeners that may not remember Heathkit and what role you played there?

Bob, W9RAS:

Yeah. Well, Heathkit company itself was started by Ed Heath, and that was back in the 1940s, and originally started out, he was making kit airplanes. One of the most famous was a Heathkit parasol. It used a four cylinder Henderson motorcycle engine, and it was a plane that you could build yourself. I think you could build the whole thing for about \$700. He produced those for quite a while.

Then when World War II ended, there was a flood of surplus tubes and parts that hit the markets in the surplus stores in the United States, and there was just tons of it, and you could buy things so ridiculously cheap. So he purchased large quantities of surplus parts and started manufacturing kits. One of the first kits, I believe, was a little three-inch oscilloscope, and it used a tube that they had used in radar sets during World War II. So from there, they branched out and started making all sorts of things, kits like the Heathkit AT1 transmitter for amateurs. Then started making all sorts of kits for the home, stereo, televisions and things.

Heathkit was such a wonderful place to work. The people were very, very nice to get along with. We had a large group of amateur radio operators for one thing, and the company had different policies from a lot of places. For example, if you were an employee of Heath company and you had a stereo, Heathkit stereo, and you needed a part for that stereo, let's say you needed a couple of knobs or whatever for that stereo, well, you just went in and you'd tell your boss, "I need a couple knobs for my stereo," and he'd say, "Well, go get them out of the parts."

The first time that happened to me, I said, "Okay. Where do I pay for them?" He says, "You don't pay." He said, "If you're an employee and you have a Heathkit and you need a part," he said, "the company provides it to you free of charge." So I love that.

Eric, 4Z1UG:

So Bob, how did you get the job with Heathkit?

Bob, W9RAS:

Well, I was working for a school in Berrien Springs, Michigan. I was doing the audio/visual maintenance and repair actually for five schools in the Berrien Springs area. That job I got by ham radio too. I found myself out of work one day in South Bend and the company I worked for, the employees were union and they decided to strike. Well, they had a strike all right, and it went on and on and on and on, and we had used all of our savings up in that strike. I'm talking to one of my friends on six meters and he says, "Well, why don't you come up here?" He says, "I teach at the school up here," and he said, "They need somebody to do some repair work on the audio/visual equipment."

I said, "Well, I could do that."

He said, "Sure, you can." He said, "Well, come on up here and talk to us."

So I went up there and talked to them, and they hired me for two weeks. I fixed, I think, 45 movie projectors is one of the things, and lubricated them, and checked them out for proper operation, and cleaned them, and got them ready for the next school year. Then

the principal of that school came around on the last day I was there, and he says, "How'd you like to go to work full-time?" I said, "Sure." So I was there for eight and a half years.

So that's the job I was doing before I went to work for Heathkit. Then he came around, the principal again, and he said, "They are cutting your wages."

I said, "What do you mean?"

He said, "Well, your money that pays your wages comes from the state of Michigan." He said, "The state of Michigan has cut that fund." He says, "We won't have the money." He said, "So in a very short time," he says, "we're going to have to let you go."

So that weekend, I went to a ham fest in St. Joseph, Michigan by the Blossomland Amateur Radio Association or BARA they called it. Here was a gentleman handing out yellow eight and a half by 11 leaflets and it said, "Come to work for Heathkit. We need repair technicians." So I went in and applied, and the next thing I know, I was invited out to lunch by the boss of the electronic service department for amateur radio equipment, and he asked me. He had a schematic. He said, "What's that part?"

I said, "That's capacitor."

He says, "What's this part?"

I said, "That's a tube," and so on. So then he said, "Okay. We'll hire you."

So I went to work there as a service technician. Since I was so into Heathkits, I had built a lot of Heathkits. I really did good as a service man, and I'm working there as a service man. I'd been there for over a year and they put a notice on the bulletin board that they needed a new technician in the engineering department. The job was an engineering lab technician.

One of the things about Heath company that was so great was you did not have to have a college degree in electronics. They would give you a chance at a job no matter what your schooling was. So if you said, "I can do that job," and you applied for it, they would give you a chance. So they interviewed me for that job, for the electronic technician in the laboratory, and told me that, "We will hire you in here for two weeks. If you do a good job for two weeks, then we will put you on as a regular engineering lab technician."

So I said, "Okay. I'll do that."

Then I find out that what they wanted me to do was to assemble the very first Heathkit SS9000, which was a large synthesized HF radio. It was the first one that Heathkit had come out with. It had digital readout. It had dual VFOs. It had variable pass band tuning. Actually, it was in steps. The pass band tuning was in steps, and it was 100 watts output, and had fluorescent tube digital readouts.

So they put me in this little office or cubicle with a desk and a workbench, boxes of parts, and these huge blueprint type schematic diagrams. They were not regular printed schematic diagrams. They were made on a blueprint machine. They were a little blurry and hard to read in places. They also had mistakes on them and all. They were just drawn up by the engineering staff.

Anyway, so I sat down with all this at my desk on the very first day and I thought, "Oh, my golly! What do you do now, Bob?" I thought, "I'm going to pretend I have a Heathkit manual in front of me. What would they do first? First, they would assemble the chassis." So I grabbed all the metal chassis parts and I put them together and I had a chassis. So then I thought, "Well, next, they would have you putting parts in the circuit boards." So I took out a circuit board and all of the Heathkits circuit boards were screened with the part values right on the board. So all I had to do was find these parts and then put them in the board and solder them in and I had the boards all completed.

Then I needed a wiring harness. I spoke to another one of the lab technicians. His name was Bob Hutchins. Bob Hutchins was an expert on making wiring harnesses. Bob Hutchins says, "Don't worry about the harness. I'll take care of that." He got the blueprint for the harness, and he put a whole bunch of nails on a board and he strung the wires around and he wrapped it with wrapping cord that they tied the harnesses with and, "There you are, Bob. I got you a harness."

So I built the very first SS9000. I completed it in a little over a week. I had two weeks to do it. My boss, head of engineering there, his name was Earl Harris, the engineer I worked under was Gerry Tolsma, was his name. Both of them, they were just elated that I had completed that so quickly and got it working right off the bat. So that was my entrance into Heathkit engineering.

Eric, 4Z1UG:

What year was that?

Bob, W9RAS:

Oh, that was 1981.

Eric, 4Z1UG:

What happened to the SS9000?

Bob, W9RAS:

Well, that is quite a story too. That SS9000, when I left Heath company, Zenith was selling everything out and they were laying people off right and left.

Eric, 4Z1UG:

As a way of history, what you're saying is that Heath was sold to first Schlumberger, right? Then-

Bob, W9RAS:

Then Zenith.

Eric, 4Z1UG:

Then Zenith. I remember this was in the late '70s, early '80s.

Bob, W9RAS:

Early '80s.

Eric, 4Z1UG:

Early '80s, okay.

Bob, W9RAS:

Early '80s. I remember when Zenith bought the Heathkit corporation, they sent an executive to talk to the entire employees group, and they told us, "We're not going to change a thing." Well, that lasted about two weeks, and they started laying people off and getting rid of departments and all sorts of things like that. So that was pretty much-

Eric, 4Z1UG:

That was the end. What happened with the SS9000 then?

Bob, W9RAS:

Okay. Now, the SS9000 and all that equipment, I was told at that time that it had been sold as scrap to a scrap dealer, and I never followed up on it at that particular time, but it was the year of 2012, as I recall. I was cruising through eBay just looking at things, and I always would look up Heathkit to see what was there. Here was, first of all, the Heathkit SS8000 was listed. Somebody was selling it. I thought, "Wow," because the SS8000 was sitting on the workbench in front of me when I was assembling the SS9000 at Heathkit. It was already completed by the people that worked there before me in that department. So it was done.

So they had that one there, and that project was dropped because of the WARC bands. They had had the WARC conference in 1979. Heathkit had a six-band fully synthesized transceiver, the SS8000 ready to go as a kit. It was all set to sell. Then the WARC conference came along and the people at Heathkit said, "Oh, my golly! This is a six-band transceiver, now we got nine bands." So they decided just to drop it.

Eric, 4Z1UG:

So the 9000 then, the SS9000 was the SS8000 with the WARC bands in them.

Bob, W9RAS:

That's right. That's right, and it's the same concept, the same type of synthesizer. Many of the same boards are in there.

Eric, 4Z1UG:

The look is the same.

Bob, W9RAS:

Yeah, yeah, the look is the same. It's a gray front panel where the 9000 was a brown front panel, but basically, inside it's the same with just more bands added onto it.

Eric, 4Z1UG:

Let me take a quick break here to tell you about my favorite amateur radio audio podcast, the Ham Radio Workbench podcast with George, KG6VU, and Jeremy, KF7IJZ, where they pursue topics, technology, and projects on their ham radio workbenches every two weeks. George and Jeremy document their projects and make circuit boards available for sale to their listeners. They have interesting guests and go in deep.

Even if you're a seasoned ham radio builder or just getting started, be sure to join George and Jeremy for the Ham Radio Workbench podcast. Use the link on this week's show notes page by clicking on the image. Now, back to our QSO Today.

Now, you said they were all ready to go with the SS8000. Did that mean that they had kits already in stock?

Bob, W9RAS:

They had made three what they call proof builds or I would call them prototypes kits, and I have one of the original manuals here from that. It's all beat up. It's a mess, but it's the manual. Anyways, they had those three that were built, and they built them in the plant. They had selected three employees who were amateur radio operators. W8LHP, Bob Mann was one of those, and I don't know who the other two were, but I know Bob Mann told me that he had put one together, but those were actually scrapped, taken apart and scrapped. So they didn't exist anymore.

So then there was just the one left, and that one along with five of the SS9000s were sold to this scrap dealer. Then a gentleman went into the scrap dealer. I have no idea who he was. He saw them there and he bought all of them and he stored them in his basement or his garage or something for all that time. Then about 2012, he decided to sell them on eBay. So he put them on eBay.

So I bid on the SS8000. I paid too much money for it, but I bought it because I thought it was a historical piece of equipment that should be preserved. Then when I get it, I find out that the wiring had been all eaten by mice and the circuit boards had been damaged. It had corrosion, it had rust, it had all sorts of things wrong with it. Some of the circuit boards were actually broken, some were missing.

Anyhow, so that's why I spent 206 hours restoring it because of all these problems. It was an extreme severe basket case, but really enjoyable to get it going. Every time I turn it on, I'm amazed because actually when I started to restore it, I did not think I was going to get it to work.

Eric, 4Z1UG:

Bob, what did you do? If the unit was in the condition that you say it was in, did that mean that you actually had to maybe fabricate boards?

Bob, W9RAS:

Yes.

Eric, 4Z1UG:

To replace the boards that were broken, and how much attention did you spend to the historical accuracy?

Bob, W9RAS:

Well, at first, I thought I would fix everything up. You could get the circuit boards. I mean, the chassis was copper plated and all. I thought, "Well, I could get it re-copper plated and I could do this and I could do that," and I decided, "No." For historical accuracy and as a, how should I put it, antique sort of thing. I thought it should maintain the patina, whatever they call it, of being that old. So I put it back together as is.

I cleaned up things, of course, but you can still see the scratches and the marks on the cabinet from there sliding it around on the workbench and things like that. They did a lot of that at Heath company. They put it up on this wooden workbench and they'd slide it around, and so it had scratches and things on it, and I thought, "That's character." So I decided to leave that the way it was, but to get it operating and maintain it. So that was my goal, and I achieved that, and like I say, that really surprised me.

Eric, 4Z1UG:

Are all those rigs operational?

Bob, W9RAS:

Yes, yes. It's very enjoyable for me to turn on the SS8000 and talk to people or work them on CW. I used the SS8000, almost exclusively for the 2016 Michigan, what do they call it, Michigan Roundup. It wasn't a sprint, no, but anyhow, I used it for that contest, the Michigan contest, and found that I had scored the highest for my county and I was using the SS8000. That was really neat.

Eric, 4Z1UG:

Okay. So the SS8000 is 80 through 10 or a 160 through 10.

Bob, W9RAS:

Yes.

Eric, 4Z1UG:

Right? I read someplace that you also like to work multi-mode on six and two meters.

Bob, W9RAS:

Yes, I do.

Eric, 4Z1UG:

So tell me a little bit about that. I don't meet or I don't speak to many ham radio operators that spend a lot of time on six and two in the, when I say multi-mode, I'm meaning CW single sideband, maybe RTTY. How do those bands perform and why do you like them?

Bob, W9RAS:

Okay. Well, six meters has the nickname, the Magic Band. One of the things that really got me excited here in 2010, I read this article written by Doug De Maw. He used to make a lot of QRP equipment and he had these published in books. I read something about this little, I think it was a three or four transistor, six meters CW transmitter. I built that transmitter and it worked so nice. Then I was on the internet and I saw that there was a gentleman out east who makes an identifier unit that you can use for a beacon, just a little eight pin chip. So I got some perfboard and I bought one of those eight pin chips, and I made up a little beacon identifier circuit on a piece of perfboard, and I put this all into a box, which is six inches wide and about two inches high and about four inches deep.

So I've got a complete beacon in there and it put out one watt. So I put that on the air in 2010 and, oh my, did that open up my eyes about six meters because you think six meters were on the downward cycle of the sunspots, six meters is not going to do much and all that. Well, I started getting these reports from all over the country, in fact, even from some foreign countries from this little one watt beacon. The antenna for the beacon I purchased at the Goodwill Resale Shop. It was an aluminum lawn chair. I got it for 75 cents and I took it apart and I made it into a aluminum lawn chair halo.

Eric, 4Z1UG:

I'm just curious. Did you write an article for QST about an aluminum lawn chair halo antenna for six meters?

Bob, W9RAS:

No. That's where I got the plans for the one that I built, but that was not my article.

Eric, 4Z1UG:

Okay. It's a clever idea.

Bob, W9RAS:

Yeah, I think so too. So that antenna is still up there and the beacon is still working there today. So it's been very, very reliable. I have gotten report. In fact, one of the farthest reports I've gotten on the six meter one watt beacon is from Tel Aviv, and I got one from Monrovia, which is a little country to the east of Italy. Those are the two farthest ones, but

there's hundreds of beacon reports now for the W9RAS beacon on beaconsport.com. That's run by a gentleman in the UK, and that's where the reports go when people pick up the beacon.

It just really opened my eyes because at times when you think six meters is closed, there's nothing happening, you get this report, somebody in California has picked up the beacon or somebody in England has picked up the beacon. Well, holy cow! I thought the band was dead. So I guess that's the reason it gets the name the Magic Band because it's really fascinating the way that happens.

Eric, 4Z1UG:

Do you also operate CW or single sideband in six meters and two meters?

Bob, W9RAS:

Yes. I operate single sideband on six most of all. I also operate on two meters. One day, I turned on the rig and I heard a strange call. I had no idea where he was. I gave him a call and he came back to me and come to find out he was in Argentina. Then I'm tuning around and I hear another station in there with a strange call, and he was in Ecuador. So I worked Argentina and Ecuador. I actually has sent them, what do you call it, return coupons for the mail, and they sent me QSL cards then. So I have QSL cards from those countries on six meters, which is fantastic to work that far on six meters.

Eric, 4Z1UG:

What are the antennas that you're using then for six and two?

Bob, W9RAS:

Okay. Six meters is a seven element m-squared six meter beam, and that's at 80 feet, and that's on a Rohn tower.

Eric, 4Z1UG:

That's for six meters, and then on two meters?

Bob, W9RAS:

Two meters is a 14 element Cushcraft, 13 element Cushcraft beam, but I've modified that. I made it into a quagi. A quagi is a standard Yagi beam antenna, but then on the back for the driven element and the reflector, you put on elements from a quad, and that gives it about a 3 db increase over the standard antenna, which is stacking two of those antennas. The quad in the back is made out of fiberglass rods that I bought at the hardware store. Therefore, marking your driveway in the wintertime, they're a quarter inch solid fiberglass rod. Then I used number 14 house wire, solid house wire then to make the square elements. That really boosted up the two meter beam that way, making a quagi out of it. So I really like to work six and two. I think six is probably my favorite band.

Next, my favorite band would be 40 meters and CW, and then third I would say it would be 80 meters. We have a group in the Midwest, a round table group that meets every morning on 3846.5 lower sideband. Anybody can join. It's very informal. So if somebody out there is hearing this, you can join us on that anytime. Just get in there and say hi. So these are the things that I like to do as far as operating is concerned. I do more building and restoring and constructing however than I do operating.

Eric, 4Z1UG:

Now, before we started, I'm giving video presentations of our ham shacks here. Mine's actually a part and I'm putting it back together after getting a new shelf unit for my workbench. You put your camera on a new project that's built in a microwave oven cabinet. Can you talk about that project a little bit and what is that and how re-task the microwave oven to become a ham radio project?

Bob, W9RAS:

I got it on eBay and I saw that there was this R3 group. I can't take the call exactly. R3 is a radio club in Moscow, Russia, and they make circuit boards for a 1,000 watt linear amplifier. I think they're EB104 circuit boards they're called. I looked at that and I thought, "Well, this is really interesting. I would like to do that." To be very honest, I never had a thousand watt amplifier. I never had the need for it. I also have, how should I put it, I have a fear of building a piece of equipment that requires 2,000 or 3,000 volts because I know that I can't keep my hands out of things and I could really injure myself with something like that.

So anyway, I was really fascinated with the fact that these solid state amplifiers have a voltage, high voltage of 50 volts. So I looked at these circuit boards. So finally, I just ordered some of the circuit boards. I ordered the power amplifier board. I ordered a input control board, and I ordered a switching board to build the KW amplifier. I wound up doing some changes on that. I think like I told you before, at Heathkit, we would not consider this to be a beginner's kit. Wound up being quite a project.

I had to modify things to make them work in my microwave cabinet and all. I don't know if I mentioned it, but I was at the Goodwill Resale Shop in Elkhart, Indiana with my wife and I saw this 1982 Sharp microwave oven in a big metal cabinet and I thought, "Wow! I could build that kilowatt linear in that cabinet and just pull that front panel off and make my own front panel and that'll work just fine," because a cabinet like that would cost me \$100 or \$150 to buy a really nice one, and I thought, "Why not build it in the microwave cabinet?"

So anyway, the microwave had a price on it of \$12. I put it in the shopping cart. I pushed it over to the checkout and the girl says, "Oh," she says, "are you a senior?" I said, "Yes, I am." She says, "Well, 50% off for seniors today." So I got it for \$6.

Eric, 4Z1UG:

That's pretty amazing. What do you think about re-tasking cabinets and cases that are designed for perhaps other industries for amateur radio projects?

Bob, W9RAS:

Oh, absolutely, absolutely. I think you come out sometimes with a better end result than you would've had if you had bought a commercially built cabinet. It just works out great. I had a very large digital volt meter that had these fluorescent readout tubes in it that somebody gave me, and it was in a metal cabinet. This was back in 1991. I remember quite clearly. So I thought, "That cabinet is just about the right size for a six meter transceiver." So I took a piece of perfboard and I got out one of my Heathkit manuals. I think it was the SB104 manual, and I built the carrier generator modulator on a little piece of perfboard. I mounted that into this little cabinet with a couple of standoffs and hooked up a microphone. I got really nice sounding sideband out of it at 3395 megahertz, which is the frequency that Heathkit used for their filters.

So then I had a Heathkit filter here that came out of another rig. I always buy Heathkit things when I'm at ham fests, and I see something really cheap, a transceiver or something, I buy it. I try to fix it up or I use the parts. I really enjoy that, especially with Heathkits. So I put the filter on there and I built another circuit out of the SB104 to convert it to six meters. Now, the SB104 was not six meters, but I modified the circuit to work at six meters.

Anyway, to make a long story short, after building a whole bunch of these little perfboard assemblies and things, I had a workable six meter single sideband transceiver built into this old digital volt meter case. It's up there on my shelf today, and it puts out about 25 watts on six meters sideband. People ask me, "Well, can you give me a schematic on it?" Well, not really. I mean, I just built this little circuit and hooked into that little circuit and hooked it to another little circuit and the whole thing worked.

Eric, 4Z1UG:

That's pretty amazing.

Bob, W9RAS:

Yes.

Eric, 4Z1UG:

Now, this commercial break from QRP Labs. Imagine that you've already purchased the Ultimate3 WSPR net transmitter from QRP Labs and have had a blast working the world on 40 meters. Now it's time to see what you can do on the other bands. The way to do this is to add up to five additional low pass filters to make a six-band Ultimate3. Add the Ultimate3 relay switched LPF kit, and you now have a completely automatic six-band WSPR transponder. What's more? You can add a receiver module and you now have an Ultimate3 six-band transceiver.

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I had a friend here yesterday who asked me, Scott, a couple of Cisco routers that are 10, 12 years old. So he says, "Well, what do I do with them?"

I said, "Well, it seems to me that what you do is what I would do with them is I'd open them up, I'd throw the circuit board in the trash, and I'd save the housing for the next ham radio project." Sadly, you might be throwing away at the time a \$3,000, \$4,000 router 10, 12 years ago, but it's not worth much now, but the cases are sure nice.

Bob, W9RAS:

Yes, they are. You can always get some good parts out of them, take some parts out of them. I cut the power cord off and save that and the cabinet. Then you've got something to go on for another project. Then the really, really fun part sometimes is figuring out, "Well, now what am I going to put into that case?" You figure out something to put in that case.

Eric, 4Z1UG:

Exactly right. You buy a lot of equipment on eBay. We had this conversation before we started. Do you have any thoughts or tips about buying ham radio equipment on eBay?

Bob, W9RAS:

Well, first of all, I don't like to spend a whole lot of money for something on eBay because there are times when you get something and it's not really as described, it's not as good as described, and they say it works great, but you get it and you find out, no, it doesn't work great. So I have had a couple of instances where I bought something. For example, we were talking about a 500 megahertz Tektronix scope, and I bought a 500 megahertz Tektronix scope on eBay. It arrived, and the lady from the post office, she brought it up to the front porch and she set it down on the porch. When she set it down on the porch, I heard tinkle, tinkle, tinkle, and, "Oh, no." It's all solid state and the only thing that's got glass in it is the tube.

Eric, 4Z1UG:

Tube.

Bob, W9RAS:

Yes. So I took it out of the box and the tube was busted. So I contacted the man who had sold it to me. He says, "Well, what do you want me to do about it?"

I said, "Well, you sold it to me and you packaged it improperly. You did not put enough packaging in there around the scope to protect it from being dropped. When it was dropped, it broke." I said, "Now, that's your responsibility."

He says, "Well, I don't know about that."

So I contacted eBay and I filed a complaint with eBay. Now, I don't know exactly how eBay handles these complaints or what they do, but he got back to me right away and he says, "Well, what do you want me to do?"

Well, I had been on eBay again looking around, and I found another scope like it for \$100, and that scope had a good tube in it, the guy said. Now, he said it's good for the tube and parts, but he said it does not work.

So I contacted the fella who had sold me the one that was busted and I said, "If you refund me \$100 of my money," I think it was \$200 altogether, "If you refund me \$100, I will then call it even, and I'll be happy and I'll buy this other one and take the tube out of it and put it in mine," which is what I did and worked out just fine. So things like that do happen.

I have had a case where somebody sold me something and when it arrived, they had sent the item that I bought to somebody else and the item he bought to me, and then the gentleman said he would not do anything about it. I contacted eBay again and filled out a complaint or filed a complaint by email with eBay, and eBay was not able to resolve the matter either. It was a matter of \$29.95 as I recall. eBay's got that policy where if you can't resolve with someone over an item like that or get a refund like that, they will refund it themselves and back it up. I didn't know that at the time, but after a couple of weeks, here I get a refund direct from eBay for 29.95 to compensate me for having had this bad experience. So I really like buying on eBay for that reason because they back you up.

Eric, 4Z1UG:

You have a picture on your website of a 1929 Ford touring car. Do you have a passion for car restoration as well as radio restoration?

Bob, W9RAS:

Absolutely. Absolutely. I find that it correlates it. It's a lot similar. You have ham fests that you go to as an amateur radio operator and you've got swap meets that you go to as a car restoration person, and much the same kind of activities take place. So I find that they're similar.

Now, my father had purchased a 1929 Ford in 1970 I think it was, and he was not in a condition where he could finish it. So he sold it to me and my wife and I restored that car. We finished it up in 1972, and that was a 1929 Coop. We were having our children then. Our son had just been born and we needed money. So I sold the car. Then in 2006, I got the urge I'd still would like to have a model, and the children had moved out, been

through college and graduated, and they had moved out and had started families of their own.

So I bought a model, a touring car or a Phaeton it's called 1929, 350 miles north near Traverse City. We brought the car back. So I've been working on it now for 12 years and gone through the whole thing. It's really a good restoration, I think, and I get a lot of comments. Well, I've won some first place prizes at some of the car shows with it. So that has really been a good project, something that is a lot of fun.

When you go down the street in a restored antique automobile, everybody waves at you and motions for you to blow the horn and all kinds of things like that. It's a lot of fun. I often too will take strangers for rides. I was at the gas station the other day filling the car up with gas and the gentleman comes walking up, he goes, "Boy, that's a nice car." He really liked the car and he's walking around looking at it and everything.

I said, "Would you like a ride?"

He said, "Sure," and he hopped in and I took him for a ride for a couple miles. I have stopped too at farmhouses and things. I'll be going along and they'll be having a little picnic there at the farmhouse for something or other and they're waving at me and yelling and all that. So we'll pull in. So I take the kids for a ride and stuff like that. It's just a lot of fun having an old car like that, and it's fun to work on too.

Eric, 4Z1UG:

What kind of rig would you put in that car?

Bob, W9RAS:

Oh, I thought about that. I thought about that. Well, first of all, it's six volts. So what kind of rig do you put in it? In order to do it, I'd have to have something to convert six volts to 12 volts even just to put a two meter rig in. You could put a small two meter rig in there, I guess, I've got a little two amper, 12 volt converter that will go in the car and I could put a small two meter rig in and work that. Actually, I haven't had a desire really to do that. I guess when I'm doing the old car thing, I don't need the amateur radio thing.

Eric, 4Z1UG:

Well, it seems to me that you should have an old Motorola V power, the vibrator power supply.

Bob, W9RAS:

Motorola 41V.

Eric, 4Z1UG:

Right, something like that.

Bob, W9RAS:

Yeah, that would work.

Eric, 4Z1UG:

On six meters.

Bob, W9RAS:

That would work in there. It sure would, and it would be fun too.

Eric, 4Z1UG:

Right, because you'd probably have to tear that radio down too and rebuild that from the wires up as well.

Bob, W9RAS:

Yes. My first two meter FM unit was a Motorola 41V that had served about 20 years in a taxi cab. Actually bought it from a taxi cab company and they were junking them, actually. I think we paid \$15 for them or something. I bought one and my friend bought one and we put crystals in for 14694. Everybody was on one channel.

Eric, 4Z1UG:

Right. How about that? What do you think is the most important piece of test equipment you've got on your workbench?

Bob, W9RAS:

Most important piece of test equipment I would say is a good multi-meter. I like the little ... They have these little red multi-meters that they sell at Harbor Freight. They're usually around \$5 or \$6. Sometimes they even have a coupon. You can get one for free. If you buy something, you get one free. I find they're quite accurate. If you accidentally hook it up wrong and you fry one, you can buy another one for \$5 or \$6 or maybe you got a coupon, pick up another one for free. So I think those are really neat, and I think that's an absolute must on the workbench.

Now, my favorite multi-meter is the Simpson 260. I like a good analog multi-meter. I think it shows rising and falling voltages much more accurately than a digital meter does. A digital meter has to integrate and will select a particular spot and display that, but the analog meter will just move up and down smoothly and allows you to do adjustments and things I think better than a digital meter. So I really like the Simpson 260 as my favorite multi-meter.

Eric, 4Z1UG:

I think the Simpson 260 is probably, what, about 60 years old. I mean, it's still being sold as a new product, but I think I remember my electronic classes in high school all had the Simpson 260s in them.

Bob, W9RAS:

Yes, yes. I bought a Simpson 260 series 8, which is rather recent. It was not a new one. I bought it on eBay. I think I paid \$85 or something like that for it. They still make them and they're still a very good meter and I really like them. I think oscilloscope is a good piece of equipment to have. You have to learn how to use an oscilloscope. It's not self-explanatory. It takes some skill.

Eric, 4Z1UG:

You have a YouTube channel where it looks to me like you're pretty prolific in terms of recording on video the things that you're doing, the projects that you're doing, even the weather outside. Do you have any training videos for any test equipment on your YouTube channel?

Bob, W9RAS:

Training videos for test equipment? No. I do have training videos on how to restore equipment and I use the test equipment along with that, which I suppose be a training equipment, training on equipment of sorts. Nothing specific though on using this piece of equipment for testing or whatever, but like the SS9000 and the SS8000, I have many videos on those and how to test this circuit, how to test that circuit, how to tune this up, how to repair this and that. When I worked at Heathkit in the service department, one of the rigs I worked on a lot was the HW2036A, which is the synthesized two meter rig that they manufactured at the time. The other day, I got on eBay and I saw one of those real cheap.

Eric, 4Z1UG:

As I recall, that had lever switches one to 10, right?

Bob, W9RAS:

Yes, and I like that.

Eric, 4Z1UG:

They were called BCD switches or do you recall? What were the name of those switches? Each digit you would actually adjust up and down with the lever?

Bob, W9RAS:

Yes, and it has three digits. So if you want to go on 14652, you just flip the first lever till it reads six, the next one till it reads five, and the next one till it reads two, and you're on 14652. I think that's really clever and very reliable and simple. So anyhow, the other day, I saw one of these real cheap on eBay, so I bought it and I'm in the process of restoring that right now and making videos on that.

I make the videos because I want to pass information on to the new guys out there, well, to everybody out there for that fact, whether you're an amateur or not on how to do this and how to do that. There are skills that are being lost, I think, in this electronic industry. I want to pass these things on to the newcomers so that they can, how should I put it, they can have the enjoyment that I have at working on these things and enjoying it.

Eric, 4Z1UG:

What is your restoration journal?

Bob, W9RAS:

Oh, I don't normally keep a restoration journal, but I did do a restoration journal on the SS8000 because it was such a tremendous project and I wanted to keep a record of the things that I had done to it and how much time it took because I started on it and I thought, "This is going to take a lot of time. It's going to take money, it's going to take a lot of looking for parts and things."

So I just started writing that all down in a big journal book, composition book I guess you would call it with the spiral bound composition book. I actually filled the whole book up there and it took me 206 hours to finish that restoration. That is probably one of the most difficult projects I've undertaken in my amateur radio career I guess you would say.

The toughest things I worked on was building the first SS9000 while in the Heathkit laboratory. Restoring the SS8000 would've been one of the toughest ones, and building that six meter transceiver, that's another one. That took a period of years though. I would say probably about three years before I completed the six meter single sideband transceiver, but those would be my hardest electronics projects. The KW linear too would be in there.

Eric, 4Z1UG:

It seems to me that a project like restoring the SS8000 that took 260 hours or a project that will go on for months at a time, it seems to me that it'd be very easy for some people to lose interest in a build project that takes so much time. Is there a secret to keeping your interest on the project, either by breaking it down into smaller pieces so that it doesn't look so mammoth? What's your approach to this?

Bob, W9RAS:

Well, I think that when it comes to restoring this equipment, restoring an antique car, whatever you're doing, I think two of the most important attributes that you can have are patience and perseverance. You got to have patience because you can't finish the project. You're not going to get instant gratification. You enjoy getting this little part working and then tomorrow or next week you enjoy getting that little part working and then you put them together. So I try to break things down into pieces, get this circuit board working,

then get that circuit board working, like I say, then put them together and work on the whole thing.

I think if you have patience to find the parts that you need, to find the repair information you need and all, and you've got the perseverance to stick to it, which is, I don't know, it just comes naturally to me, I guess, to have the perseverance because I know that I'm eventually going to get there, then you will be rewarded in the end with a project that works and works well.

Many times, I will take a project and put it on the shelf, "I don't know what to do now. It doesn't work. It should work. It doesn't." I put it on the shelf and I leave it for a few days and I'll walk past it and all of a sudden something will come to me. It just seems like out of the blue. It's like my subconscious works on these things when I'm not. Well, this two meter Heathkit rig, for example. I couldn't get the phase lock loop to lock up properly on 145 megahertz. The manual says tune it up on 146 megahertz and it won't. When I tuned it on 146 megahertz, I aligned the phase lock loop circuits on 146 megahertz, it would not lock up on 145 megahertz.

I thought, "Why?" I got to thinking about it and I thought, "Well, this two meter rig was originally produced as a two megahertz unit only." You could build it for 146 to 148, then you aligned it for 146 to 148 or if you built it and you wanted to operate 144 to 145 or to 144 to 146, excuse me-

Eric, 4Z1UG:

Like a European band.

Bob, W9RAS:

Yeah. Then you would tune it for that band. I thought, "Oh, yeah." So what I did, I remembered talking to my friend who had the service bench next to me at Heathkit. His name was Ed Denno. Ed Denno was one of the best technicians I have ever met and still is. He was talking to me about that particular rig and he said, "You know what?"

I said, "What?"

He said, "I don't tune those on 146 megahertz like it says in the manual." He says, "I tune them on 145 megahertz," and he says, "They then will do the whole band no problem," he says, "but I've had some trouble when I tune them at 146."

So it was last night, and I'm walking downstairs and I saw that two meter rig on the workbench, and I remembered what he had said, and I thought, "I wonder." So I went over there and I tuned it up on 145 megahertz instead of 146. All the channels work, the phase lock loop locks like it's supposed to, everything works like it's supposed to.

Here, it's all because Heathkit produced a manual for a radio that was set up, like you say, for the European band or for the American band, the top two megahertz or the bottom two megahertz instead of the whole band. Then when they improved on that radio, they still left that in there that they were to tune it up that way for the two megahertz segment.

That just threw me. So here's a mistake in the Heathkit manual. Really, they should have told you to tune it up on 145 megahertz for all the attuned circuits. Anyways, that's what I did last night, and the thing works great, so I'm happy.

Eric, 4Z1UG:

Yeah, but it sounds to me like you actually do have a process, and that process is that actually break the project down into smaller projects so you have shorter goals. So you have that sense of accomplishment that you've actually gotten a portion of something to work because that was the short-term goal. Is that right?

Bob, W9RAS:

That's right. That's right. Sometimes I'll set something on the shelf and leave it there for six months and then come back to it. Sometimes when I do that, it goes so easy when I come back to it and I think, "Holy cow! This is really neat."

Eric, 4Z1UG:

What do you think is the greatest challenge facing amateur radio now?

Bob, W9RAS:

Getting young people interested in the hobby. There is so much to amateur radio, and I try to explain that to young people when I talk to them. They say, "Oh, I don't want to sit and yak on a microphone with a bunch of old guys."

I tell them, "Well, you don't have to. You can hook up a computer and you can talk to your friends with the computer using different computer programs. You can talk to people in foreign countries with little low power transmitters and things. You can bounce signals off of satellites. Amateur radio operators own some satellites up there. You can talk to people through satellites. You can send digital data through satellites. You can do all kinds of experimenting. You can launch balloons with transmitters in them and track them across the country. There are so many things you can do. There are people that climb mountains and carry their radios with them and get up to the top of the mountain and talk to their friends from the top of the mountain, and it is so interesting. So many different things you can get into. You can put ham radios into boats or airplanes, all kinds of things. There are guys riding bicycles with ham radios on them. So don't think that amateur radio is just a bunch of old fuddy duddies sitting around in their basement talking to each other."

Eric, 4Z1UG:

How do they reply?

Bob, W9RAS:

Some of them get interested.

Eric, 4Z1UG:

Do you have kids in your ham radio club there?

Bob, W9RAS:

We've got some younger people, I would say college students that are in the amateur radio in the clubs here. I belong to the Michiana Amateur Radio Club in South Bend, Indiana. We've got about 35 or 40 members at a meeting. Just a great group. We do have some students there from Notre Dame. I also belong to the Elkhart Amateur Radio Club in Elkhart, Indiana, which is 15 miles south of here. We drove down there yesterday to have lunch with the Elkhart Amateur Radio Club group. They're a nice group of people, and in those club meetings, you learn so many things and you meet so many nice people.

Amateur radio operators overall are good people. They're very, very helpful people. I would not hesitate. If I saw a beam antenna on top of a house and I'm driving somewhere and I got the time, I would not hesitate to drive in and say, "Hi. I'm Bob W9RAS," and meet this gentleman, whoever he is, and talk to him for a while. That's the way ham radio operators are. They're just great people, and it's the type of hobby that attracts intelligent, caring people. That's one of the things that I really like about it.

Eric, 4Z1UG:

What excites you the most then about what's happening in amateur radio now?

Bob, W9RAS:

Oh, golly, all the new things. I don't feel I have the ability to do all the new things that are coming out, whether this is JT8. Is that the new type of computer?

Eric, 4Z1UG:

FT8.

Bob, W9RAS:

FT8, yes. I'd like to try that, but I have no idea what it is or how it works, but finding out about something like that to me is very exciting.

Eric, 4Z1UG:

What advice would you give to new or returning hams?

Bob, W9RAS:

Take it slow. A lot of people say, "Oh, it costs so much money." I bought a transceiver in 1997, an Icom 746. It still works great. I paid \$1,700 for it, but think all these years I've been using that transceiver and it works nice and I get a lot of good use out of it, and it'll be worth something if I decide to sell it. So I don't think cost is an important thing as a lot of people think it is, especially if you buy used equipment and things like that. You do have

to be careful though. You can buy used equipment and it doesn't work like it's supposed to and things, and that's where being able to fix things comes in handy.

I think amateur radio is exciting. I think all of my employment for my entire life has been through amateur radio in one way or another, and it has been, I think, a really good life. So I'm happy with that. I'm 76 years old now, and I think that you can't have a better hobby than amateur radio. Being 76 years old, I can come down here anytime I want and get on CW or I can get on six meters or two meters or I can get on the low frequencies. I can talk to DX stations if I want to. It's just a super, super hobby, and like I say, for retired people, oh, my golly, it's just wonderful.

Eric, 4Z1UG:

Bob, you've been a wonderful guest. Thank you so much for joining me on the QSO Today podcast. With that, I want to wish you 73.

Bob, W9RAS:

73s there, Eric, and I had no idea we'd been talking this long.

Eric, 4Z1UG:

Isn't that amazing? That just goes pretty fast, doesn't it?

Bob, W9RAS:

Yes, it does.

Eric, 4Z1UG:

Have a great day there.

Bob, W9RAS:

Okay, Eric, and you too.

Eric, 4Z1UG:

That concludes this episode of QSO Today. I hope that you enjoyed this QSO with Bob. Please be sure to check out the show notes that include links and information about the topics that we discussed. Go to www.qsotoday.com and put in W9RAS in the search box at the top of the page.

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Until next time, this is Eric, 4Z1UG. 73. The QSO Today podcast is a product of KEG Media Inc. who is solely responsible for its content.