

FRED and we're talking with Bill Hanley, who is widely regarded as the father of modern recorded sound, especially in
BOUCHARD: live venues.

BILL HANLEY: We only did live venues. That was our main thing; we didn't ever get really involved in recording studio business at all. That was covered by other people. We found this naked place that nobody was paying attention to.
[Laughs]

FRED And you jumped right in. You saw the need and filled the gap. Bill is a Medford native and he has an interesting
BOUCHARD: tale to tell about his upbringing, and then we'll get into some more items about sound specifics in a little bit. Bill, welcome aboard. Nice to have you here.

BILL HANLEY: Thank you. Nice being here too.

FRED Tell us about growing up in Medford.

BOUCHARD:

BILL HANLEY: Growing up in Medford. I went to Wallen[?] Catholic grammar school--Immaculate Conception, to be proper. And from the first to the eighth grade, not much of a student, just slid by all the way through. Spent a lot of time cutting out things for the windows. [Laughs]

FRED Oh yeah?

BOUCHARD:

BILL HANLEY: Remember those images of turkeys and everything, you know? I was the guy that would do all that stuff and fix the men's radios and stuff.

FRED Snowflakes?

BOUCHARD:

BILL HANLEY: Right.

FRED That's before the time they were putting peregrine falcons there to keep the sparrows from banging in.

BOUCHARD:

BILL HANLEY: Right [Laughs] I spent my time doing that 'cause I had a problem: the same nuns taught my father and he got two double promotions. So I get whacked in the knuckles a lot to shape up.

FRED Oh dear, a tough act to follow.

BOUCHARD:

BILL HANLEY: Very tough. Attention Deficit Disorder, I think, is mostly the problem.

FRED I hear you, man. I think I've got it too.

BOUCHARD:

BILL HANLEY: And then I jumped from the eighth grade into the tenth in the vocational school. And I was interested in audio from even at the Lawrence Light Guard Armory in Medford. Well, I should say--should we start at the very beginning in electronics, or should we bother with that?

FRED That talk about your first exposure to music. You say your mother was into it.

BOUCHARD:

BILL HANLEY: First exposure to music was when I was a kid. I used to drive my grandmother crazy. My aunt had a band in Chelsea and I used to play these records on and wind up Victrola or over and over again. So there was some music there. Cohen on the telephone driving, if you've ever heard that comedy routine. But other records besides that.

FRED Gallagher and Shean?

BOUCHARD:

BILL HANLEY: That sounds familiar. There was a bunch of different things that I would listen to. And my aunt had a band during the war, she formed a big girls band, eight or nine pieces, I think.

FRED Whoa. How about that?

BOUCHARD:

BILL HANLEY: And I can remember having a sixteen--piece band in the front room with the house, and then rehearsing.

FRED Yipes. Who wrote the charts?

BOUCHARD:

BILL HANLEY: I don't know. I didn't know anything about it at the time.

FRED Were they playing big band hits of the day? Irving Berlin and

BOUCHARD:

BILL HANLEY: Yeah. Whatever that was going on that was the dance music. It was a dance band. So I had some interest there, it was coming. And playing the music and driving my grandmother crazy. [Shrugs] Then I got interested in mechanical things, very interested: built my first electric motor, then a crystal set, one--tube radio, two-tube radio, Charlestown Boys Club, six-tube radio. I would fix the nuns' electrical stuff, radios and whatnot. And there was a man down the street from the school called Jack Boston, who had a sound truck with eighteen loudspeakers on the top of it. And six of them were great big, long reentrant trumpets, high quality for the time, with a seventy-five Watt amplifier, which was big time and a 125-Watter he had too.

FRED Was it for political rallies or?

BOUCHARD:

BILL HANLEY: Well, it was for doing fairground work or South Common and Lowell--he used to do that, I guess, during the war for special events. And it was the first what they call a constant voltage distribution system. For getting the signal around to the speakers so they were all at the same level. If you parallel speakers, if the line gets longer, the ones closest to the amplifier is louder, unless you use a high impedance.

FRED Okay.

BOUCHARD:

BILL HANLEY: And then they will all play at the close to the same level.

FRED Did you go help Jack or--

BOUCHARD:

BILL HANLEY: Yes, I went to help Jack and just sit and talk about records and music and he used to play Ken Griffin that was recorded down Revere Beach at the beginning of the beach next to Winthrop, where they had a recording studio. You see a dipsy doodle, he used to play that. And I'm trying to think of the name of the other thing.

FRED Ken was an instrumentalist?

BOUCHARD:

BILL HANLEY: Yeah, organist.

FRED Organist, okay. That rings a bell.

BOUCHARD:

BILL HANLEY: Yeah. There are a lot of 78 records that he had cut down there.

FRED Okay.

BOUCHARD:

BILL HANLEY: I can't think of the name of the dance hall that was right beside on the second floor.

FRED Revere? Wonderland?

BOUCHARD:

BILL HANLEY: No, Wonderland was another location. This was right on the beach, right at the beginning of it on the Winthrop side. They had a big two-story building with a dance hall on the second floor. They made these recordings and Jack used to play them and we just talk about it and he would turn them up louder than hell and sounded great. That was probably the seventh or eighth grades. And then I started going to the vocational school which I jumped into in the ninth or tenth grade, skipped the ninth. And that put me a year behind all the other eight students that I've started with in radio and television electronics. So that sort of touches on some music interests. Then it really grew from, we went skating one Saturday afternoon and I was the youngest of all these guys and I couldn't skate very well and I decided to show them that I can learn to skate. And I fell in love with the organ and the organ music. There was a terrific organist Benny Acoin[?]. Like to put the word out and see if anybody has a recording by him. It would be a great joy to hear him again. His fingers danced on the keyboard.

FRED It was a B3?

BOUCHARD:

BILL HANLEY: Absolutely. B3 with another instrument he had. What's the name of the little keyboards that you had put going along with pianos? Novacord? No.

FRED Like a Celeste?

BOUCHARD:

BILL HANLEY: Yes, he had a Celeste and he had several small instruments right on the lower as a third keyboard down below the regular.

FRED Okay, this predates Yamaha and all those electric keyboards?

BOUCHARD:

BILL HANLEY: Oh yeah. And he had a Hammond unit that sounded like a piano with 138 tubes in it. Novachord, I think it may be that. It was a Hammond instrument from the thirties before they did the B3 I guess.

FRED So you went up to the organ booth and inspected it all and hung out with him?

BOUCHARD:

BILL HANLEY: Well yeah, and talked to him about it.

FRED Did anything ever go wrong?

BOUCHARD:

BILL HANLEY: Yeah, they went out of tune. The capacitors would change capacity and change the tune, so you had to periodically put new capacitors into them. A capacitor is just two pieces of tin foil with a piece of wax paper between the tin foils and as it gets older, the plates get closer together and it changes the characteristics, changes the capacity or the characteristics of a device and changes the tuning of the instrument.

FRED Does it change the timbre as well?

BOUCHARD:

BILL HANLEY: Probably. I didn't pay much attention to that. Mostly I just went from the note and what Ben said it would do it.

FRED Yeah, sure. If it's out of tune, it sounds horrible.

BOUCHARD:

BILL HANLEY: Right. And so I would repair that periodically for him.

FRED Cool.

BOUCHARD:

BILL HANLEY: And that was later on during it after I got to learn to skate pretty good. And then I guess I fell into going to a place called the Cave in Boston for Latin music. Tito Puente used to play in there.

FRED Love that man.

BOUCHARD:

BILL HANLEY: Me too. And learned to dance ballroom dancing and then went to big band stuff up at Hampton Beach Casino ballroom for a guy named John Danino owned the place. I used to go up there trying to sell them to get a good sound system. They had one microphone in front of a big band. In fact, I made one of my first tape recordings up there with Tommy Dorsey. The old theory was to get the microphone in the exact spot where you got acoustic mixing and everything in the right place, and he let me record him.

FRED How'd it come out?

BOUCHARD:

BILL HANLEY: It came out pretty good. But as I got more into dance and everything, when I would move away from the stage, the enjoyment would sort of, for me, I saw it come down because I was used to all this power from the organ and this instrumentation being right there for me. When you walk away from the stage, it sort of decreases.

FRED If Tommy came up to the single mic to play his muted solo on Song of India, what happened to the rest of the orchestra?

BILL HANLEY: Way down low. And then you have five thousand people in this ballroom. You look at a person is six square feet of Infinity for sound absorption. So the energy gets absorbed into the people in a dense crowd. And so the joy was to me wasn't there as much so. It was there, but not anywhere near as strong as it was if I was standing right up at the stage in front of the stage.

FRED So part of your mission was to get good sound to the back of the hall.

BOUCHARD:

BILL HANLEY: Right.

FRED The last seat in the house as John King said.

BOUCHARD:

BILL HANLEY: That's it, that's it.

FRED And this is your lifelong mission in a sense.

BOUCHARD:

BILL HANLEY: To make the world a little better place to live in and having people understand and the joy that was being created by the musicians on the stage and trying to convey that out to the masses. And that was where I developed the ideas going to the Gardens and listening to what they were doing and listen to the ice shows that were coming in. And then go into Tito Puente which is a small room with The Cave but going to the ballroom really died out fast. And I was trying to get them and then going to Roseland in New York, that's later on, and trying to get them to do something about the sound to make it more enjoyable. And get people more emotionally involved in the music and dance to go along with it.

FRED For those that are watching this video, let's drop in a couple of names as to where we're going here. We'll get there eventually. You were the guy who did Woodstock, Fillmore East, recorded a huge number of rock bands that are on everybody's lips, including Frank Zappa, The Allman Brothers, Grateful Dead, Fleetwood Mac, Van Morrison.

BILL HANLEY: Well, not so much recording, but doing the sound reinforcement systems.

FRED Doing the sound. Yeah, doing the live sound. Those of you are watching, we're getting there, little by little.

BOUCHARD: [Laughs]

BILL HANLEY: We recorded them for Woodstock and stuff, but we did it. I just didn't, I don't think about it in those terms.

FRED Let's keep the chronological thing happening. Boston Garden?

BOUCHARD:

BILL HANLEY: Yes.

FRED What happened there?

BOUCHARD:

BILL HANLEY: Well, Boston Gardens, my teacher, Mr. Rawson in the school was very friendly with a guy named Bonnie Noonan who was the electrician at the Garden and he controlled the sound system. So my teacher sent me in there to see him because he found out I was interested in that stuff. So I would go in and I met Bonnie. He lived in Medford too and knew my father which I never knew before. And so I got open door policy for me to go in there. Mr. Brown, who is the manager of the garden, knew my uncle who went to work with him every day and worked in Boston at the south postal-- north postal, excuse me. So now I had free access into the Gardens anytime I wanted. That's where I met John Kiley.

FRED Who was the organist for the Bruins and the Celtics?

BOUCHARD:

BILL HANLEY: He played for everybody.

FRED And the Red Sox.

BOUCHARD:

BILL HANLEY: That's right, he played for everybody, all the big teams.

FRED He was busy fifty weeks out of the year.

BOUCHARD:

BILL HANLEY: Yup.

FRED Now, was it Bonnie's overriding principle to have the same miking for whether it was a sports event or concert?

BOUCHARD:

BILL HANLEY: It wasn't his thing. That's just what they did.

FRED Okay.

BOUCHARD:

BILL HANLEY: They just didn't--

FRED Didn't think about it.

BOUCHARD:

BILL HANLEY: No. No one thought about it at all. I mean, the same problem happened at Carnegie Hall, which is supposed to be known for having any special events, they had one microphone. That was it and they mixed it from the coat from a little closet in the backstage area. You can reach up in the air and change the level.

FRED So front of the house is one of the concepts that you developed and pioneered.

BOUCHARD:

BILL HANLEY: Right, I was the first. I was the first guy to come in and go out in the audience and have to fight to get that position because the promoters didn't want to give up the money.

FRED The seats.

BOUCHARD:

BILL HANLEY: That's right.

BILL HANLEY: Still going on today. Oh it's awful.

FRED Oh, I know. One of my music journalism students, Stephanie Planchart, is the sound engineer at the Berklee

BOUCHARD: Performance Center and she's got her console there and she does a hell of a job. But she's eating up, you know, ten or fifteen seats that would be paid attendance.

BILL HANLEY: But money. Money is more important than the musicianship, which is what, I feel, should be paid attention to.

FRED Totally.

BOUCHARD:

BILL HANLEY: The same things happening at, what's that, Shalin Liu?

FRED Shalin Liu in Rockport.

BOUCHARD:

BILL HANLEY: Yeah.

FRED What's going on up there?

BOUCHARD:

BILL HANLEY: They spent twenty-three million dollars on this establishment.

FRED I've been there.

BOUCHARD:

BILL HANLEY: Okay. They took the sound console out of the center of the house and moved it to the back up in the top where you cannot hear direct radiating sound from the center cluster.

FRED Oy Vey, I had no idea.

BOUCHARD:

BILL HANLEY: I mean, it is just awful. I was up there with grace--

FRED yeah, Grace Kelly.

BOUCHARD:

BILL HANLEY: Right, and I'm looking, the guy has to get up off his chair and run down about sixty feet to listen to how the sound system sounds.

FRED Yipes.

BOUCHARD:

BILL HANLEY: Because it was designed for classical music, I think by some European. I don't even know how they managed to get a sound system in it because the room acoustically is incredibly good.

FRED Yes, I did notice that, but--

BOUCHARD:

BILL HANLEY: It's fabulous because they have all these broken surfaces so that the reverberation is much nicer.

FRED Everything's diffused and--

BOUCHARD:

BILL HANLEY: That's right, everything is diffused. Exactly what happens. But the soundman who's controlling your microphone is going to run down sixty feet, run back and change the levels.

FRED Bad planning.

BOUCHARD:

BILL HANLEY: It was planned to go down in front. Not in front but down halfway in the house and the manager of the house made him go up back.

FRED Aye yai yai.

BOUCHARD:

BILL HANLEY: And now we can't hear anything. And there's some speakers up there, but they are set up evidently in some kind of reverberation set up to make classical music sound better, but the minute you get involved in direct radiating information from the stage and electronics being an extension of the musician, then it's terrible. I mean, this woman spends all this time thinking about our recordings and writing and music and everything. And then the guy controlling her sound might as well be stuck in the men's room.

FRED Hm, okay.

BOUCHARD:

BILL HANLEY: Which is terrible, which is the fight I've been having for fifty-something years. [Laughs] And the battle goes on and on. Nobody wants to give up a few seats in the house. "You'll lose some money."

FRED Yeah, yeah.

BOUCHARD:

BILL HANLEY: Never mind what we're selling of the performers that spends hours and hours and hours here at school learning their music and learning to be a great performer in performance. And then making joy on the stage. And I find it's my job to bring the joy out to the ears, all the way to the back, not just sitting in front. It's going on at Jocko's too.

FRED Oh, that's another story. We'll get there eventually. Talk about your relationship with George Wein.

BOUCHARD:

BILL HANLEY: I met George at Newport, as a matter of fact, he became my teacher of how to mix jazz. I heard that they had trouble with the sound system. A friend of my father's [inaudible] called me and told me that they were having a lot of trouble with the sound system at Newport. And they had evidently moved into Freebody Park and that big concrete stand and the sound was ricocheting off it, and he was distributing the sound around and it was driving the performers crazy and it sounded terrible. I never saw the terrible set up, but the people that were doing the walk around area for the Boston Public Garden Arts Festival back in the 50s were doing the sound for that, for George, for the Lorillard family. So I went down there to try to help out with that and come to find out that they had brought a guy in that was doing the sound at the tennis courts out in Queens. Forest Hills. He had a good sound system and he had a booth set up where the microphones were being controllable-- two booths set up, one for the lighting and one for the sound system. The trailer set up to do the recording. RCA, CBS and a bunch of different recording companies. They had artists there and they were doing live recordings at the time. And they fed me three signals in stereo using expensive microphones and U47's and that kind of thing. And schoeps. Good quality stuff. Except that they had them set up in a room with these two mixes and then 400 watts of power amplifier Macintoshes, but I couldn't hear what the sound system was doing. All I heard was through the walls. No direct energy from the sound system. And George kept making sure that I had the balance going and he was my first really teacher of how to mix jazz. I felt terrible in this room because I couldn't control the stuff the way I thought it should be controlled, because I would like to try to have control of the incident with someone doing solo such as with Duke Ellington start playing the piano. How do you make it louder, because it's important for people way out in the audience to hear that. And fighting the band boys who would take the microphone off the piano because Duke didn't want to take the show away from his other musicians.

FRED Put in front of Johnny Hodges.

BOUCHARD:

BILL HANLEY: Right. The one microphone that they would have, alright. Or two or three down there. They would have more microphones there because they were trying to do three track stereo.

FRED Stereo had begun by then. '56.

BOUCHARD:

BILL HANLEY: Yes, it was in there in that order and they were trying to do that right from the masters and they went into a three track setup and then they would--

FRED The three tracks would be a general mic, a mic for the vocalists and then a third one?

BOUCHARD:

BILL HANLEY: And the other two picking up what else was going on.

FRED Okay.

BOUCHARD:

BILL HANLEY: Because they weren't using close mic techniques. Now, without close miked technique you can get into feedback problems really bad, fast and terribly, because that's the sound engineer's nightmare. My nightmare is to do shows without feedback. That was my modus operandi. Sitting in a room, you have no idea what you're doing. In fact, you can hear a couple of recordings I did early there or that were done by somebody else there that I would have feedback problems.

FRED What are some of the mechanical causes of feedback?

BOUCHARD:

BILL HANLEY: Feedback is when the microphone hears the sound from the sound system.

FRED Okay.

BOUCHARD:

BILL HANLEY: It picks up the energy from there over or at the same time, it's picking up the instrument. And I didn't have direct control because they weren't my microphones and I didn't lay the stage out with the microphones.

FRED Okay. The feedback is not going to result from Louis Armstrong chasing Velma Middleton around the piano in the middle of a number, right?

BOUCHARD:

BILL HANLEY: No. It's going to happen when I try to pick the level up to bring the soloist and bring him front and forward to the audience.

FRED Okay.

BOUCHARD:

BILL HANLEY: As the leader of doing that rift and then counterpoint, then what else is going on musically. So that's basically what happens and why I was stuck in that jam. Should we go into my time with the when I took it over myself?

FRED Sure. Up till now you had to deal with the like making setups of the major labels that we're trying to record.

BOUCHARD:

BILL HANLEY: For Miles, right.

FRED Did you say Miles?

BOUCHARD:

BILL HANLEY: Miles Davis.

FRED Miles Davis or Maynard Ferguson, or Count Basie or whatever?

BOUCHARD:

BILL HANLEY: Whatever, whoever was there and what's going on at the time, because that's what's different about my mission is that everything has to happen--[snaps fingers]

FRED Okay.

BOUCHARD:

BILL HANLEY: You have to have the microphone on.

FRED Is it either or? Was there some way for you to work in concert with these recording people or did it have to

BOUCHARD: be...was it either the audience or the sound?

BILL HANLEY: Well, they were trying to get between them but it was impossible because they've gotta face the music when they get back what they're recording.

FRED Okay.

BOUCHARD:

BILL HANLEY: I'm the guy who gets shot if it's not right for the audience.

FRED But they couldn't fix it in the mix back at the studio playing with the pots?

BOUCHARD:

BILL HANLEY: They didn't want to. They don't want to, and they weren't using pan pots at the time they were trying to do real live stereo.

FRED I see. Okay.

BOUCHARD:

BILL HANLEY: The new stereo is when you take an input and then you decide whether it goes to the left or the right hand channel with a thing called a pan pot.

FRED Okay.

BOUCHARD:

BILL HANLEY: And in the old stereo thing was having two microphones in having a left and a right microphone and then acoustically mixing it back and forth.

FRED I got you, okay.

BOUCHARD:

BILL HANLEY: For convenience, we put in the pan pot and then we could electrically send a single microphone to the left side or the right side. And making that happen so that you build a recording later, but they weren't into that at the time. After George died, after I did the recording at the Bradford Roof-- not the recording but after I did the sound system at Bradford Roof and then the Pleasure Island thing, then I started doing the main concert at Freebody Park and I pulled all the equipment out the consoles out to the front and started doing my own microphones and recording myself, so that I was in charge of everything. And then I send the tapes. Some of them went to George, coming out in a-- what the hell's the name of that outfit? Bill Graham's..uh..

FRED Bill Graham, Bill Graham. Fillmore?

BOUCHARD:

BILL HANLEY: Yes. Fillmore East and Fillmore West, but his name was what was.. You can buy their recordings there still. Something or other vault.

FRED Okay.

BOUCHARD:

BILL HANLEY: What is the name of it? It'll come. The guy bought all the recordings from George and from Bill Graham.

FRED John Chester?

BOUCHARD:

BILL HANLEY: No, John Chester was the electrical engineer at the Fillmore East.

FRED Okay. Sorry. Anyway, George saw the efficacy of your system, of your--

BOUCHARD:

BILL HANLEY: Mixing idea.

FRED Design at the Bradford Roof when you recorded George sharing with--

BOUCHARD:

BILL HANLEY: I didn't record him there, I just did the sound. But then, Pleasure Island, I did it there and then I started using more microphones to try to make that happen. And then when I went to Newport and George took it over himself, I believe it was '62, that I bought four Scullys, Four track Scullys. Two seventies I believe they were. And then started doing the recording there and then I controlled. I built my own fancy console with EQ on every input launch event preamplifiers, and LA2A. Automatic volume control units. And then I would start putting fifteen, twenty microphones, trying to get a microphone on every instrument that was going on up there and then I would sit in the audience where I could control it now because they didn't have so many feedback problems because I get the microphone in close of who's doing solo and who's doing backup. Not backup, what do you call it, rift, for the performer and then bring them up just underneath it, and you can control. I can control it now.

FRED Were you out front with the front of the house set up at this point?

BOUCHARD:

BILL HANLEY: Yep, that happened right up.

FRED In the front row of the audience and Newport?

BOUCHARD:

BILL HANLEY: Right. I went probably about fifty feet back so I could hear what was going roughly from the stage itself, and then I could hear the speaker to my left or right hand side depending on which position I was in. Now I could try to make the sound system sound like what I heard from the stage.

FRED Okay.

BOUCHARD:

BILL HANLEY: Because we kept getting hit with different acts all the time, so therefore you'd have to get an idea of what they were sounding like there and then make it happen for the audience.

FRED I've got here that after you did Newport '57 and on into the sixties, you also had rock shows for Don Law's Tea

BOUCHARD: Party, Boston Tea Party. You were doing show rock stages at Foxboro Stadium and also for the Velvet Underground.

BILL HANLEY: New England Life Hall. We were there at the birth of you know, I'm in the Dylan film you can see me on the stage there.

FRED The Bob Dylan movie?

BOUCHARD:

BILL HANLEY: Yes. His history. You can see me on the stage with a cute little hat on. [Laughs] It's funny.

FRED The one thing that the Italian director did, the four hour one?

BOUCHARD:

BILL HANLEY: I don't know whether that was that one or not. I don't know. It was where, what the heck is his name? The guy that played the organ, from the the village in New York. I can't think of his name at the moment.

FRED Jimmy Smith?

BOUCHARD:

BILL HANLEY: No. He wasn't in August, he was lead guitar player with the Blues project. Al Kooper.

FRED Oh, Al Kooper. He's on the faculty here.

BOUCHARD:

BILL HANLEY: Yeah. So to remember his name, shoot! [Laughs]

FRED How do you make a rock show differently from a jazz performance? Or is it have to do more with the room than the instrumentation?

BILL HANLEY: Well, it has to do with Rock gets so loud that you've got to get the microphones right in close to what you want to pick up. The rhythm guitar, lead guitar, vocalist, organ, whatever their instrumentation they're set up for, to use. And then try to listen to the records if you can beforehand to know what they want to sound like.

FRED This might be a good time to start filtering in Chad Blinman questions.

BOUCHARD:

BILL HANLEY: Sure.

FRED Let me ask you this, the way he phrased it. The demands placed on live sound systems rose steeply in the sixties and seventies. Can you please talk about the state of the technology at that time and how you push past those limits to deliver more sound to larger venues and audiences? You've already begun it, but.

BILL HANLEY: Right. We had started to do it back there and then. Well, we should start where the musician electricity became an extension of the rock musician. And that was with The Beatles and Bobby Dylan. I mean when Bobby Dylan went electric with Kooper down at Newport, What's distorting? Is my sound system distorting, or is the instrument distorting? How do you make that determination? I spent no time rehearsing other than the first time you went up there as a folk act without Al Kooper. You know you're sitting there and it sounds terrible. It just sounds terrible. They have all this distortion. You have to be careful because up until that time, everything was right on the edge. Fifty-watt amplifier feeding a speaker that was made designed to partly put out fifty watts maximum. Not for very long either. And you could very easily blow the diaphragms, which we did. So now I'm caught between a rock and a hard place, when you start turning the gains up and down on these, the guitar amplifiers rhythm and lead, trying to make sure that you don't go past your distortion point, because then all kinds of stuff happened with these amplifiers, they don't behave playing non distorted information and then when you start playing distorted information, you're clipping the amplifiers. Lots of nasty things happen in them. They generate their own distortion which, like Jimi Hendrix, use that distortion--

FRED Famously.

BOUCHARD:

BILL HANLEY: That's right. He was in control of that and the amplifiers by that time had become much bigger. But you still have to deal with those problems--why I'm going back to the beginning is that I didn't know whether I was a foot or [inaudible] back because I was scared to blow my speakers out. Then you got [mouths words silently]

FRED Nothing.

BOUCHARD:

BILL HANLEY: Sounds fantastic, doesn't it? Nothing.

FRED You can't repair them on the spot.

BOUCHARD:

BILL HANLEY: I do. I do have stuff, but you have to run up and it takes a half hour to find it and fix it and we did it, but you're embarrassed by it.

FRED The audience is going crazy.

BOUCHARD:

BILL HANLEY: Well, the bass sort of held up, but the highs with the guitars and stuff with the distortion didn't, like, at all. So you had all these things going on to make sure that you could keep the show together and keep the joy moving out from the audience to the audience.

FRED Was it more difficult, the larger the space got, the harder it was to control it or project it?

BOUCHARD:

BILL HANLEY: When you had to project it more and you had to turn it up louder. The problem was that you'd hardly get the promoters-- when you're a pioneer in this thing, the promoter doesn't want to give you the money, the same as the promoter doesn't want to give up the seats in the house because it would cost them money. And since he was the principal person that controlled everything that all turned around with The Beach Boys. Brian Wilson started putting us in the specs that we were in charge of the sound and the sound and the promoter would hire us to do the sound.

FRED So as part of the contract you were written into the program.

BOUCHARD:

BILL HANLEY: Right, we were written into the program, and you will do as Mr Hanley says you'll do. You will give up some seats-

FRED This dates from what, like '68, '70?

BOUCHARD:

BILL HANLEY: No, back in the '67,'68.

FRED Oh good. So right after the Beatles.

BOUCHARD:

BILL HANLEY: Right after the Beatles, true. The Beach Boys started because they heard us and they never heard anything like us before in the concert business, and then they brought us on the road with them. So we were now in the rider.

FRED Oh man, yeah.

BOUCHARD:

BILL HANLEY: And then we got more speakers and a little bit more money and a little bit more--

FRED More respect.

BOUCHARD:

BILL HANLEY: More respect and get good positions in the house where we could hear and understand what was going on. Because as you sit down in the audience, there's a big drop off in sound level. Try it someday. Stand up and then sit down and hear how the level drops down because all of a lot of energy is eaten up by all the bodies around you.

FRED Probably chronologically would be good to bring in Chad's next question here, talking about The Beatles Tour.

BOUCHARD: You were on board for that?

BILL HANLEY: Yes, I was not the first, the third Beatles tour with Brett--

FRED '66?

BOUCHARD:

BILL HANLEY: Yes.

FRED It's known for--

BOUCHARD:

BILL HANLEY: With Barry and the Remains.

FRED Okay.

BOUCHARD:

BILL HANLEY: That's how we got in. Barry and the remains. Barry Tashian. He was a student here, I believe.

FRED Barry Tashian. Okay.

BOUCHARD:

BILL HANLEY: And Billy Briggs and somebody else. I think they were students here.

FRED Cool, we'll check on that. The audiences were louder than the bands at this point.

BOUCHARD:

BILL HANLEY: But The Beatles, that was insane. I mean, I didn't even know the sound system was going. I had 600 Watt amplifiers at the time. They weighed up about almost two hundred pounds, this amplifier. And I had a distributed sound system and I had no idea what was going to happen.

FRED Today we used to shrieking teenage girls and high decibel levels for Justin Bieber and others. But back then it was--

BOUCHARD:

BILL HANLEY: A totally new thing.

FRED A new thing.

BOUCHARD:

BILL HANLEY: It happened a little bit, probably for Frank Sinatra, but not anywhere near is not in a big venue like that when you have 42,000 girls, emotionally charged to beat the band and all facing in the same direction in a circle.

FRED How did the sound industry, you, adapt to that high pitched screeching?

BOUCHARD:

BILL HANLEY: Well, you just kind of get more and more equipment, but it didn't happen. It only happened a few, you know a few times on the tour. It just happened to happen there. I think what happens is there's a psychological factor that happens that they start making noise and if you can't override that noise, I was not warned what was going to happen.

FRED How did you adjust? How did you adapt?

BOUCHARD:

BILL HANLEY: When you didn't, you were dead there. I was dead. I wasn't dead, but it was working, but it all ran like it was supposed to, except that they made so much noise you didn't know it was on because one masks the other.

FRED Okay.

BOUCHARD:

BILL HANLEY: Each one putting out a Watt of energy? That's 42,000 watts of, you really screaming at the top of your lungs, you can put out some serious level.

FRED Were their subsequent equipment designs to compensate for that.

BOUCHARD:

BILL HANLEY: We see more and more of it. There wasn't too much. The glues had become much better to make the speakers and a better magnet.

FRED Glue?

BOUCHARD:

BILL HANLEY: Yeah, the glue in the voice coils and the speakers. I mean, not old horse glue, epoxy--

FRED What were the materials they were made from.

BOUCHARD:

BILL HANLEY: I don't know what they were using. Epoxies weren't in yet.

FRED Okay.

BOUCHARD:

BILL HANLEY: And they were baking the glue in ovens of JBLs and stuff, JBL speakers. And they would crush the wire into a rectangular shape, round wire and then the glue would set into it and they were using a paper form. The forms became much thicker and heavier and the magnets became better, so you get more efficiency compared to a D130, which is a very efficient speaker. Still is today, but they stopped making it. These things all improved. Well, they had big speakers like that back in the late thirties with the World's Fair. Cinaudagraph made them with a five inch voice coil where the JBL was a four inch voice coil. They were pretty heavy duty, but they weighed 150 pounds, that speaker from the Cinaudagraph back in the late thirties. But they were all gone by that time, and there were no more world's fairs to use them at.

FRED BOUCHARD: Do you have any anecdotes you'd like to share about your setups or with Velvet Underground, or at Foxborough or Don Law's Tea Parties?

BILL HANLEY: Well, that was sort of a permanent installation. We weren't manning that.

FRED BOUCHARD: Okay.

FRED BOUCHARD:

BILL HANLEY: We were asked to supply equipment rather than men, which you should have men to run those things and then they have somebody just turn the level up and down, but nobody had a lot of good equipment around so we rented equipment to them-- what was the name of John Laws place? You just said it a minute ago. Tea party. But then we started with the Cafe Gogo in New York and Bitter End and the Other End. I set up an office at 888 Eighth Ave trying to service the acts down there. The Rock acts. And trying to get people at Roseland to put in a big sound system in for the big bands.

FRED BOUCHARD: Were you successful?

FRED BOUCHARD:

BILL HANLEY: No, they wouldn't spend a dime on it. It was hard. We even went out to the coast to Bill Graham's set up at Fillmore West and Chet Helms at the family dog, which was the main areas, the main venues that the rock acts were using, the Dead and whoever else was out there.

FRED BOUCHARD: Other than the DL130s, what were some of your equipment pieces of choice?

FRED BOUCHARD:

BILL HANLEY: Well, the power amplifier, we started building our own from Acrosound and we couldn't build it as efficient as Macintosh, so we ended up using Macintosh as the basic power amplifier. The 275 and the Mac 350 Watt 3500 series laboratory standard amplifier.

FRED BOUCHARD: Are they making anything like that anymore that is durable and powerful?

FRED BOUCHARD:

BILL HANLEY: Oh yeah, they're making bigger and better. I mean it's gone through the roof now. Solid state, these were tube amplifiers, eight tubes and push pull parallel.

FRED BOUCHARD: Let's move on to one of your high points, your career, Woodstock. What were those very special challenges that you faced there in terms of designing this system and running the mix?

BILL HANLEY: Low budget. [Laughter] Nothing unusual about that. Well, I located the area, designed a security system and laid out the whole outer backstage area.

FRED BOUCHARD: You were brought in on the ground floor to pick the spot where they were going to set it up?

BILL HANLEY: I was brought in there to look at all the areas that Max had. He had several fields.

FRED BOUCHARD: Like an architect or a field general.

BILL HANLEY: Right.

FRED BOUCHARD: Damn.

BILL HANLEY: And I took one look at the field, came up, Max had fields on both sides of this road. We come out of his house, took a left hand turn on 15-B I think it is down the road. Take the next street on the left, went down, took the next street on the right. And then he said "Well these are my fields", and he starts pointing the fields out. Then I saw this beautiful sloping area which ended up being the area and I said stop. I want to see this area.

FRED BOUCHARD: A natural amphitheatre of sorts.

BILL HANLEY: And then I designed and laid out the Big V with the twelve foot walls to keep the kids back and make them so they could get in and out, to some degree. And make them twelve feet high, the stage area was ten feet high and then Chip and company designed the stage itself and the three dolly circular method of changing acts which they had trouble. Someone didn't put washers in the screws, and the dolly's screws pulled out down to the stage and that was the end of that.

FRED BOUCHARD: Yipes. Is this where you instituted your sixty-foot-wide hydraulic stage?

BILL HANLEY: No, that's later on.

FRED BOUCHARD: Okay.

BILL HANLEY: That's just Woodstock. And then I laid and designed that out and he couldn't afford to put in time delay systems because each time delay was an eight or nine thousand dollar item at that time to put secondary stuff in, secondary speakers. So I had to design it with two levels, one level for the back, and I figured we were supposed to design it around one hundred thousand people. If you look at the air photos of it you can see how it was laid out, and I designed and laid that all out because I was probably the most experienced festival guy there, other than Chip and then Chip only looked at it from the lighting point of view. I looked at it from the sound and the rest of it, and then started fooling around with the stages and stuff. Because Chip decided he was going to go into the staging business at Newport and Steve Cohen, who was the guy that actually built most of the stage, one other guy at Woodstock. That's basically what I did, and that's how it got laid out. And I didn't go any further to look at any of the fields. That was it. After that field we stopped. It was ideal.

FRED Did one size fit all for the acts that were coming on there? Hendrix, Janis Joplin, Allman Brothers, holding company, whoever was up there? Did you vary the system each act?

BILL HANLEY: No, you didn't get time to do any of that. I had--

FRED No soundchecks, nothing?

BOUCHARD:

BILL HANLEY: Nothing. I had done most of the acts anyway, so I knew it was going on. I was doing sly and most of the acts. Janis. We did them all at the Fillmore.

FRED Okay.

BOUCHARD:

BILL HANLEY: Fillmore East. So it wasn't it wasn't a new thing for me at all. It was just making it all happen. I spent most of my time trying to get a console I had built for that. We had built 1 console which was going to be a fifty microphone input console with Langevin preamplifiers and EQ on every input with pan pots and the works. But we could never get enough money together between doing more acts and then trying to get them to spend more money on it, as pioneers in this thing, that's a very hard thing to do. Because nobody was supplying the money, Michael didn't want to spend enough money to buy more time delays where now you can buy time delays, cheap and hell. Back then it was eight thousand dollars for a one time delay to give me a few seconds of time and putting multiple speakers out similar to the setup for the Philharmonic in the Central Park system. Are you familiar with that?

FRED The Central Park sound system?

BOUCHARD:

BILL HANLEY: The sound system for the Met and for the Symphonic Symphony.

FRED No. That was yours too?

BOUCHARD:

BILL HANLEY: No, you should look at it, though. It's quite an interesting system whose Chris Jaffe's out of Connecticut.

FRED Okay.

BOUCHARD:

BILL HANLEY: But the idea is that the stage is here and then you put a semi circle of speakers and you keep going out and then the sound leaves the stage, goes out the next first set of speakers takes the sound and sends it out. Then the next set of speakers come, as the sound is getting to that sound through the air, then those speakers play just behind it and then again and again, and that's how they're done now. The big ones and good ones.

FRED Like a relay of sorts.

BOUCHARD:

BILL HANLEY: That's right. Just timed so it comes out just behind the original. If you measure the time from the microphone, the solo microphone going out, you'd set them just beyond that, just behind that time, so it always seemed to be coming from the stage rather than the speakers that are in front of you.

FRED You're talking milliseconds here, or if it was light, angstroms.

BOUCHARD:

BILL HANLEY: Yeah. And that was what I would have liked to have done, but there wasn't a budget to do it, so you know, just getting a budget to work. Now they spend money like crazy on it.

FRED In Woodstock you weren't just dealing with the live sound, there was recording going on there too.

BOUCHARD:

BILL HANLEY: I did all the master recordings.

FRED You did the master recordings?

BOUCHARD:

BILL HANLEY: Two 8 tracks.

FRED And you did them at the behest of the various labels that everybody was working for?

BOUCHARD:

BILL HANLEY: No, we just did them at the behest of the movie people.

FRED The movie people, okay.

BOUCHARD:

BILL HANLEY: What's his name...I forget his name. Michael Wadleigh and company.

FRED Okay, so they were in charge of everything.

BOUCHARD:

BILL HANLEY: All they were in charge of was with the movie and they just asked me to record it and I recorded it all with Lee Osborne, who was my engineer.

FRED Did somebody put out sound recordings subsequently of all that?

BOUCHARD:

BILL HANLEY: Yeah, Warner Brothers put them out. Lee did the mixdowns. We got runner up Academy Award for sound for that film. We didn't make it and that was--

FRED That was '70?

BOUCHARD:

BILL HANLEY: Something in that. And we did the mixdowns. I don't have the patience for mixdowns because I just love making it happen for the audience.

FRED What were the challenges in recording Woodstock? They must have been substantial.

BOUCHARD:

BILL HANLEY: Well, we use close mic techniques, so it's not as-- just getting information where the microphones are and what's being put on the tracks is what was important, and that's paperwork and then getting it and putting it back together again. Doing the mixdown is what...It's like doing the studio recording after you've mixed all these tracks so you design the tracks around the entity you want it to end at or end like. Whereas everything is put together instantaneously and you've got to get the tracks down and then make sure you got them, and then put them together and then remix it so that you make it sound as best you can.

FRED So you were doing all the remixing post facto?

BOUCHARD:

BILL HANLEY: Lee did the remixing for the film. I don't know who did the--

FRED Lee?

BOUCHARD:

BILL HANLEY: Lee Osborne was my engineer for that. I was working on another console that I made up for it that was having electrical difficulties. I was having parasitic oscillation problems so I spent a lot of my time on that.

FRED So you had a team in place and you covered the bases.

BOUCHARD:

BILL HANLEY: Yes. We had seven sound systems going a night at times. We still had another job that night. [Fred laughs] That's my thing. And we pioneered in it. And then other people came along and filled in [inaudible] and what not.

FRED Let's move on to the peace rallies in Washington and New York. It involved Peter Yarrow, Hoffman Hayden, Jane

BOUCHARD: Fonda.

BILL HANLEY: Yeah, we did all the big antiwar movement events. Then the government attacked me. I did Johnson's inauguration. They had to put two sound systems in.

FRED What do you mean by two?

BOUCHARD:

BILL HANLEY: Well, do you want to get into that story?

FRED Sure.

BOUCHARD:

BILL HANLEY: That's an interesting story that the Cardinal Cushing here in Boston put the pressure on Kennedy for Di Mambro to do the sound who had a big sound, a bigger sound company up on Commonwealth Ave. who had done a lot of the churches and his engineer was Gardener Hanson, who did the sounds and he did the churches and schools and factories. That was the main way of communicating in factories and in schools. And he was putting these things in all over the place and the Catholic schools. And the cardinal put the bite on Kennedy to have a local person do the sound. Di Mambro wanted to do the inauguration itself for Kennedy. There was enough pressure put on it that the architect went out and got the official photographer for the Congress to take pictures of the sound system and what he thought was the sound system. And set it up for bid for the sound system for the inauguration itself the next four years later, the next one would do Johnson's, but Di Mambro ended up doing the pray route for the Democratic Party in Washington, which was I think about nine sound systems along the avenue.

FRED There must have been a challenge.

BOUCHARD:

BILL HANLEY: It was a challenge. The next four years later, I won the bid for the sound system for the inaugural. They've set out a set of specifications, and I won the bid. I was low bidder. They had somebody look at the pictures and write a set of specifications because I was really the first outside sound system man that ever did the inauguration. It was done locally in Washington all the time for the architect of the Capitol, who was George W. Stuart at the time. I won the bid and then a couple of weeks later, after I had won the bid, Johnson decided he wanted the Mormon Temple Choir to come in. Now I have three hundred people I got to mic.

FRED Shipped in from Salt Lake City.

BOUCHARD:

BILL HANLEY: Right. And how do you do that? Well, I get called on the phone and could I do anything about it? Well, I said sure I can do something about it, I could bring my stuff from Newport and other stuff I had. So we wired them with twenty-four microphones.

FRED Where were they set up?

BOUCHARD:

BILL HANLEY: They were set down at the

FRED Reflecting Pool or something?

BOUCHARD:

BILL HANLEY: No, this was at the east front of the Capitol, which is opposite to where it is now. That's the West front. That was falling down for years. Buttresses and everything because the wood was giving away, some of the wooden timbers before it got fixed properly.

FRED Wow, You don't think of wood, you think of marble.

BOUCHARD:

BILL HANLEY: But well, they had stuff that looked like it, but the other front side. There was marble on the east front, but not on the West front. They didn't have the money to do that then I guess.

FRED More taxes.

BOUCHARD:

BILL HANLEY: That's right, more taxes. The bankers own the country, that's who owns the country. Anyway, so I get a call from him and I said I could do that, I can do it well and so now they said "Will you do that?" So now I had a set of specs that they did and I had my specs. I had the consultant, who was nervous from the service, made me buy all this other--I referred to it as junk, from his sound system because he took it from pictures that the photographer took of the one for Kennedy. So I had to buy all this stuff and he really didn't understand. They had speakers put where there were lights. And how I found out was that they gave me when I said, well, how can I put the speaker in there? There's a big light up there. He said, "Wait a minute I'll go get the pictures," that they gave to the acoustic consultants man. And sure as apples there was a light up there, and for some reason rather someone decided it was a speaker.

FRED How lame.

BOUCHARD:

BILL HANLEY: So I had all these speakers and stuff. But that's how it was when I started putting them in. But he made me buy all that, I referred to as junk for me at the time, I was far outclass in that.

And so I put my sound system in and their sound system in as he specced, and then we A-B-ed it. It was funny, we did it about two days beforehand and we listened to my sound system, punched, did it great and everything else. And then we changed. The only thing that was common was the power amplifiers. The Macintosh power amplifiers, which you may be put in special racks, had metering on every amplifier, so you could watch it that was the only difference?

FRED Security issues.

BOUCHARD:

BILL HANLEY: No, it's funny I'll tell you about a security issue with it. It was funny. What transpired was we changed the speaker wires over to his speaker system. The preamplifiers were separate, just for the president's microphone. The microphones for the chorus were alongside the chorus sub mixed and sent back to the sound room which was in the crypt which is three stories down from the Dome straight down. He thought we were cheating. His system sounded so poor compared to my system. We blew him away. He went running back to make sure that we weren't cheating. [Laughs]

FRED Cheating by doing what?

BOUCHARD:

BILL HANLEY: By turning the level down.

FRED Oh, Okay.

BOUCHARD:

BILL HANLEY: And making his system sound poor or the system he took one of the pictures. Because he was really not making events happen well. My mission was to make events happen well. His mission was studying sound and how it relates to rooms and equipment and whatnot, and studies of machinery to make sure it's quiet, and that's what they normally do. So what ended up happening was we never turned his speakers on again. [Laughter]

FRED You mean you just used yours and everything came through?
BOUCHARD:

BILL HANLEY: Right, so far, much better. And then we A-B-ed the microphones and blew the microphones away, but up until that time the predecessor microphones that sounded poor compared to what we were using.

FRED Is this 1968?
BOUCHARD:

BILL HANLEY: 1965. January 20th.

FRED '65, Okay. This is really an outdoor amplified ceremony. This got you gigs at MIT, subsequently, for doing their
BOUCHARD: commencement.

BILL HANLEY: Yup.

FRED How did that prove a different challenge? You just had fewer people, but more speakers?
BOUCHARD:

BILL HANLEY: Well, it was designed by Dave Klepper out of Bolt Brannigan and Newman. Doctor Brannick from MIT, he had the acoustic consultant company. In fact, he was the guy that helped at the Boston Arts Festival, where I saw my first high, really high quality sound system, at the Boston Arts Festival. And I was over there and had my nose in all aspects of it. They were using a Scott amplifier, four of them 50 watt-ers. And it sounded nice, and it was good for that. Now they tried to use it, remember the theater on the Charles River? Across the street from WBZ.

FRED The theater?
BOUCHARD:

BILL HANLEY: Remember, they had that Dome shaped thing that looked like this. [Gestures]

FRED Oh.
BOUCHARD:

BILL HANLEY: On these columns that were wrapped around, there's still a sloping area over there where they sloped the ground where they contoured the ground out.

FRED Yeah, I went to a couple little concerts in there. Did they take it down?
BOUCHARD:

BILL HANLEY: Right, but before that it was Sir John Gielgud Margaret Leighton appeared there in Much Ado About Nothing.

FRED Oh my heavens.
BOUCHARD:

BILL HANLEY: And they had all kinds of sound problems there because nobody anticipated what the roof was made out of was a balloon and it was being filled all the time with air and the sound got inside the balloon. So they had a Shakespearean style stage, which protruded out into this Dome area and then people sat U shaped around it in a typical Shakespeare setup

FRED Like the globe.

BOUCHARD:

BILL HANLEY: Yup. And the sound got up inside, so the last eight or nine rows in the seats could not understand a word that was being said.

FRED Oh boy.

BOUCHARD:

BILL HANLEY: And they brought some of the stuff in from the Boston Arts Festival, and they didn't do it because they just had it at the back. So I brought in the sound system and reduced that to so you could hear and understand what was being said, brought my own rebels in, which had been designed by Paul Klipsch.

FRED Let's talk about Fillmore East, founding that with Bill Graham in 1968 and and of some of the acts that you work with, there are some of the events that are worth mentioning. The Who's premiere of Tommy, 1969. Fleetwood Mac, 1970. The Grateful Dead, Janis Joplin, Jimi Hendrix. New Year's Eve concerts. Woah, what a lineup. What is, how did you

BILL HANLEY: Well Chris Langhart had designed the rigging system for the balcony system and I designed the sound system to go in there. Chris was a TD at NYU. Chip Monck designed the lighting system. That was the first place we really did constant close up of the performer with Janis with a video setup similar to here, and blew her up on Josh's, the light show's screen, just behind the set with the light show. So we designed and built that. We had done the first one for Bill Graham with John Morris down at the Anderson Theater three blocks below. We're on Second Ave where the Fillmore East was at Sixth St. And I had a warehouse at Fifth St. A storefront down there. We had done the sound at the Cafe Gogo and the Bitter End and the Other End in a permanent installation similar to the Tea Party. I was moving towards much more control for the bigger events, and then because people asked me to rent equipment to try to make it better and they didn't want to spend that a lot of big money for it at the time. We did a master recording out of there, and that's basically what transpired. I had a lot of gear because I had been doing all these different jobs everywhere and acquired a bunch of it.

FRED You inherited the space, you didn't design it so--

BOUCHARD:

BILL HANLEY: Right.

FRED Did you have one sound system set up at Fillmore East that stayed pretty much stable?

BOUCHARD:

BILL HANLEY: It stayed there permanently. It was there. And then Chris and John Chester and a few other guys ran it all the time. Lee Osborne ran that system all the time.

FRED A lot of recordings came out of there.

BOUCHARD:

BILL HANLEY: Not a lot, but some recordings came out of there. And then later on some other recordings came out. It was a lot I guess.

FRED Did you have anything to do with Fillmore West?

BOUCHARD:

BILL HANLEY: No. Graham, when I went out there, and I saw Jim Lyons for the Monterey Jazz Festival. He had no interest in doing it. He was doing his own thing and that was the end of it. Chet Helms didn't want to get elaborate on the sound angle of it. Swanson was selling him gear for Fillmore West, and I think he was selling it to The Family Dog, Chet Helms' room.

FRED We should talk about one of your major innovations and all the components of it. The front of the house--

BOUCHARD:

BILL HANLEY: Mix position?

FRED Mix position, yeah. When did you first utilize that? Was that at Newport?

BOUCHARD:

BILL HANLEY: That was Newport. As soon as Miles left and I took it over myself and I moved it out there. I actually moved it out with the Pleasure Island show.

FRED Okay. This is in Wakefield, Mass--

BOUCHARD:

BILL HANLEY: Right.

FRED It was a kind of like a Disney--

BOUCHARD:

BILL HANLEY: It was a Disneyland ripoff in the East Coast.

FRED How did you devise this or conceptualize it and then how did you adapt it from place to place?

BOUCHARD:

BILL HANLEY: Well, it wasn't so hard to do that, you just demanded the seats and have to fight with the promoter to have him give up the revenue for those seats.

FRED Once you got that--

BOUCHARD:

BILL HANLEY: Then at least we could now hear what we were doing and you can usually sense when feedback is going to happen. You hear a little bit of a ring, you can now hear it. It's not way, way down in the background and yet the speakers out front are playing loud and then you're getting trouble because the feedback is coming from the microphone is hearing the sound system.

FRED So you can anticipate it and adjust the pots accordingly.

BOUCHARD:

BILL HANLEY: Right, just turn the pot down a little bit, tell the performer to get closer to the microphone.

You get up and you move the microphone into the performer, giving you what you call good signal to noise ratio, which is what's really important. See that's what's different about recording and sound systems and transmitting all that energy out to the audience. If you start to try to do it acoustically, the minute that the microphone hears and you start putting very sensitive microphones out there, like the recording companies did back in the early days of Newport, it's so easy to go into feedback it isn't funny. My job is to not do feedback and not be seen, just heard. That was around that modus operandi. Get him close.

FRED Yep.

BOUCHARD:

BILL HANLEY: Get him in the right positions and then be able to turn it up so that everybody can hear and understand and transmit the joy and the excitement that's happening on stage as far and as wide as I can to the audience that we're anticipating. And to try to keep it so it doesn't go far beyond that. You try to keep it in house.

FRED Your other innovations were spinoffs or part and parcel of this basic design, the snake cables, the wedge
BOUCHARD: monitors and the hydraulic lifts.

BILL HANLEY: Yeah.

FRED And you pioneered all that.

BOUCHARD:

BILL HANLEY: We were the first people to do that kind of thing. First people for video for the concert with Janis. And for Newport, as a matter of fact. And I had got the idea back in the fifties. That's where I picked up my first projectors. Luckily how I managed to do all this was that the theater started to close because TV was coming in. And I started to get some good equipment at a reasonable price.

FRED Well, now that you mention it, since those days of your first innovations, what other significant changes have
BOUCHARD: happened to live sound technology that you've noticed and applauded or disparage?

BILL HANLEY: Oh, I applaud all the power amplifiers that have gotten much better, mixing is getting a lot better. A lot of people aren't listening a lot, though I have to say that. There's an interesting--

FRED What do you mean?

BOUCHARD:

BILL HANLEY: Well, they're not, unless they're coming with the act, they don't seem to be in tune with the musicians and performance.

FRED Explain.

BOUCHARD:

BILL HANLEY: Well, the difference between lead guitar and rhythm guitar and keeping them in proportion to one another.

FRED Oh okay, yeah. That specific.

BOUCHARD:

BILL HANLEY: Right. And keeping track of all right and keeping the levels in balance. And getting the speakers on the right--

FRED So how do you educate the engineers to think musically?

BOUCHARD:

BILL HANLEY: Well, that's very hard to do. You have to keep telling him, like George told me when I first started doing it. "Hey! You gotta turn that guy down and turn this one up."

FRED So George had the ears and kind of queued you initially right to get the feel for it.

BOUCHARD:

BILL HANLEY: Right. And then I got the feel for it really pretty quickly because I had done a lot of dancing and skating. I didn't dance for the sake of dancing. I danced for the music. It's a difference. Big difference.

FRED So I mean, it's kind of commonsensical if you observe the dramatic dialogue going on with the instruments on

BOUCHARD: stage--

BILL HANLEY: Well put.

FRED Maybe a little bit of the input from the audience interaction and you use your noodle. Running a board for a jazz

BOUCHARD: group or a rock band isn't going to be that much different if you just pay attention to the balances.

BILL HANLEY: That's right. That's exactly true.

FRED Maybe you need to go to a music school to be good at it.

BOUCHARD:

BILL HANLEY: Probably.

FRED We're cranking him out here now.

BOUCHARD:

BILL HANLEY: You crank it? Good. That's what we need. [Fred laughs] That's what we need. The other thing we need people for is we need people to pay attention to the house and how where the speakers are placed. I remember going to the AES in New York and having lots of very good gear but some of them aren't placed in the right positions. And people can't understand what's being said. It's one thing to hear. It's another thing to be heard and understood. Because if you don't get the higher frequencies to those cochlear's so they can understand what's said--

FRED Enunciation, articulation.

BOUCHARD:

BILL HANLEY: That's it. That's the key in speech and singing. The same thing. And getting them writing them on microphone, getting the balance between them. If they're complicated and new and you don't hear the music on the radio, the way they want the harmonies to come together in the audience's ears. And how to set the speakers up so they're not bouncing off of highly reflective wall, causing distortion and not a pleasurable thing going on. Like Seals and Croft, we were out with them now, down the arena in Rhode Island. And I was still thinking intelligibility, so I hung this great big suspended system right from the ceiling. And I'm thinking intelligibility, Seals and Cross manager's thinking reverberation. They like reverberation because the audience anticipates and knows the words and the harmony thing gets washed with all these terrible acoustics in this building super and they love it. But I'm out there trying to make it more biting, intelligible and not having a dialogue with the performers as to what they want to have happen.

FRED Wow.

BOUCHARD:

BILL HANLEY: So you really need to have a dialogue with the performer. I did Philadelphia for twenty years. I could not get the powers that be down there to take the performer and go into a cubicle somewhere and let me listen to them live in a room that was blocked out from all the other sounds so I could understand what they wanted to sound like. And then I can take that picture and go out there and transfer it over to make it happen for the big audience.

FRED You're not going to get that from listening to their recordings.

BOUCHARD:

BILL HANLEY: Well, you get an idea, but you know.

FRED Maybe a little.

BOUCHARD:

BILL HANLEY: You get an idea, but like I always wanted the mixer to go out, but I could not get them to put that effort into it. Rent a container for the weekend, which is peanuts, or a big trailer, twelve-foot wide trailer. Go in and have them do their thing in front of me in there you can throw a sound system in there and listen to them with no sound system and then you try to make it sound like they sound to you. And paying attention to all the different things that are going on.

For Seals and Croft, I was paying attention to diction and intelligibility from my early days of trying to make good, intelligible stuff. They wanted to be lots of reverberation.

FRED Yep, it ain't Diana Washington and Anita O'Day.

BOUCHARD:

BILL HANLEY: That's right. These things should be resolved and you should spend time doing it, if you don't know the performer. Recording engineers have ages of time to do it over and over and over again.

FRED You're on the clock.

BOUCHARD:

BILL HANLEY: My ass is grass and it's coming fast. [Laughs]

FRED It's live.

BOUCHARD:

BILL HANLEY: : It's live and you're in the shooting zone.

FRED Yeah, the hot seat.

BOUCHARD:

BILL HANLEY: Hot seat of the house.

FRED But I mean, you're the tenth player there on EQ. You're part of the band.

BOUCHARD:

BILL HANLEY: That's true.

FRED People gotta understand that.

BOUCHARD:

BILL HANLEY: That's exactly right. Some do now, it's coming more and more, but it's the old timers that really have a hard time.

FRED But I mean, bands travel with their roadies and soundman now.

BOUCHARD:

BILL HANLEY: That's right, they do and they have some idea of what's going on. I'd like them to spend more time making sure that the speakers have directed the right ways depending on the House, which is a key important factor so that you try to get to all the people instead of--

FRED You talked about making an innovation there with Seals and Croft. It says here that your stage wedge monitor came from working with Neil Young's Buffalo Springfield.

BOUCHARD:

BILL HANLEY: That's correct.

FRED How did that occur?

BOUCHARD:

BILL HANLEY: Well, they were renting the equipment from me. Bruce Deforest and Dave Phasen were their road people and they came and got the sound system from me. I met them in New York and they got the Macintosh amplifier and Altec mixer and they took it around with them, and they were renting it by the month. And I flew out to California and went out to this [inaudible] hall and came to listen to them. They're sitting in this room. And I said, what the hell you need the sound system here for? They can't hear themselves.

FRED Yipes.

BOUCHARD:

BILL HANLEY: Big time. And so I said, well if that's the problem, then here's how to solve it. And I took the speaker and the Rebel 5 that Paul Clips designed and I turned it around this side up at an angle right at the back of the microphone. So now it's got good signal-to-noise ratio so that it wouldn't hear the monitor very much and then it's facing up to the ears which are now facing down to the speaker, so we get maximum conductivity of audio energy to the ears that have to hear it. They wanted to hear it. And that's how the footlight monitors came into existence.

FRED Wow, just like that.

BOUCHARD:

BILL HANLEY: Just like that. Neil could not, they could not hear themselves and they would play in the speakers and the speakers were all just facing around their kneecaps and they're sitting in chairs. Turn him around, face them. You can see pictures of that with Janis using them.

FRED Let's segue from that to Chad's last question about the use of in ear monitors on stage. It's very prevalent

BOUCHARD: nowadays. How early were people in the industry experimenting with that? Why didn't it catch on any sooner?

BILL HANLEY: Well the in-ear monitors weren't around very long. When you were in these high ambient noise levels. My nose is getting stuffed up.

FRED Me too.

BOUCHARD:

BILL HANLEY: I don't know what it is, but anyways, probably because we're talking so much.

FRED Maybe it's mold in here or something. [Laughs]

BOUCHARD:

BILL HANLEY: It could be. Doubtful though, but it happens to me. I'm allergic to cats and stuff and if I talk for long periods I start to get my diction goes down.

FRED Bill, you and I certainly aren't moldy figs. [Laughter]

BOUCHARD:

BILL HANLEY: Okay. So where was I?

FRED In ear monitors.

BOUCHARD:

BILL HANLEY: In ear monitors. They couldn't take the kind of level at that time, way back there. I've had earphones like that way back there, but. It just wasn't there. And I never thought about using them that way because unless you block out all the other energy that's coming in your ear with a good tight fit then you're still driving more energy into your ears to override it, which is not a good idea, right? They have it far away. So I never never moved in that direction.

FRED Have you ever designed or improved the design of anything because of a pet peeve?

BOUCHARD:

BILL HANLEY: My brother built the first. Well actually, we built it in the office. We built the first higher level audio system for intercommunication to override it. And then he started using Telex headsets and stuff for high level so you can communicate to run lights and sound and whatever. And we did that. We were using A5 wire cable and Charlie Button designed one with a three wire cable which is in use today big time.

FRED
BOUCHARD: Let's wrap up with some of the honors and awards you've received from the Audio Engineering Society.

BILL HANLEY: Front of house Parnelli award.

FRED
BOUCHARD: Okay.

BILL HANLEY: That was very nice.

FRED
BOUCHARD: You're still active today.

BILL HANLEY: Yes, still doing Jocko's in Chelsea and Boston...What the hell do they call it? Forget the name. Boston Swing Central in Charlestown. We're doing the audio there. That's coming in strong.

FRED
BOUCHARD: Cool. Jaco's Jazz is up in Methuen.

BILL HANLEY: Yes.

FRED
BOUCHARD: At the Sahara restaurant.

BILL HANLEY: Club, yes.

FRED
BOUCHARD: Which has Syrian food and jazz bands Tuesday nights.

BILL HANLEY: Great jazz on Tuesday nights.

BILL HANLEY: First rate.

FRED
BOUCHARD: And you're keeping your hand in and doing your thing.

BILL HANLEY: Having fun.

FRED
BOUCHARD: That's important, we gotta keep having fun.

BILL HANLEY: And once in a while, I'll go out with Grace Kelly and help her out.

FB You mean he hit the road with her?

BILL HANLEY: Locally. She can't afford to go out yet, but--

FRED She's doing a lot of travels, but she can't bring her roadie overseas.

BOUCHARD:

BILL HANLEY: She's doing great.

FRED John Kane is writing a biography on you called Last Seat in the House?

BOUCHARD:

BILL HANLEY: Last Seat in the House, yes.

FRED It's a student effort so far, but he's been working diligently on it. It'll probably get published, or at least online

BOUCHARD: before too long.

BILL HANLEY: Yep. He's coming along and doing a lot of video.

FRED I'm hoping that somebody like Chad Blinman will have you aboard here again for a more intensive sound

BOUCHARD: exploration, we just touch the surface on some of your innovations and a little bit of your career. But I know that there are people in MP and E and sound engineering and the audio departments that are really going to want to sit down and have a more intensive chat with you.

BILL HANLEY: Sure, delighted.

FRED Maybe put you in the studio and cut you loose.

BOUCHARD:

BILL HANLEY: One of the important things is the drive to, well, being a pioneer is a different trip. When people are receptive to your work, it's much nicer than when they're not. It's a real problem when they don't care, and you're talking to yourself. It's a real problem.

FRED Yeah, and talking to someone who's a little bit more gend up on it than myself will bring another level of

BOUCHARD: inspiration to your comments.

BILL HANLEY: Yeah, sure. I think it would be great.

FRED This is a blast though, I really enjoyed it.

BOUCHARD:

BILL HANLEY: Thank you.

FRED After all those Hanukkah parties at Stan's and Marion's? [Laughs]

BOUCHARD:

BILL HANLEY: Right, we never quite crossed.

FRED Yeah.

BOUCHARD:

BILL HANLEY: You didn't know how crazy I was. [Laughs]

FRED Oh, this is wonderful. I mean, I'm always trying to listen hard at concerts, but you don't always necessarily know
BOUCHARD: what's going on behind the scenes to make it come over.

BILL HANLEY: Depending on the ambient noise that the group is making. That's one of the things that really helped push the state of the art. And having more powerful amplifiers and more monitoring systems. Because as the ambient noise level goes up and in order to have a lot of people to hear at all and understand, everything has to come up to deal with the noise in the room. And it's really hard to get people to deal with the acoustics in the room which come into play then and try to make all these things integrate into a very happy experience for the audience which has been my modus operandi.

FRED I still hear albums put out that were recorded on wire recorders and primitive equipment in the fifties and sixties.
BOUCHARD: You can hear people talking as well as you can hear the piano.

BILL HANLEY: That's when they were doing acoustic mixing.

FRED Yeah.
BOUCHARD:

BILL HANLEY: If the piano wasn't putting out that much energy. Now it used to drive me crazy with Duke and with Count Basie and stuff, the band guys would come up and pull the microphone off the piano. [Fred laughs] Now, his intros are incredible.

FRED Sure are.
BOUCHARD:

BILL HANLEY: But he evidently psyched up his band guys to take care of the equipment to take the microphones off because he didn't want to interfere with his soloists. And I would be tearing my hair out trying to have this transmission of joy out there.

FRED Bill, that's a ball.
BOUCHARD:

BILL HANLEY: Well, thank you. It's a pleasure.

FRED I thank you, Count Basie and Duke Ellington thank you.
BOUCHARD:

BILL HANLEY: Thank you. There's a plant. [Laughs]

FRED Alright. We'll have a volume two here at Berklee, I'm sure before too long.
BOUCHARD:

BILL HANLEY: Sure, whatever you like.

FRED Thanks again. Happy Easter!
BOUCHARD: