



Episode 493 - Jonathan Kramer W6JLK Transcript

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Eric 4Z1UG

0:54

I'm Eric Guth, amateur call sign 4Z1UG, where I demonstrate the diversity and relevance of the amateur radio hobby and its impact on society by interviewing ham radio operators, many of whom played vital roles in shaping our technology through the amateur radio hobby. And while many people might say ham radio, do people still do that? This podcast demonstrates through in depth interviews just how amazing, diverse, and dynamic the amateur radio hobby continues to be.

My English speaking amateur radio friends in Israel have asked me to invite you to speak with us on DMR and Allstar. Click on the banner in this week's show notes page or on the talk group menu item at the top of our qsotoday.com web page for more information. Dr.

Jonathan Kramer W6JLK transitioned into becoming a communications law attorney after a successful career in cable television engineering. In addition to his amateur radio activities, Kramer stressed that amateurs should be very active in local government as a way to advocate for antenna and tower rights, especially in areas of strong HOA controls. W6JLK and I discuss the first Motorola simulcast radio system in Kern County, California, years ago and his use of ardent and portable radios for integrating ham radio into public service.

W6JLK, this is Eric 4Z1UG. Are you there?

Jonathan W6JLK

02:29

Jonathan, this is W6JLK. Yes, I am here, Eric.

Eric 4Z1UG

02:34

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

Jonathan W6JLK

02:42

Not surprisingly, I came out of junior high school with an interest in CB radio. In fact, we had a family CB license that caught my interest in two way, and when I went to Hamilton High School here in Los Angeles, where I'm based, I immediately joined the radio club there, K6CXI, headed by the wonderful Jack Brown. It was there in. Gosh, I've got to check my notes here because I got notes on the dates, November 20, 1970, that I earned my novice ticket. I was tested by someone, I think you know, Mark Abrams, WA6DPB, and he was my very first contact. So that was the beginning of my ham story. I went from there, oh, about a year and a half later, I earned my general license.

Jonathan W6JLK

03:31

About the same time, 1971, I joined the ARRL, and within about a year I upgraded to a life member. One of the best investments I ever made.

Eric 4Z1UG

03:42

If you know anything about the ARRL, I think. What is it? The membership, even in those days was maybe, what, \$35 a year or something like that?

Jonathan W6JLK

03:50

That's right. But life membership was about \$180 and.

Eric 4Z1UG

03:53

Now it's over \$1,000. I think.

Jonathan W6JLK

03:56

Like I said, it was one of the best things I ever did. In fact, my father paid for that.

Eric 4Z1UG

04:02

You've used \$180 worth of paper in all those years?

Jonathan W6JLK

04:06

Well, not only was it a good deal, but being there and supporting amateur radio through the league has been one of the things I've been very proud of as well. And I've had a number of contacts with the league. Currently I'm a volunteer examiner. I'm also a volunteer counsel in the southwest division. I hope to get him back a bit as well.

Eric 4Z1UG

04:27

Just a note about Mark Abrams, WA6DPB. I actually met Mark in 1974 because he was very good friends with Martin Ronnie, WB6YMI and Skip Hansen, WB6YMH. I'm assuming that we probably all know the same guys.

Jonathan W6JLK

04:44

We do.

Eric 4Z1UG

04:45

And I remember at the time that mark was building a remote base station using TTL and relay logic on green perf board. I still see it burned in the front of my brain. But he was one of the guys that interested me in remote base stations and all the remote control stuff that was going on in those days. And so that's very interesting that our Venn diagrams cross in that way. But let me just go back a little bit. It seems to me that if your family was an interest in citizens band radio and then you kind of jumped to novice in 1970, did you have an interest and earlier interest in electronics and communications even before you got the amateur radio license?

Jonathan W6JLK

05:24

My graduation project from elementary school here, the 6th grade at the time, was that I built a crystal radio and I gave a lecture to my entire 6th grade class on the history of radio, not the commercial side, but the actual broadcasting side. So yes, my interest in radio went back many years before I became a CB radio operator, and then later a ham radio operator.

Eric 4Z1UG

05:51

And did your crystal radio have a germanium diode, or did it have a cat's whisker?

Jonathan W6JLK

05:55

No, I had a 1N34 diode. And because the school that I went to, Clover Avenue, was actually very close to KDAY AM, that was the only station I could pick up because everything else was overwhelmed by that one strong signal. But it was a crystal radio. It worked, and it was a great project. And I cannot tell you why, but for all of my life, I have been intrigued, enlightened, enraptured by radio, by two way radio, by one way radio, by the electronics of radio.

Eric 4Z1UG

06:33

I get that 100%. I'm sure that all of the listeners also get that as well. Okay, so what happened after that? You got your amateur radio license. You're a life member of the awrl. Did you continue with radio clubs and stuff like that in high school?

Jonathan W6JLK

06:47

Well, in high school, I was really involved in the K6CXI club. That was the Hamilton high school radio club. And that's where really I spent the majority of my time. But my next contact between amateur radio and education came for college. And I will tell you that I was a straight C student in high school. And I mean straight C, because it did not interest me except for radio. And I excelled in the radio electronics courses. But when it came time to go to college, I didn't have really great grades to get in, but I ended up going to Cal State Northridge anyway. And the way I got in was fascinating because my grades didn't qualify me to go in the front door, as it were.

Jonathan W6JLK

07:36

I went around the side door and said, listen, I think I really do qualify to be here, and I can demonstrate that I can do this level of work. And I was actually interviewed by an admissions officer who looked at my very short list of credits. He said, ham radio. I said, ham radio. And he said, that's a federal thing, right? Yes. I had to take federal tests, and by this time, I'd already tested to be a general. Said, well, you know what? I'm going to let you into Cal State Northridge, because I feel like anyone who could pass these federal tests will do fine at Cal State Northridge. So it's because of my ham radio license that I got into Cal State Northridge.

Eric 4Z1UG

08:17

That's amazing. We should say. By the way, the hometown was what? Los Angeles, right?

Jonathan W6JLK

08:21

Correct. Born and raised in Los Angeles, west.

Eric 4Z1UG

08:24

LA, because I think you mentioned to me, Chevy at hills.

Jonathan W6JLK

08:27

Well, actually, I grew up in west side, I went to Clover Avenue Elementary School, then Palms junior, and then Hamilton High School. So I was kind of a little bit west of Chevy at hills.

Eric 4Z1UG

08:39

Okay. So I know the area. I actually spent some time there as a kid myself and even as a young adult. Okay, well that's very cool. So you got into Cal State Northridge and what did you major in there?

Jonathan W6JLK

08:50

I majored in hating it, just did not like being there. I spent about a year and a half there. And as has been the case many times in my life, I took the road less traveled and I left Cal State Northridge and went from a four year university to a two year college. I went to LA trade tech because LA trade tech had a splendid, just a renowned radio telecommunications program.

So I left Northridge, enrolled in La trade tech, went through it, was on Dean's list every semester. At my last semester, Motorola, which was a sponsor of the radio communications program at that point, traditionally picked the top two students in that program and pulled them into Motorola. And I was one of the top two. So I was actually hired by Motorola out of La trade tech even before I graduated.

Jonathan W6JLK

09:47

And that began my first career position. I was hired by area F program management and worked on fascinating projects. The first simulcast systems, big microwave systems, public safety communications. It's the type of thing where I got to play with stuff that normally if you worked at a MSS, you'd spend five or ten years before you got to play with that stuff.

Eric 4Z1UG

10:14

Right. I think the people that I knew that played with that stuff early worked for the public safety, like in Orange County communications or something like that. Right. And those are rare positions in those days they were.

Jonathan W6JLK

10:27

And I helped build the first simulcast system, which was in Kern County, California. It had to cover about 8800 sq. Mi. And we had multiple sites. We had a very early solar only site. Now we're talking late 70s ring microwaves and phased audio. It was just an amazing network to really learn on. And I was responsible for the dispatch centers, keeping the dispatch centers running. They were using PDP11-35 computers to do computer aided dispatch. We had the Modats which were the first level or the first generation digital radios for sending digital IDs. Every time you'd key down it would send a digital ID so it would pop up on the dispatcher's display who was calling and their status. Cool.

Eric 4Z1UG

11:18

The mic, or control head as I recall, had Modat status buttons on it.

Jonathan W6JLK

11:22

That's correct.

Eric 4Z1UG

11:23

Very interesting. Well, I remember at that time must have been the late 70s when Orange county communications bought their 1st 800 MHz analog repeater and the speculation was, well, how could that even work? It's microwave frequency. It won't have any range. It's not going to work. Surprisingly, it worked quite well.

Jonathan W6JLK

11:41

It worked quite well. And it was part of the evolution of frequency for bandwidth. And bandwidth was necessary for a whole lot of things, not the least of which was there were so few users at the time up in that spectrum that you had a lot of room to move around and try out different things and modulations and bandwidths. And it was just really neat stuff. And because the systems were really sold before they were understood. When I worked at Motorola and were doing the first simulcast system, were literally inventing things on the fly and pulling together products from other pieces that Motorola had to make this thing work. So the system was sold and then Motorola figured out how to actually make it work. So were, oh, gosh, doing incredible things.

Jonathan W6JLK

12:32

And I remember that the manager at the time, I always remember this, he had a roll of butcher paper on a reel like you walk into a deli and they'd pull off the butcher paper and he had that on the side of his desk and he would literally pull off a piece of paper and start scribbling designs and rip off the paper. And then it would go off to the engineers to actually build. That's the kind of work that were doing. It was not just plug this into this, plug this into that, turn this on. We were actually making things work. And it was really amazing. It was just an amazing time to be in radio.

Eric 4Z1UG

13:12

Motorola is way ahead of like General Electric and Ef Johnson and all of those other companies, right? I mean, I don't recall that there was any innovation that was coming out of those companies the way that Motorola was doing it in those days.

Jonathan W6JLK

13:25

Well, Motorola was ahead of Motorola at the time because again, they would sell things and then it would be the area people who would actually make it all work. So that was a heck of a lot of fun because we really were given tremendous range. We really could reach through anywhere in the company to get what we needed to support our first client because this was the first system, this was the first simulcast. So it was a demonstration project to show the world that Motorola could make all of this work. And we did, and it was just an amazing time to pull pieces together and make it work.

Eric 4Z1UG

14:04

Well, Kern county in California isn't the largest. I think Riverside county is the largest county, San Bernardino County, Kern county is not the largest, but it's a huge county, but it was also, as I recall, it's desert and mountains. So it was a very difficult place to cover. Right.

Jonathan W6JLK

14:19

San Bernardino is the largest county. Kern County, I believe, is the second largest county. And yes, it has 8000 foot mountains. It has desert. It really has all sorts of topography. It's the southern portion of the Central Valley. And the way the simulcast system was designed to operate is you could be anywhere in the county with a handheld and have full communications. And that meant you'd be listening to multiple repeaters which meant that those multiple repeaters had to be synced within a cycle of each other. We used to go up to the mountaintops and adjust the high stability oscillators. There was one site called Bird Springs where we would drive out three and a half hours, 4 hours to get to the site to do about 15 minutes work and then drive back to Bakersfield.

Jonathan W6JLK

15:10

But that system worked and it provided the coverage and it was exactly what the county sheriffs and the county fire department needed.

Eric 4Z1UG

15:19

So explain just for a second how simulcast works for the audience that probably we're way beyond that now because were so channel diverse with what we use. But explain a little bit about simulcast.

Jonathan W6JLK

15:31

The simulcast back in those days was analog. But basically you would have multiple transmitters all keyed up at the same time.

Eric 4Z1UG

15:40

On the same frequency.

Jonathan W6JLK

15:41

On the same frequency? On the same frequency. So what would happen is you would have to have all of those transmitters locked as to frequency and as to audio phase. There was a twofer here. You had to not only frequency lock them, but you had to phase lock them for the audio so that a receiver, a handheld receiver, might be listening to two or three different sites at the same time. But getting the same audio in the same phase at the same time would narrate a beat because the frequencies were so well locked together. Each of the high stability oscillators actually had an oven built in to keep the crystal source or the frequency source at the same temperature regardless of the ambient temperature.

Jonathan W6JLK

16:25

And it was essentially a way of providing wide area coverage without having to change from going to peak A to peak B to peak C as you travel through the county.

Eric 4Z1UG

16:35

Right. And that technology ended up being used later for wide area paging. And it was even more complicated, I think, with paging because at a certain point they started being able to connect those paging transmitters with satellite links. So now you had a time distance from satellite links and the phase and the frequency locking.

Jonathan W6JLK

16:53

Yeah, you're talking about the Skytel network. That was one of the first networks.

Eric 4Z1UG

16:57

Out there, or Pagenet, for example, Pagenet, Skytel.

Jonathan W6JLK

17:02

They were basically, exactly. It was basically satellite uplink, downlink to a primary location.

Eric 4Z1UG

17:10

So you're working for Motorola, and you're on this cutting edge of everything that's interesting about radio. What happened after that?

Jonathan W6JLK

17:17

Well, one of the downsides of working for Motorola at that point was I was living with some friends in a big house in Malibu, and I'd get a call Friday night saying, on Monday, go to New Mexico. On Monday, go to Nevada. On Monday, go to Northern California, wherever the projects were that they needed help on. And there's a young man in his 20s that was like, oh, this is all nice, but I'm not sure I like all this travel. So I started looking around for a job, and I went to the two obvious employers in Malibu, the phone company being one general telephone. I took their admissions or their aptitude tests, and I got great scores on that. At the same time, I also walked into the cable TV company, Malibu Warner Cable, and I said, are you looking for a technician?

Jonathan W6JLK

18:07

And they said, we're looking for a chief tech. I said, what's a chief tech do? And they said, runs the system. I said, well, I don't know anything about cable TV, but I have a strong two way background. And then they asked the key question, do you have a license? And by this time, I had not only picked up my amateur radio licenses, but along the way, working at, well, going through LA trade tech, I picked up my third class, then my second class radio

telephone. And while I was working for Motorola in Bakersfield, I took the first class exam, first class radio telephone exam. So when I walked into the cable office in Malibu, and they said, do you have a license? And I said, yes, I was hired on the spot because they had a microwave link and nobody assigned the logbook.

Jonathan W6JLK

18:52

So by virtue of the ticket, I had a job. And this is a recurring story in my life, and something I always tell people. Yet every piece of paper you can, every license you have distinguishes you from someone who won't make the effort to get the license. There have been license. I've never gotten a license that I needed at that very moment, except for my driver's license. And there's never been a license that I didn't use because I had it. So I'm a strong advocate in getting licenses, and amateur radio is certainly the foundation license for me from which everything else grew. So I walked into the cable office, they hired me. I ended up running the system.

Jonathan W6JLK

19:38

I didn't know anything about cable TV topology, but I knew about cable TV technology because instead of shoving a signal into antenna, I shoved a signal into a piece of cable. So from that standpoint, it was very straightforward. And I ended up being the system engineer in Malibu for a couple of years. And I went over from there to be. I worked for a contractor for a while, cable contractor building cable systems. And then I was hired to be the chief technician of the cable system in south Orange county because they had trouble.

Eric 4Z1UG

20:13

Which system in south Orange county?

Jonathan W6JLK

20:14

It was the old storer system in south county. And that system was experiencing a tremendous amount of signal. Basically, their pay channels were in the Midband and they were unusable because there was so much ingress and so much leakage. And this I knew. I knew about this because I knew how to track down this stuff. And I went in and I identified the problem, which was that the connectors that they were using, the hardline connectors they were using were.

Eric 4Z1UG

20:45

Eric, you may know this from the old substandard.

Jonathan W6JLK

20:49

Well, they were feed through connectors, okay? They weren't cord connectors. And that allowed for leakage. So I went to my manager and I said, what's our capital budget for buying new connectors? And he said, capital budget? I'm sorry, what does that term mean? I said, okay, what's our repair and maintenance budget? Well, we can order \$500 worth of connectors. That is fine. I said, thank you. I called up my friendly salesman from a company I liked, and I said, I need you to cut me orders for \$499 each. And we're going to scam the system at sewer cable. And we did. And I brought the service level service calls down from about 9% a month to under 3%. And I really had a heck of a lot of fun. But because I understood transmission technology from all this previous experience, it was straightforward.

Jonathan W6JLK

21:41

And leakage was something that I knew. In fact, I'll tell you an interesting story going back a little bit. When I was in Malibu. The head end site in Malibu was on a place called Saddle Peak.

Eric 4Z1UG

21:53

Sure.

Jonathan W6JLK

21:54

Saddle Peak also has, or had at least at that .1 of the primary lax FAA sites.

Eric 4Z1UG

22:02

There's also a Nike missile site up there, too.

Jonathan W6JLK

22:05

Pretty close.

Eric 4Z1UG

22:06

Pretty close. Not on the same hill, but. Right close.

Jonathan W6JLK

22:09

Right. In fact, that Nike site you're talking about is commonly used for field aid now. But that's a separate story. Anyway, so I got a call from the FAA saying, we're getting bombed out at Saddle peak. Is it your head end equipment? I said, no, I'm sure it's not. And I went up there with a spectrum analyzer and I identified that the actual interference was coming from a ham repeater on the same peak. So I called the owner of the repeater. I said, you have a problem, and I'm telling you this before you're going to get a call or a visit from the FAA and the FCC. That repeater went off the air. I got a nice thank you letter from the FAA, which I still have to this day.

Eric 4Z1UG

22:48

Did that repeater go back on the.

Jonathan W6JLK

22:50

Air once they put a filter on the output? They did.

Eric 4Z1UG

22:53

Let me ask a question. Did your Malibu cable television, did it have local origination? Did you have a studio in your Malibu office there? Because I remember in those days, like teleprompter cable in Newport beach had even a live news show every afternoon from their tiny office in Newport beach.

Jonathan W6JLK

23:10

We didn't have local origination. What we did was there was one guy who had a local FM station who fit it in, basically an FM modulator who fed it into the system. So we didn't have video. We only had FM origination at the time. But this is the late seventies, nineteen eighty. It was really before all the local origination was the rage in small systems. This was before the cable wars era. This was kind of the beginning of the cable wars.

Eric 4Z1UG

23:39

Yes. I was involved as a studio guy in cable vision in Newport beach, teleprompter cable in Newport beach. So I ran the cameras or I ran the production switcher if they needed volunteers. We were never paid for any of this stuff, but it was a chance to kind of get your hands on television production.

Jonathan W6JLK

23:56

So I'll tell you a fun story that ties back to store of cable, which was I was hired as the engineer in the South Orange county system because of what I did in that system. I was promoted to be the regional engineer. And based out of Anaheim, I was responsible for all the cable TV technical operations from basically south Orange county out to the desert up to Kern county. And as the regional technical manager, we did have a major origination studio at the Anaheim office where I worked out of. And the manager of that system just hated origination. So he looked at me and he said, that's yours. So here I am, the technical, the regional engineer, and I'm responsible for local origination for that cable TV system.

Jonathan W6JLK

24:41

So it's amazing how if you limit yourself to the job you're doing, you'll never have the jobs and the exposure to the other things. And again, I think I've been very lucky to be at the right place at the wrong time or the wrong place at the right time, depending on your point of view, but it sure has been a heck of a lot of fun.

Eric 4Z1UG

25:01

And now this break. The QSO Today project that includes this podcast and the QSO Today Academy is now listener sponsored. There are no commercial sponsors to influence the content and opinions expressed on QSO today, including my blog posts. Disclaimer we did not have a problem with sponsor influence when we did have commercial sponsors. The world is different now. I believe that commercial sponsorship, where you watch and listen to TV, radio, YouTube, Facebook, and X for free, does give sponsors complete control over all that you see and hear. The largest networks are now dominated by international corporations who decide in their boardrooms what we hear, know about how we vote, and what we buy. Commercial sponsorship models for podcasts don't work, maybe for good reasons.

Eric 4Z1UG

25:52

At QSO today, we are back to blogging and podcasting for the free expression of ideas, discussion, and the dissemination of content. Without commercial sponsorship, it takes everyone's ideas and approaches in our discussions to formulate our own way with the

best information available. This has always been the best formula for success, even in ham radio. So QSO today is now value for value. Following the model created by another ham, Adam Curry, K five AAC inventor of podcasting and the value for value business model, I create valuable amateur radio content that you consume. In return, you find it valuable. Then you reward the podcast with your sponsorships, donations, transcription sponsorships, and using the QSO today Amazon link. Your supporting the podcast in this way keeps QSO Today podcasts coming to you every week since July of 2014, now approaching 500 episodes.

Eric 4Z1UG

26:51

In addition, we have over 500 educational ham radio videos from previous QSO Today virtual Ham expos that we also publish to allow every ham to benefit from these excellent presentations. However, all of this content has to be produced, edited, curated, and hosted on commercial platforms by me and my team to keep it easily accessible and available to you. Links and banners on the show notes pages allow you to show your support of the QSO Today project. Please support QSO today with your sponsorships, donations, and using our Amazon links. And now back to our QSO today.

Eric 4Z1UG

27:29

It was a great time because obviously we didn't have the Internet, we didn't have YouTube to create original video productions. This was kind of a time of community access channel and your neighbors deciding that they wanted to do a show on cooking or fashion or something like that. It was a lot of fun. I think it was required, wasn't it part of a city franchise is often required, at least in some of the systems I ran in the Midwest in the 90s, we had to create original programming in the community as part of our license to work in the city.

Jonathan W6JLK

28:00

In fact, in south Orange county, that was a requirement. And in one of the subsystems in south Orange county, they had a requirement to have a message board system, and they didn't have the equipment. They didn't have anything. So I bought a Vic 20 and programmed it in basic and then shoved the video output into a modulator and created a

bulletin board channel. Because that's what you did. That's what you did. An old Vic 20. Oh, gosh.

Eric 4Z1UG

28:26

So what happened after that? And what were you doing with amateur radio this whole time?

Jonathan W6JLK

28:30

Perfect transition. So when I was the regional manager for the cable system in Orange County, I also became the president of the South Orange County Amateur Radio Association. Sora and I got corporate sponsorship to go to the ARRL national conference, which that year was in Houston, Texas, because cable TV and amateurs were starting to butt heads about leakage. And since I was the guy who knew about leakage, I was sent off to represent store cable at the ARRL. And of course, I was already a life member, so I was doing a lot in that respect. I got store cable to sponsor a number of the activities of SORA, and that's one of the things that as amateurs, we have the opportunity to do, which is to reach through to our employers and get that sponsorship for amateur radio activities.

Jonathan W6JLK

29:32

I did, and I was very successful, and I was very happy to do it. So that was about that time.

Eric 4Z1UG

29:39

Jonathan, do you think that the association, or maybe the overlap of amateur radio operators working with cable television companies actually made cable television companies, from an engineering standpoint, better, less leakage? And amateur radio operators may be even better in terms of keeping their own equipment clean and functional. The relationship was actually ended up being good and improving both sides.

Jonathan W6JLK

30:04

There are a tremendous number of licensed amateur radio operators in cable TV back then and now, and people who have become really important in terms of the cable TV industry. These are people who started as technicians in various systems, then went up into corporate. So amateur radio has embedded in the cable TV companies and is represented in the national society with the Society of Cable Telecommunications Engineers, which I've been a member for 40 years. Ham radio operators are throughout the cable industry because for the same reason I was, which is this wasn't new to us. We understood transmission. We understood signals, we understood modulation. It was fun. So that's why you see a lot of amateur radio operators who have gone through cable TV systems all the way up to. Absolutely. Senior corporate management in cable systems.

Jonathan W6JLK

30:59

Amateur radio operators are everywhere in the cable TV business, even today.

Eric 4Z1UG

31:04

Right. I believe that I was in the finance side so when I finally got to cable. But what a wonderful industry it was. I don't know whether it still is. I mean, it's probably reviled in a lot of places now because the business models may not work like they used to work, where they were, exclusive franchises and areas.

Jonathan W6JLK

31:22

Unfortunately, there are a lot of appliance operators now, technicians who go out and they're told if the meter says this, do this, as opposed to understanding the reasons why we do these things. So again, that's one of the reasons why you see a lot of the cable TV licensees who are in senior positions in terms of technical management because they're the ones who will do the mentoring, who will say, yeah, you have to understand inner mod is this. It's two signals. It's mixing together, it's plus or minuses and it creates this type of

distortion. That's why you see it in the picture. This is the stuff that as a technician I deal with a lot of technicians.

Jonathan W6JLK

32:05

In fact, the next phase of my career after I left store of cable because of merger was I became an inspector of cable TV systems for local governments. From 1984 through about 2006, I inspected hundreds of thousands of miles of plant. So I got to meet a lot of technicians and the technicians who had a technical bent understood what they were doing and the technicians who were trained on. Now turn the meter on, flip it to this position. If the meter goes this far over to the right, then go look at this. And those are the people who sadly, I call them appliance operators because they understand what to look for but not why to look for those appliance operators specifically exclude ham radio operators because we're too damn inquisitive to just take the look at the meter as the answer.

Eric 4Z1UG

33:00

Well, I think that was one of the things that impressed me the most about the hams in southern California, especially the ones that were involved in repeaters and remote base stations and stuff like this, is that they were also mountaintop two way guys. They knew how to carry the spectrum analyzer with them and they knew what intermod products looked like and they could tell you the math and how it works. And there was just this love for solving the problem. And I saw that in my own systems, cable systems with technicians, that they just had this absolute fascination and love for the idea of squirting RF into a cable and seeing what comes out, especially when we started going digital. And I think you see that everywhere. So what caused you to make the transition?

Eric 4Z1UG

33:41

I mean, I'm looking now at your office with certificates on the wall and your hawaiian shirt, so obviously you've moved way beyond.

Jonathan W6JLK

33:49

I have to interrupt you. I'm sorry. I have a sister who passed recently, but she lived in Hawaii. And these are not Hawaiian shirts. These are aloha shirts. Please do not offend Hawaiians by calling these Hawaiian shirts. These are aloha shirts.

Eric 4Z1UG

34:05

So you're wearing aloha shirts and you have a bunch of certificates on the wall, which means you've kind of made a transition from engineer technician to something else. So what was that transition, and how did you make that?

Jonathan W6JLK

34:16

Well, I'm going to take a stop along the way before I get there because I think there's something important to talk about, which is that because of my technical background, I was selected to represent some of the national organizations, the National League of Cities, National association of Telecommunications Officers and advisors, US Conference of mayors back in the late 80s, when in fact, the FCC said, look, the technical specifications for cable TV are inadequate. Now, we can impose them, or you governments and you industry can work together and come up with some recommendations. And I co chaired the government side committee that worked with the cable industry to come up with national technical standards, which, in fact, are still on the FCC's books today.

Jonathan W6JLK

35:02

And because of that, I was doing a lot of national work and became very political, because when you negotiate technical standards, it's politics as much as it is engineering. Anybody who doesn't believe that doesn't know how these things work. And were able to negotiate, and the FCC did adopt our recommendations, and that really opened some important doors for me. And by this time, I was a reasonably well respected inspector on behalf of governments. But I went on to being doing more expert witness work. And one of the cases that I was involved with was a small little case called Playboy versus the United States, which came out of the 1996 Telecom act. And section 505 of the Telecom act had a requirement for cable TV systems to scramble adult channels.

Jonathan W6JLK

35:55

Playboy and another company sued the federal government, saying that it was technically impossible and also a violation of their First Amendment rights. I was hired by the FCC and the DOJ to be their technical advisor, their expert witness in that case. And I proved that, in fact, what the law required was technically feasible. That part of the case was won. And I testified in federal court in front of a three court federal panel in Wilmington, Delaware. That case went up to the Supreme Court several times, and eventually it was decided for Playboy, but not on technical grounds. Not on technical grounds. So I was very happy with the outcome of that because we showed that the technology exists to do it, and it then became a purely First Amendment case.

Jonathan W6JLK

36:40

And for the lawyers out there, you know that when you're dealing with First Amendment, virtually every time, the government loses, as it did in this case. So when I came back from testifying in that case, my wife, very soon after I got back, said, and this is almost a completely true story. I'll frame it that way. She said, you know, you're an idiot. I said, today? And she said, no, generally. But I said, okay, so why am I an idiot? She said, because you're already teaching continuing legal education courses on cable TV law. You're ghosting briefs for the federal government. You're doing legal research. You're teaching federal attorneys about this stuff. Why aren't you an attorney? And I basically made a gasping sound.

Jonathan W6JLK

37:25

And she said, and by the way, I've signed you up to go to an introductory meeting at a local law school here in Los Angeles. And I said, yes, dear. And I went. And I had a ball. It was one. A legal education mid career is an incredible experience, because the things that have made sense instinctively make sense because you understand how they come about. So it connected all the dots for me. And after I graduated, and as we like to say, eventually I passed the California bar, I, by that point, had a consulting company where I was, gosh, I had 700, 800 clients already by that point, local governments around the country who had hired me as a technical advisor. So I opened up a law firm with seven or 800 clients.

Jonathan W6JLK

38:11

On the first day, they come back and they say, need some more help? And I said, okay, but it's going to be through the law firm. They said, well, we don't care. And that law firm now has grown to having six attorneys and four support staff and two CEOs. Canine executive officers, I will tell you, technically, three. I've got to be careful. We have a third CEO.

Eric 4Z1UG

38:32

You said canine executive officer?

Jonathan W6JLK

38:34

Yes, we have three dogs who are members of the company.

Eric 4Z1UG

38:38

I see. Oh, that makes sense.

Jonathan W6JLK

38:40

They work for kibble, by the way. Canine efficiency officers are.

Eric 4Z1UG

38:44

They're in the kibble industry, right? Not the cable industry.

Jonathan W6JLK

38:47

They're in the kibble industry. They actually retard efficiency. That's okay with us.

Eric 4Z1UG

38:51

You know, I just want to interrupt here. The reason I was smiling when you're talking about this Playboy case is that I had systems in Tennessee, and there was a way to scramble the Playboy channel. We would introduce, like, an audio modulated signal into the carrier in order to kind of make it really wavy. Then there was filters that were used to get rid of it.

Jonathan W6JLK

39:13

Positive traps.

Eric 4Z1UG

39:15

Right? Positive traps. So I get a call one afternoon, and it's the manager of the cable system in Tennessee, and he says, I'm in Denver. He says, I need your help. I said, what kind of help can I give you? He says, I need to be bailed out of jail. And I said, well, what happened? He says, well, apparently one of our traps failed at the local elementary school, and the police came and arrested me. I said, well, so what was the channel? He says, it was a playboy channel in the elementary school. I said, well, okay, we'll take care of it. So we bailed him out. It was a technical breakdown of the positive trap that caused him to put his content, his extra paid content, into the elementary school.

Eric 4Z1UG

39:54

Yeah, that was a funny time to be in cable when all of that was happening. We were trying to figure out how to offer a pay service that people wanted and at the same time, to not put it in the places where it was not wanted.

Jonathan W6JLK

40:08

Exactly. And in fact, it was positive traps that I showed to the federal court that said, this is how you can do it. And you can scramble the audio. Or remember, it was a beep, beep.

Eric 4Z1UG

40:20

But it also messed up the video carrier, too, right?

Jonathan W6JLK

40:23

Messed up the video carrier. But you'd still have teenage boys trying to kind of turning sideways.

Eric 4Z1UG

40:30

Of course. Now, as kids, we had, if you remember, was it. HBO was the first scrambled product in Los Angeles on channel 52. Remember, if you go back into the.

Jonathan W6JLK

40:40

70S, that was on TV.

Eric 4Z1UG

40:43

On TV, right?

Jonathan W6JLK

40:44

Yes.

Eric 4Z1UG

40:45

So all of us teenagers were trying to build scramblers that were to undo that just to see if we could.

Jonathan W6JLK

40:51

Absolutely.

Eric 4Z1UG

40:52

Okay, so you start this law firm. You have all of these clients. What are you doing in amateur radio at this time? It seems to me a busy guy like you wouldn't have any time for operating amateur radio yet. If I look at your resume, it's full of things that you were doing at the same time. What were you doing?

Jonathan W6JLK

41:09

I was an early adopter of tapper. I built my first tapper board. The serial number was in the low 300s. I've always been in digital communications. In fact, digital has always been one of my great pleasures in terms of amateur radio. So tapper but I really went kind of low key for a while I was doing HF. In fact, my first HF rig when I was in office was a six I six homebrew. But I then graduated up to my first real radio, which was a Yaesu FTDX 560, which, by the way, I still own to this day. I think over the years I've evolved to VHF and UHF. And really my greatest pleasure these days is in emergency communications as well as Arden radios, which almost go hand in hand these days.

Jonathan W6JLK

42:02

But I've been very involved in amateur radio in terms of Aries. I am in the management of two Aries organizations, one, the larger one in southern California where I've been involved in terms of being the west side representative and be responsible for one of the hospitals on the west side providing connectivity. I am a local government liaison for the Culver City Amateur Radio association amateur radio service. Technically, sea cares where I represent the board of directors in front of the local government. And that's, by the way, that's really an important thing that as amateurs we don't do very well. We don't represent ourselves in front of local governments very well.

Jonathan W6JLK

42:45

So I actually created this position and sold the board of sea carers that we needed to have FaceTime in front of the city council and tell them what we're doing because the city of Culver City actually tremendously supports amateur radio and supports the Ares organization. Seek cares in the city. So we do that. I guess that becomes a natural for me because of my work in terms of politics as an amateur radio operator. But because I work for cities, I've also been involved in dealing with amateur radio disputes with local governments. Permit issues. That's a very common one, is permit issues. I write ordinances on behalf of local governments that also touch on amateur radio. And not surprisingly, I pretty much take a hands off amateur radio minimum.

Jonathan W6JLK

43:38

The FCC, back so many years ago, passed PRB one, adopted PRB one, which created a framework of national respect for amateur radio, if not preemption. California has a very strong, in fact, even stronger than PRB one rule for amateur radio protection. So I've been called in by cities saying, we've got this application from an amateur radio operator and we don't understand it. I said, I do, and walk through it. And this is where the technical background comes into play again because amateur says, I need a 65 foot tower. Why? Because that's what's sold well. Can you operate at a lower height? Well, I can, but it's not going to work as well. Okay. Do you have the iMac documents to show the best takeoff angle versus height? Oh, yeah, it shows 47ft. Okay. Can you agree to operate your tower at 47ft?

Jonathan W6JLK

44:41

Because that'll give your lowest angle of radiation. Oh, that makes sense. This is how I've been able to solve problems with amateurs and local governments. Still the biggest issue.

Eric 4Z1UG

44:54

Can I ask you a question, though?

Jonathan W6JLK

44:55

Sure.

Eric 4Z1UG

44:56

I think that most people these days, I see, for example, we're in an election season and everybody's concentrating on the presidential election, but it seems to me that most people and most hams, but most people, they couldn't tell you who their city council members are. They don't know who's on the school board. They don't know anything about their local government. And those people have the most influence on their day to day life.

Jonathan W6JLK

45:20

Right.

Eric 4Z1UG

45:20

For amateur radio operators, I mean, I think there's a whole reason that people should know who they're today. As a matter of fact, in my town, we have a runoff election between two candidates for mayor who happened to be very close in the last election a week or two ago. So today I'm going to go vote after this just for one of those candidates in this runoff election, because at least in my town, under the circumstances that we live in, the city council is essentially important to our lives, our very lives at this point. But I don't think most people know this about their own. So if you're an amateur radio operator, why should I become involved in my local government as an amateur radio operator? And how do I get the training or understanding of what are the issues for the city government?

Eric 4Z1UG

46:08

What do they have with me and how do we work together?

Jonathan W6JLK

46:11

The why is very easy. It's to overcome ignorance. And most elected officials are ignorant of amateur radio. In a worst case scenario, they think it's the same as cell towers. And that's just wrong. It's one of the reasons why I created this position, ccares to be a local government liaison so that we have a way of talking to the electives and doing that education, because they are the ones who adopt the ordinances that regulate antennas placement, setbacks, permit fees, that's always a big issue. Permit fee, the cost of getting a construction permit and permit fees can be really substantial, both PRB one and in fact, in California, the California legislation talks about the minimum regulation required for amateur radio.

Jonathan W6JLK

47:01

So amateur radio operators need to be politically aware of local governments because they set the rules and having a good relationship with amateur radio operators from the city side and amateurs with the city is important, but this all comes back down to when the s hits the fan, and we're the only ones that are working. So being out there and being involved in Cert. Community emergency response team with Ares. Again, I'll pick on Culver City because they're doing things so well there. We just had field day, winter Field day a few weeks ago, and it was at a fire station. We actually set up at a fire station, and then the fire department gave us one of their emergency trailers to use during Field day. So in Culver City, they've got a spectacular relationship with the fire department. Who is the sponsor?

Jonathan W6JLK

47:59

In fact, our EOC is within their main fire department headquarters. We have a great relationship with the city council, but these are the things that amateur radio operators don't do effectively.

Eric 4Z1UG

48:14

Was that immediate opportunity that your winter field day for more knowledge of amateur radio by the general public?

Jonathan W6JLK

48:21

We actually, during the summer field day, operate from a state park, which is a very popular park. The field day during the winter? No, because it's behind lock gates. It's inside fire department headquarters. But we wanted to test. We had never operated from that particular fire station before, so we wanted to see how well it would work from there. Turns out it didn't work very well. But now we have more information, and it just helps us just cement why our main operations are at the main fire station. The bottom line is

amateurs are known for experimentation, and we need to do as much experimentation within our emergency communications.

Jonathan W6JLK

48:58

That's why we do field days, why we do winter field days, why we do summer field days, why we do all those other things that are contests, but in fact, help us really hone our skills operating?

Eric 4Z1UG

49:10

Do we forget that, though? I mean, do we forget that's really the purpose of these field day operations, is to hone these skills?

Jonathan W6JLK

49:18

I hope that we don't forget them. If you get the training and it's flavored like candy, you're still getting the training.

Eric 4Z1UG

49:26

Okay, can I go back a little bit in terms of local governments? The big problem that a lot of people tell me is that they can't buy a house that's not in an HOA. But an HOA tends to be in a local government. The streets may be owned by the city and county where they live. What's the impact of involvement in local government when you have an HOA that you have to deal with in terms of being able to put up antennas and to be able to support your amateur radio hobby there?

Jonathan W6JLK

49:54

So let's define some terms here. An HOA is a homeowners association, and essentially it's a group of homeowners who are owners of homes in the same community. And when the community was developed by a developer, the developer created an HOA, a homeowners association, which is basically a local government. So they operate at the very bottom, closest to the ground level. And those HOAs will often have rules that say you can't have external antennas. Now, this is different from local governments. Local governments create rules for entire cities. HOAs create rules for small neighborhoods, and things that local governments cannot do because of law, HOAs can. And this is a huge tension.

Jonathan W6JLK

50:44

In fact, there's currently a new bill that has been introduced at the federal level that would preempt a lot of these local HOA regulations and allow for antennas where they are prohibited by the local rules of the HOA. These are good things because at the end of the day, we can't operate as amateur radio operators without antennas. It turns out that's pretty amazing, but true. You need antennas to work, and antennas need to be generally above what we call the clutter, the top of the building, the trees. You can't have them at ground level for the most part. So HOAs are very problematic for amateur radio operators. And in fact, I give a lecture to local clubs here in California.

Jonathan W6JLK

51:39

In fact, I've done as far as a couple of states away, but on dealing with local governments and HOAs, and you can't deal that much with HOAs because their rules so far are enforceable against amateurs.

Eric 4Z1UG

51:53

And they're enforceable because when you move into the Hoa, you actually sign a contract.

Jonathan W6JLK

51:58

You sign a contract that says, I agree to be subject to these rules. And the crazy thing about it, the craziest thing about it, from my perspective, in fact, I covered this in one of my lectures. The lecture, of course, is I'm from the government and I'm here. But the crazy thing about HOA rules is that, let's say you've got a ham radio operator at one end of an HOA, and then a quarter mile away, there's another part of the same HOA. Well, that person who can't see the antenna has nothing to do with it, doesn't even know that otherwise, wouldn't know that it's there, can still object by saying, look, I had to sign these rules. The amateur had to sign these rules. I can enforce them. Rules against the amateur called an equitable servitude.

Jonathan W6JLK

52:44

Essentially, anybody who's subject to the rules can enforce those same rules against anybody else who's subject to those rules. And this is a major issue for amateur radio. And so much of this predates really a good understanding of amateur radio during the building boom of the lot of these HOAs were created and it was just someone had a boilerplate that said no external antennas. Now the thinking was no external TV antennas, which interestingly has been overruled by the FCC. Now under the old rules, the over the air receiving devices rules, but the FCC has never extended those old protections to amateur radio. So those rules that were originally created in CCNRs to prohibit TV antennas have effectively been used to prohibit amateur radio antennas. It's not a good situation.

Eric 4Z1UG

53:42

And now this mid show break every two weeks I listen to the Ham radio workbench podcast with George KJ6VU, Vince VD6LK, Mark N6MTS, Thomas K4SWL, Michael, VA3MW and Rod, VA3ON, and their guest on often topical and important projects in amateur radio. This discussion amongst the regulars and their guests remind me of the conversations that I used to listen to on 146.94 and 146.46 MHz in Orange County, California while working on my own workbench almost 50 years ago. It is amazing how much practical ham radio knowledge that we can absorb by listening to the Workbench podcast. That starts to make sense when we start our own deep dive into our own projects.

Eric 4Z1UG

54:32

So join me by listening to the ham radio workbench podcast now, and as George and crew push beyond 200 episodes, you can get to the Ham radio Workbench podcast by clicking on the banner in this week's show notes page. And now back to our QSO.

Eric 4Z1UG

54:48

Are you optimistic that with the federal legislation that perhaps that will actually go through? And are you optimistic from that standpoint?

Jonathan W6JLK

54:56

Well, we are recording this talk between two friends at a time when the federal government is completely dysfunctional. And do I expect something as innocuous as amateur radio protection to get through Congress? I actually have a higher hope because it is innocuous. Maybe it can sneak through, but then again, you just never know. That legislation has been kicking around in various forms. Overl has been a strong supporter of getting waivers, of trying to get OTAR protections, trying to get Congress to step in, getting back after I'm going to circle back for a reason here. After I left Northridge and went to trade tech years and years later, as you know and figured out, I went and got a JD. After that, I didn't stop.

Jonathan W6JLK

55:47

I went and got a master's of law degree in telecommunications law, and then I finished my terminal degree as a doctorate in law and policy from northeastern University. Well, if there's anything I've learned in terms of policy, and learned it from northeastern, is that policy is constantly evolving. Policy is a circle. You begin, you get on, and you look for policy entrepreneurs, people who share the same policy interests, even though there's an old saying in policy which is there are no permanent issues. I'm sorry, there are no permanent enemies, only permanent issues. So you find the people you can support. So do I think that this will eventually change? Yes. How long it will take? It will take the right policy windows to open for this to sneak through.

Jonathan W6JLK

56:34

I wish my crystal ball were so well polished that I could tell you when, but I think it will happen. I just don't know if it's going to be in two years or in ten years. But I think the value of amateur radio, the policy windows will open, unfortunately, after a major disaster, after amateur radio operators step up, and when the cell phones crap out, and when the broadcasters go off air, and when a lot of the emergency communications and even the firstnet operations go down and amateur radio stays up, that's when our policy windows will open to help Congress justify the preemptions that we're talking about right now. So it's waiting, I hate to put it this way, but we're waiting for the right disaster.

Eric 4Z1UG

57:17

Yeah. Well, on this side of the world, we're almost there. I just bought a 7000 watt generator. I'm getting batteries for my ham station to trickle charge so I have enough to make communications. I'm experimenting with mesh tastics so that the neighbors have messaging between their cell phones, it does put things in a very specific light. And it's interesting to me that even after Hurricane Katrina and after Hurricane Sandy and all the stuff that people don't, the right people don't see the value of amateur radio. When nothing else worked, the hurricane in Puerto Rico was an amazing example of how everything can disappear for weeks and weeks. And amateur radio is the only way to communicate.

Jonathan W6JLK

58:01

Right. We didn't disappear. We're the ones who didn't disappear.

Eric 4Z1UG

58:05

Right. People got on the airplanes and flew into the disaster area with their amateur radios and provided the communications. I'm very curious. You mentioned a little bit earlier about appliance technicians, appliance engineers. Do you think that because I've talked to a number of people who are in the broadcast industry, people who are involved in the Society of cable Television Engineers, who are thinking that because it doesn't seem that young people have hobbies, at least other than smartphone viewing, like we did when were

kids and stuff. Is there a supply of upcoming young people to be engineers of the caliber that maybe our generation, the generation before that put out to be able to create this innovation in all these industries?

Jonathan W6JLK

58:50

The answer is absolutely not. And yes, and I'll tell you what I mean. The world is not a static place, as we all know, and we know that right now, what we see on the horizon is artificial intelligence and that how people maintain things will be based on inputs from AI. But will there be a place for amateur radio operators? Because amateur radio really belies a connection to AI. We'll still have people who are intelligently aware of the technology, as opposed to simply going down a checklist, going, okay, if a, then B, if C, then D, going through those decision trees. The biggest thing we need to do is to identify how to bring in young people into our hobby. And this is like so many of us started at the high school level. This is the electronic classes in high school.

Jonathan W6JLK

59:47

We need to focus on that.

Eric 4Z1UG

59:49

Are they still there? I went to the same school system that you were in as a kid. I was just talking to somebody yesterday, because the generator I'm getting only has 3 hours worth of gas tank, but we have natural gas, or essentially butane that comes out of a large tank on the street. And so I'm converting my brand new generator to natural gas, and it's not so hard, but I understand how it works. And this guy asked me, he says, well, how do you understand how that works? I said, well, I went to public school in California, and we had auto shop, electronic shop, wood shop. I took all of those classes in addition to the college prep classes. And so I had exposure to all of that.

Eric 4Z1UG

01:00:28

I spent years holding the light and I think amateur radio, because you've got to pull a generator in for field day or you've got to do something. It gives you this expertise that you couldn't get anywhere else. But I don't think that public schools anymore, at least you can say this in California, but I think across America, no longer think that those classes were important, and so they eliminated those classes from the curriculum.

Jonathan W6JLK

01:00:51

There will still always be people who are naturally know. I don't know if you know this name, but Xilen Foxlin, have you heard of.

Eric 4Z1UG

01:00:59

No, no, but I'm writing it down.

Jonathan W6JLK

01:01:01

You need to write down, this is someone who you absolutely must meet. She is a young doer and experimenter, and has involved amateur radio, very popular on YouTube, and is really wetting the appetite of young people towards do it yourself stuff. And between various technologies, these are the people that we need to get to be the influencers. Who said it's cool to be in stem? Stem is so important and supporting Stem.

Eric 4Z1UG

01:01:37

But stem is a kind of a college. What if you're add but you're good with your hands and stuff like this?

Jonathan W6JLK

01:01:44

STEM is not a college thing. I absolutely disagree with you. We need to be involving people into STEM courses and philosophy and direction at the high school level, even if not sooner than that. We need to get them excited. We need to let them know that there are STEM opportunities, and especially for young women who are still underrepresented, both in STEM and in amateur radio.

Eric 4Z1UG

01:02:12

Okay, well, STEM is what? Science, technology, engineering and math, right. I have a sense from talking to you, Jonathan, that as a C student in high school, that maybe mathematics was not your strongest suit. And frankly, I died in engineering school on the altar of differential equations and ended up getting a history degree. So I'm saying that on the one hand. On the other hand, I can fix anything, whether it's mechanical or electronic. And there are a lot of people like that. And so when you say STEm in school, I kind of think that it's in the classroom and stuff like that, and it's not in the electronic shop, but maybe you've got it. Maybe there's something else happening that I'm not aware of, or maybe we should because we're involved in our local city councils and school boards and stuff.

Eric 4Z1UG

01:02:56

Maybe we should be involved as amateurs in pushing the hands on side of the technology. What do you think about it?

Jonathan W6JLK

01:03:03

We absolutely should. And in fact, yes, I was a very average student in math because it really wasn't interesting to me. It wasn't relevant to me until I got into high school. And in electronics, suddenly imaginary numbers made sense because I was doing calculations for impedance and reactants, and this is what interested me. So I immediately knew the math because it made sense. It was relevant to me, it had to be made relevant. And when it was, I was an a student. I was an a student through the rest of my education. Absolutely, through the rest of my education, because the things that were relevant to me opened doors for me into my mind.

Jonathan W6JLK

01:03:48

And this is why finding out what triggers young people to be interested in something will find the people who are interested in amateur radio, because they just don't know it yet. We have to find them and show them amateur radio and we will find a lot of people who would just say, yeah, that's not very interesting to me. And then we'll find the, oh, wow, this is really cool, kids. So it's like anything else, it's a numbers game. And until we're out there and we're introducing amateur radio at the junior high school and the high school level and taking down some of the barriers. And right now, the FCC license fees, well, the ARRL have stepped forward to reduce some of those fees.

Jonathan W6JLK

01:04:30

Our club, sea cares, has, there's a fund to support initial licenses so that those licenses are basically, you pass the test, you don't pay things like that.

Eric 4Z1UG

01:04:43

How do we get a parent to deliver their child to an amateur radio club meeting when they don't want to sit in the back of the room at all with their kid?

Jonathan W6JLK

01:04:52

There's no single answer to this. But what there is what is important is you have to have the local government support. If we're just a ham radio club association, that's one thing. But when the city council, when the county government supports it, and we're having our meeting at the fire department, in fact, in one of the two organizations I belong to, we meet at a major hospital in the San Fernando Valley. They make their facility available to us at no charge because we support them. That's at Valley Presbyterian Hospital in Culver City. Our meetings are held at the municipal. There's a municipal building, and we have access to that because the city supports us. So it's the third party credibility that makes us different and overcome some, but not all of the concerns that you have. But again, this is a numbers game.

Jonathan W6JLK

01:05:55

We're not going to get 50% of the people. We're trying to say, hey, come look at this. If we can get 5%, it's a numbers game. You build on small numbers and you build the next level up and the next level up. And once you have older brothers and older sisters who are involved, younger brothers and younger sisters will have at least exposure to it and will want to know.

Eric 4Z1UG

01:06:18

Well, I always hope with my students that they're so infatuated by the hobby or by whatever it is they've learned that they are thought leaders for their age. So when they become teenagers, because they're doing something that's completely different than all their friends, that they kind of act as this magnet for bringing other kids into the hobby. But I think we're challenged now. It's not just amateur radio. I mean, I think that, like, every hobby is challenged with people not participating in hobbies. We're at a point now where it seems that everything's disposable and nobody needs any skills for anything. And I guess I'm worried that I'm the only guy in a city of 15,000 people that knows how to convert a gas generator to natural gas, because I know how they work, and I can find the instructions on YouTube.

Eric 4Z1UG

01:07:09

I owe my ability to do anything because of my amateur radio background. I'm frustrated and at a loss because I see that it's almost like forbidden planet. We're talking about AI, and we're talking about this technology that we have that could overtake us because we don't have an interest in how things work. We assume they just work.

Jonathan W6JLK

01:07:29

There will always be inquisitive minds that are looking for things to be inquisitive about. I believe that. I want to believe that, and I want to take the steps to find those minds and give them an opportunity. And if people will take the opportunity, that's great, but at least we've got to offer them the opportunity. We don't do that very well. We just don't reach out very well to expose amateur radio to young people. And that's why this is a hobby with

older people. I'm 69 years old. I've been an amateur radio operator for 54 years now, and unfortunately, I'm probably closer to the top of the bell curve than not.

Eric 4Z1UG

01:08:14

Yeah, you might be, actually. So what could we do different? I mean, I'm curious. You mentioned, for example, that you're doing Arden, and I think that for young people, it seems to me that Arden kind of meshes well with a lot of the Venn diagram. There's a lot of overlapping things here with Arden. You can use it with your Wi fi. You can use it with your cell phone. You can use it with. There's a lot of stuff there that could also make you a network engineer if you know how to actually do Arden. Right. What are you doing with Arden? And did that play a role in your winter field day? And does it attract, at least in your club, does it attract younger people to say, this is, like, really fascinating.

Jonathan W6JLK

01:08:51

We have an extremely extensive network in southern California for Arden. We have super hubs. We have all sorts of backbones. And yet, where I live in Santa Monica, I'm the Lone Ranger. I'm one of a couple, only a couple stations in Santa Monica, and I'm an island connected to the Arden network through a Internet tunnel.

Eric 4Z1UG

01:09:14

You can't actually connect to an Arden site from where you're at.

Jonathan W6JLK

01:09:17

Right. I don't see anything from where I am, although I should. The problem is that we need a hilltop site, and in fact, some of us are working to make that happen. But it's an early development, and you're absolutely right. Ardent meshes nicely with people who are interested in networking, computer networking, with PBXs, with messaging, all sorts of things. And the fact that it's a shadow network that touches, it's almost like the amateur radio darknet.

Eric 4Z1UG

01:09:56

Right. Or the parallel universe to the Internet.

Jonathan W6JLK

01:10:00

It is. And again, if we find the right people who are interested in it, this is really cool. I don't mean to cover ground we've already covered, but again, it's a numbers game. We've got to get in front of more people so that we get that percentage that is interested in coming in. And it's a multiplier effect again, once you have someone in the family. Right now, one of my two daughters just passed her FAA drone pilots the remote pilots exam, which I passed a while back. So she's now a remote pilot and now she wants to study for her technician license.

Eric 4Z1UG

01:10:38

What does that mean? She has to have an FAA drone pilot's license? I mean, are you talking about if she goes to a toy store and buys a \$300 drone, she actually has to have a license to fly that in California.

Jonathan W6JLK

01:10:48

It's in the US. And it depends on if you're using the drone commercially. It depends on the size of the drone. The FAA licenses drone pilots, called remote pilots.

Eric 4Z1UG

01:11:03

Really? Oh, that's amazing.

Jonathan W6JLK

01:11:05

The reason why I am is because in my business, when I'm doing wireless site inspections, it's easier to do it by drone than any other way. So it's a perfect extension of what I do as an amateur radio operator is to use drones for flying over radio sites.

Eric 4Z1UG

01:11:25

As a cable operator, you could actually do leakage detection using drones.

Jonathan W6JLK

01:11:28

Now leakage detection using drones would be a very good thing, especially if you're trying to get to back property where you can't do it. Or frankly, it's much more efficient to fly over a cable line to find that one loose connection or that one piece of cable that somebody decided to say, oh, that's a good thing to shoot at, and creates a hole. So yeah, drones here are very important in terms of inspection work. So that's why we have in our law firm drone pilots. And that's why the next license my daughter wants to get is a technician.

Eric 4Z1UG

01:12:08

License, because she's also for amateur radio technician license.

Jonathan W6JLK

01:12:11

Exactly. She's concerned about emergency communications.

Eric 4Z1UG

01:12:15

Maybe she'll be an influencer.

Jonathan W6JLK

01:12:17

I can only hope.

Eric 4Z1UG

01:12:18

Well, it sounds to me her father's an influencer as well.

Jonathan W6JLK

01:12:21

I've been very lucky to be the right person at the wrong place at the right time, depending on your point of view. But the fact that you and I are able to talk about this, the fact that you have an audience, the fact that I hope that I've shared the fact that we need to do better as a hobby at the local level, interacting with our local government officials and our planning directors who are normally forgotten about our city attorneys. These are, frankly, all these people influence our ability to operate either with support or with hassles in our local communities if we have the local government behind us. And again, I will look at Culver City as an example. Culver City, California, where there's a strong relationship, it's great.

Jonathan W6JLK

01:13:06

There are some communities in southern California where the local governments are frankly just hostile to amateur radio, and they have in their codes restrictions on amateur radio that predate PRB one or predate the California law. And yet they're still on the books and the planning directors still enforce them because, hey, it's in the code, so.

Eric 4Z1UG

01:13:27

I got to enforce it or they haven't been updated.

Jonathan W6JLK

01:13:30

That's the point. It's exactly the point.

Eric 4Z1UG

01:13:33

Right? Because there's a lot, I mean, when you think about it, if you're in city government and you're a bureaucrat in city government, there's so much stuff that's being run through the mill that unless it's brought to your attention, you may not know about it. You may not know about the things that have changed just by the enormous amount of information. Can I ask you what excites you the most about what's happening in amateur radio now? What really floats your boat?

Jonathan W6JLK

01:13:55

Well, without a doubt, it's emergency preparedness. And that's really at my core. What I really enjoy the most in amateur radio is knowing that when the big earthquake hits, I'll be the one that the neighbors will come to. I'm the one who has the solar panels. I'm the one who has the solar charge controllers. I'm the one who has CerT training. I'm the one who knows how to get out for communications purposes. I know where those resources are. I don't hope for the earthquake, but I know it's coming.

Eric 4Z1UG

01:14:29

Except you're on the wrong side of the Andreas fault.

Jonathan W6JLK

01:14:32

No, no, I'm pretty sure my side of the San Andreas is not going to fall in the ocean despite popular concerns to the contrary. No, but I've gone through major earthquake. I'm born and raised in southern California, so I've gone through major earthquakes here. And understanding that and understanding what mean I really feel sorry for the people who live in hurricane and tornado alley.

Eric 4Z1UG

01:15:00

Oh, yeah, for sure.

Jonathan W6JLK

01:15:01

Because they get hit year after year. We're once every 20 years. If anything, that is worse for us because we're more complacent and not prepared compared to the people who are in Tornado Alley or who are subject to hurricane. They're smart because they have the experience, so they know what to do and they know how to take it seriously. I don't think that we take it all that seriously here.

Eric 4Z1UG

01:15:27

I think we forget in Southern California that a lot of the built up infrastructure that you live in, for example, in Santa Monica, that infrastructure is now almost 100 years old. Yeah.

Jonathan W6JLK

01:15:37

The newer parts of it, yes.

Eric 4Z1UG

01:15:38

So Southern California is at least 60, 70 years old. The established neighborhoods, they may have been great for earthquakes then. Maybe they're not. But I'm just saying that you become complacent. You don't think about foundations and you don't think about infrastructure and things like this, especially when they're old and they're not replaced regularly.

Jonathan W6JLK

01:15:58

We still have infrastructure that's over 100 years old. We experience regular water main breaks, sewer breaks, problems with electricity, because we have mature infrastructure that hasn't grown or been replaced to follow the population trends. So is our network fragile? Yes. Are most people prepared to be on their own for a few days? No. I have here in my office, I have a week's worth of dehydrated food. I have water here. Same thing at home. People in southern California don't know that in an emergency, if all you've got is \$5 bills, everything costs \$5. So you have to have \$1 bills. These are the things you learn from experience.

Eric 4Z1UG

01:16:45

By the way, having cash.

Jonathan W6JLK

01:16:46

Cash isn't the only thing you have. It's the only thing you can have.

Eric 4Z1UG

01:16:50

Right. Because your credit card is not going to work in an emergency.

Jonathan W6JLK

01:16:53

Without being very specific, I will tell you that I have cash stashes at the appropriate places. So wherever I am, I know that I have an emergency supply of cash because cash is king or queen.

Eric 4Z1UG

01:17:06

Yeah, that's very important.

Jonathan W6JLK

01:17:07

During the 90, was it 94 earthquake, 93 earthquake here, I experienced price gouge. It was actually in Northridge. And at that time I lived about 3 miles away from the epicenter and only about a mile above the hypocenter. And for those of you who don't know earthquake terms, you should look it up because those are very different terms. I've ridden out some really interesting rides. I'll put it to you that way.

Eric 4Z1UG

01:17:33

Well, it sounds to me like you've had an amazing ride. Before we go, do you have advice that you'd give to new or returning hams to the hobby?

Jonathan W6JLK

01:17:40

Well, I think obviously I'm a big proponent to be an amateur radio operator who is prepared to support the community in an emergency. However you do that, it's better than not doing it. But have fun. Find things that are interesting. Don't just have a license and a radio that you never turn on. Every year now I do the part of the team that supports the Los Angeles marathon. In fact, earlier yesterday, now, I attended our pre meeting for the LA marathon, which is next weekend. And for years I've worked out on the track providing emergency communications for it. I love the marathon. It's wonderful

experience. I do the Rose bowl marathon as well. Find something in amateur radio that really wets your appetite and really dig into it, and you will find other people who share the same interests that you do.

Jonathan W6JLK

01:18:39

You meet a lot of nice people in amateur radio, and the fact that you have this in common just opens doors in an emergency. If I was somewhere and I was really in trouble, I would look for the house with the tower. I would walk up to that door any day of the week and know that I would be welcome because I can talk amateur radio. And amateur radio operators look out for amateur radio operators, by the way.

Eric 4Z1UG

01:19:05

You can do that anywhere in the world.

Jonathan W6JLK

01:19:07

I have no doubt about it. I would look for the antennas. That's where I'm going to go for help. That's the first door I'm going to knock on is a house with ham antennas on it. No question about it. No question about it.

Eric 4Z1UG

01:19:20

Jonathan, this has really been a lot of fun for me. I hope that you enjoyed being a guest on the QSO Today podcast. With that, I want to thank you so much for taking the time out of your busy schedule. And I know it's the middle of the night now. We've been talking for a while. Thank you so much for coming on, Eric.

Jonathan W6JLK

01:19:38

It's been an absolute pleasure and truly a privilege because you've helped me to remember things, getting prepared for this and even just talking today that I haven't thought about in years. And I think back so fondly on the things that I've accomplished, in large part because I started as an amateur radio operator, so thank you for that.

Eric 4Z1UG

01:20:00

My pleasure.

Eric 4Z1UG

01:20:01

That concludes this episode of QSO today. I hope that you enjoyed this QSO with Jonathan. Please be sure to check out the show notes that include links and information about the topics that we discussed. I am now adding summaries and outlines of our discussion to make it easier to find specific points raised in our QSO. Go to www.qsotoday.com and put in W6JLK in the search box at the top of the page.

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01:20:53

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Eric 4Z1UG

01:21:47

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