

ASHRAE Leadership Recall (formerly Leadership Recalled)
Transcription

Interview of: Preston McNall

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Interviewed by: Steve Ivesdal

Steve Ivesdal

Hi I'm Steve Ivesdal, chapter president of the Kansas City chapter. Today I am really honored to be part of a Leadership Recall committee and interview a distinguished member of ours with a very distinguished career. And we're going to review some of the contributors to the Society and to the industry and that would be Dr. Preston McNall. Hi Pres, it's sure good to have you here today.

Preston McNall

Well thank you for inviting me.

S.I.

Drive up from Kansas City, K State was a nice drive wasn't it?

P.M.

Sure was.

S.I.

In January for Kansas. We had pretty good weather. Well Pres I think what we'll do is kind of go back to your roots. Where you grew up and where you went to school, a little bit about your education and then on to what you did in the industry, the jobs you had. And of course move into ASHRAE and all of the things you've done for ASHRAE. So why don't we started out, tell us how you got started in life I guess.

P.M.

I was born in Madison, Wisconsin and my father was a professor there at the University of Wisconsin. So throughout my early career there was no question that I was going to go to university somewhere. That was sort of a given in our family.

S.I.

No discussion. That's the way it was going to be.

P.M.

No discussion. That's the way it was and so as a kid I was drawn to mechanical things. We fixed bicycles, I and the guy next door. And we bought little old Maytag engines and whatnot and tried to put them on carts that we'd made and so on. And I and a guy I worked with in school built a soap box derby racer in Madison, Wisconsin in 1938 or so. And we won the local race.

S.I.

Was it motorized?

P.M.

No, just the one coasts down the hill. We won it and we went to Akron, Ohio for the Nationals. We didn't place there at all but that's give you an idea of the background that I had and the interest.

S.I.

So when did this all happened, high school?

P.M.

Yeah in high school and so there was no question that I was interested in and engineering things. And after graduation from high school I went to University of Wisconsin in engineering, finished seven semesters out of eight and got drafted in the war and was in the in the Seabees which was a construction battalion so that was a good thing to be in if you were interested in engineering. And I finish my small career in the Navy at that point and went back to finish my degree at Wisconsin and then I went to graduate school at Purdue and finished a master's and doctor's degree there, at Purdue in mechanical engineering. And then I started my career at Honeywell.

S.I.

You started at Honeywell in 1950 something?

P.M.

Yeah '51 actually yeah.

S.I.

What type of work did you do there then?

P.M.

Well I was in the applied research department of Honeywell which was a small research operation about 30 people that had to do with the controls and the devices that led to the marketing in residential and commercial air conditioning and heating. Not the aerospace business and places like that were handled by different groups.

S.I.

And so then you worked there for quite a few years.

P.M.

Yes I was there all together for 14 years. I had several positions during that time. They ended up being the chief engineer of Applied Research for the residential division of Honeywell. At that time we had a whole 15 people I guess in the department and we're doing research on thermostats and valves and air cleaners and things of that sort.

S.I.

That was kind of the beginning of the electronic air cleaner am I right?

P.M.

Yes I was heavily involved in the air cleaner development which Honeywell got into during that time, had not been in before.

S.I.

That was kind of your first exposure to clean air as you're an expert on today.

P.M.

That's right. I guess I'm supposed to know something about air quality and that's where we got started.

S.I.

It seems to me you had about four or five careers in your career here.

P.M.

All together at the one at Honeywell I say is my first career was in engineering research and I ended up being a chief engineer of applied research there at Honeywell. And moving on from there I went to

Kansas State University and was associate director of the environmental laboratory and ended up a department head of mechanical engineering at Kansas State. And then I went to Johnson Controls as director of engineering there and that gave me my third career. And from there I went to the Bureau of Standards where I was chief of the building environment division, again a research operation for the Bureau of Standards that again more heavily on ASHRAE interests all the way through my career.

S.I.

And then you ended up in your own consulting business?

P.M.

Yes after I retired from the government why I then was a consultant and I still am doing some consulting after ten years so that's a fortunate thing to be able to do I think.

S.I.

Yeah you are fortunate man, I assume you enjoyed all of them.

P.M.

Oh yes.

S.I.

I know your stint at Johnson Control was kind of the beginning of building automation back then. You must have been involved in that.

P.M.

Well that was, I was a mechanical engineer and of course at the time why, Johnson and other control companies were moving into the electronic systems of control and of data handling and so on so forth. And that was not my bag so I then left for the Bureau of Standards after.

S.I.

I see so what were some of the hot items that the Bureau of Standards in that term that you were there? What was the big issues?

P.M.

The Bureau of Standards of course when I was there was two big issues. One was energy and energy efficiency of appliances. Air conditioners, furnaces, of building walls and windows and things of that sort and also air quality which was just coming out as a problem in the industry for many, many reasons. When the energy conservation area why, people buttoned up their buildings so they didn't breathe as well as they used to. And when energy was cheaper and that exacerbated the problem of indoor air quality.

S.I.

Yeah that's right. Well here at Kansas State, you worked in the environmental lab.

P.M.

Yes.

S.I.

So was that all energy related back when you were involved in that?

P.M.

Primarily energy related and also comfort. In other words at Honeywell when I started out in comfort, what makes people comfortable and from an engineering point of view temperature, humidity, radiation, air quality, the air velocity and so on. Then when I came here we were doing the same thing and the other associate director of the laboratory was Dr. Fred Rohles who was the experimental

psychologist and he handled that aspect and I was supposed to handle the engineering aspect of temperature, humidity, and those kinds of measurements. And determine what it is made people comfortable and also in so far as possible trying to see whether or not they could perform. If we have air conditioning in office we certainly want people to work in the air conditioned space. And what temperature, humidity, and radiation, and so on is involved in getting a maximum out of their productivity. I'd like to say that what the environmental engineer should do is to prepare for an environment which takes the strain off of people. They don't sweat, they have to vibrate, they don't have noise, they don't, so that they can take the stresses off them as people and then they can work. They can work better. That common sense tells you that. Throughout the years there have been experimental work which I have done some of, trying to analyze what it is that makes people perform better than one environment than another. It's a very difficult job and I say it's not done. Not well understood at this point.

S.I.

We all know when we're uncomfortable. Your job is to figure out why.

P.M.

We all know that and ought to figure out if we're uncomfortable. Does it bother our performance?

S.I.

And it's what's making us uncomfortable the big key. We think we know. What were some of the thing that might have surprised you about the human body when you got involved in that?

P.M.

Well I think the important things from an engineering heat transfer point of view was that the body was three or four feet tall even if they are seated down and a little taller if you're standing up and the convection that flows over your body, the natural convection to which you lose heat is convection coefficients are quite low with great big bodies like that compared to little things. And that and radiation. When we sit in the room at home we have a picture window over here and that gets cold in the wintertime and we radiate to that. And so the radiation and the convection and so on needs to be understood so that we can provide an environment that people will be satisfied in.

S.I.

Good. You know, if you and I have discuss today and I think in the past, you had five careers, did I count them right?

P.M.

Yeah I'd say five different.

S.I.

But they were a something that brought it all together and it sounded to me what you were talking, ASHRAE kind of brought it together for you. Because you went from one, through an ASHRAE contact and the next thing you know you're at another one. Why don't you explain how your ASHRAE contacts had moved around.

P.M.

In my undergraduate work and my graduate work that was in heat transfer did not have anything to do with HVAC as such. It turned out it was a very good background for the heating, ventilating, air conditioning. And when I graduated and went into the job market, Honeywell made me an offer. I liked Minneapolis and I knew Honeywell as a good reputation, as a good company to work for. Then it

sounded interesting so I went to work for them. And there was when I got my interest in HVAC. Originally I was involved in the research operation looking at the thermal comfort and what made people comfortable in so far as we could tell. And therefore I got interested in ASHRAE and that was my first experience with ASHRAE was technical committee on thermal comfort. And that was one of the technical committees, Honeywell's 90 or 100 of them now or excuse me ASHRAE's 90 or 100 of them now and they were available to anyone who wanted to study a particular subject, comfort in this case. And so you could go to the meetings, attend the committee meetings, you could meet the chairman, you could contribute if you had anything to say. If you did contribute and this is of course part of my work at Honeywell, then you got asked to be on the committees.

S.I.

Next thing you know you got a job.

P.M.

Next thing you know you're on the committees and that's how I got started in ASHRAE all on my own. Nobody had to tell me what to do or how to do it. Somebody had to stand at the door and see if I got qualified to get in because these are open meetings to anybody and that is one of the strengths of ASHRAE.

S.I.

Any member can come in and sit down and listen.

P.M.

Any member can come in to any committee meeting.

S.I.

I never thought of it that way before but that is the strength. You don't have to have any pass. All you have to do is pay the guy at the door whatever the fee is and you can come in and sit down and you can listen all day if you want.

P.M.

That's how I already got started in ASHRAE was through those technical committees anyone can go to. You meet people there that are doing similar work to yours who contribute to committee's activities and you learn a lot and contribute as well.

S.I.

So with your ASHRAE activities and then as you want to expand your career wasn't it an ASHRAE contract that moved you to your next career?

P.M.

Yes. That of course, if we want to talk about people who have affected me in ASHRAE I would say my first so-called person who affected me was vice president John Haines of Honeywell. He was a vice president of the commercial controls division at the time and was very active in ASHRAE

S.I.

He encouraged you to go on.

P.M.

Became president in the late 50's.

S.I.

President of ASHRAE?

P.M.

Yes president of ASHRAE in the late 50's and he somehow rather took a liking to me I guess and so he mentored me, he mentored me if you will into ASHRAE. Although I was in research and he was in sales we weren't reporting to each other in any way of fashion. And so he got me interested in going to ASHRAE and ASHRAE's, excuse me Honeywell was able to support me. They said yes if you're going to go to these technical committees we'll pay your way and see if it will help your work in the future. So he was the one man I think that got me started in ASHRAE really and then as time went on, he would sort of mentor me towards the committee assignments of which I've had several. And he started me in the ASHRAE committee assignments and I took it from there. If we gotta go further than that.

S.I.

I just kind of like the progression. It seems to me that your next career step was at-

P.M.

Kansas State.

S.I.

Kansas State and that was an ASHRAE contact if I remember.

P.M.

Yes that was an ASHRAE contact. It was Dr Ralph Nevins who was at the time head of mechanical engineering at Kansas State which is where we are now in making of this interview. And he was, well from Minneapolis originally, excuse me, his wife was from Minneapolis originally and so he applied for summer work from campus and we hired him in research at Honeywell there for three years in a row at the summer time. And there I got to know him very well and he would have been president of ASHRAE if he hadn't died an untimely death of cancer when he was 48. And he was a very, very fine individual and he was the one that asked me to come to Kansas State and I did. So that's my second career so to speak, was doing a little teaching and research work at university.

S.I.

And then I think you met an individual through ASHRAE at Johnson Control.

P.M.

Yes in the committee work that I was doing one of the individuals who really had my respect was Bill Chapman who was Vice President of operations, factory operations at Johnson Controls. And he and I were on several committees together and he asked me to come to work for Johnson. And I did that and I became director of engineering there at Johnson Controls for six years.

S.I.

Sure. Then you knew someone from the Bureau of Standard through ASHRAE.

P.M.

Right then through ASHRAE I knew Reese Achenbach who was director of the chief of the building environment division at the Bureau of Standards and also Clint Phillips who was a past president of ASHRAE. Reese Achenbach was a past vice president of ASHRAE and he was retiring and so they're looking for a replacement and that's how I happened to go there. So really ASHRAE has been heavily involved in my career and my talking to various people and working with various people. And certainly have a lot to give ASHRAE. A lot of credit to give them for my career.

S.I.

I think that maybe the point might be you gave a lot and then you got something back. You weren't looking for anything back. It just happened that way.

P.M.

Right I was sort of belonging to ASHRAE on the basis that it could help my career, it could help the job I was doing at the moment, and it would help it next year. And one of the bonuses that came about from my belonging to ASHRAE was knowing many, many very superior people that are very active an ASHRAE and I consider them great friends now and very great personal bonus from belonging to ASHRAE. It helps you out on your job and you get to know these wonderful people. What more could you ask for except that they go around to nice interesting places like San Francisco and Montreal and New Orleans and so on.

S.I.

Yeah, Pat and I've always enjoyed that.

P.M.

That's a lot of fun too.

S.I.

Tell me a little bit about you, we've got a limited amount of time but tell me a little about some of your technical committees that you worked on that were kind of the highlights. Got to say the highlights because you served on so many of them.

P.M.

Yeah well the technical committees, not so many technical committees these are more, I was in the comfort technical company and the air cleaning technical committee, particulate matter and the ventilation technical committee. All three of those have standards and I was involved in the standards writing for those standards on are quality, comfort, and particulate matter air cleaning and air quality.

S.I.

You were involved in TC 1.4.

P.M.

That's a control which I call it the comfort committee which is my word for it.

S.I.

That's probably what they called it at that time. But I'm very interested and I keep track of what that committee's working on today and what kind of things were they working on, in the 50s when you were on?

P.M.

Well they were trying to get a better understanding I think of the thermal effect on people. And so the idea of how much convection do you have, how much radiation, how much evaporation takes place from people under various conditions was the name of the game and to try to quantify that and to get it down so that the specifications on the thermal comfort would help people then in developing new equipment for providing environments and so on.

S.I.

Sure. Well you've just had a tremendous amount of awards from ASHRAE. You were elected fellow in '75. And Andrew T Boggs Service Award in '91. Tell us about that a little bit.

P.M.

Well in order to get that award you have to be a Distinguished Service member and I was that in what, '72 was it. Just DSA in '72 or something like that. And then by being on these committees for various times and on various chairmanships or vice chairmanships or whatnot, you get accumulated credits for

those. And the Andy Boggs award, he was a ASHRAE vice president, paid employee of ASHRAE for years. And that award is named after him. That award was given one per year to a person who has exemplified a lot of experience through these committee assignments and so on and so that was what that award was in 1972.

S.I.

I see. That was a great, a great benchmark for you.

P.M.

Excuse me that was '91. Sorry.

S.I.

And of course June of '94 you received probably the highlight of your career, the Louise and Bill Holladay Distinguished Service Award.

Yes, Bill Holladay of course a very great ASHRAE personality that has been associated with the society for years and years. And he and his wife developed this award for an outstanding Fellow. So first of all you have to be a Fellow and you have to again have done something exemplary in the committee's opinion that gives you this award. Either original research or original design of systems or buildings or whatever. That was a very, very great award to me, very great honor to me I feel.

P.M.

It was indeed an honor and looking at your bio here it certainly was well earned. How many papers did you write for ASHRAE?

P.M.

Over 80 I think. They aren't all or ASHRAE but most of them were yes.

S.I.

83 I have down here as of June of '84. Have you added anymore?

P.M.

One more.

S.I.

84 papers. Then in '71 you received the award for the best journal paper. You know what that was about?

P.M.

Oh yes that was so long time ago now in 1971.

S.I.

I hadn't even started a level in ASHRAE yet.

P.M.

It had to do with thermal comfort again and the idea of a person being subjected to radiation at different levels from different sides. In other words you could have something really hot on one side and cold on the other and the average would be fine but how much of it would affect your comfort because of this unbalance in the environment. So that was that paper yeah.

S.I.

Okay so that would make individual uncomfortable.

P.M.

Yeah. After a point. You can stand a little bit of it okay but then it gets too bad, by then he objects.

S.I.

You know I can relate to that. I tried to sleep one time like the cowboys next to a fire. It was about, it was in the mid 30's I suppose. It didn't work very well because all my heat was coming on the one side.

P.M.

You kept turning over and over like on a spit so not too practical when we talk about people.

S.I.

And then the next year '72 you received the award for the best R&D paper. Was that same subject or?

P.M.

Similar subject. It had to do in that case with trying to get a formula or a principle if you will to specify comfort. In other words what temperatures, what temperature of the walls, what velocities, what humidities and put that all together and then have a formula if you will that specifies comfort or lack thereof.

S.I.

How many hours did you put in the paper?

P.M.

It's hard to say when you, because these papers were practically all of them were done as part of my work assignments. I was expected to write papers and to innovate once in a while in terms of the technology. I suppose a single paper would take maybe two three months of concentrated work if you put it all together, of course you don't. You have a couple hours here and a week there. May take several years to get as much data as needed to form the paper itself.

S.I.

Sure. Now you were also involved with CLIMA 2000 Congress and ASHRAE IAQ conferences. Tell us a little about those experience.

P.M.

Yes, Clima 2000 was developed by Dr. Fanger in Denmark I believe to try to say well what are the new things. It was quite a while ago, you know maybe 1980 or so and he was talking about the year 2000 and what the climate is going to be like then. That's where the name came from. Well now here it was already.

S.I.

Here we are.

P.M.

So he developed over many, many conferences around the world and one that I was involved in was in Copenhagen, Denmark where I gave one of the papers, many papers at that conference. And I've been keeping up with what's going on in that area all along. The other one was what?

S.I.

It was CLIMA and ASHRAE IAQ.

P.M.

Yes IAQ came along as an interest to ASHRAE and so ASHRAE started a series of conferences aside from their regular annual and semiannual meetings, specialized conference in air quality alone and that started in the early 80s and I was a second chairman of those committees. The second year was my year you might say, where I organized it and was chairman of it. Those meetings we attracted several

hundred people in ASHRAE and without ASHRAE, outside ASHRAE in terms of other technologies involved, psychology, physiology, particulate technology and so on.

S.I.

So that was the beginning of Standard 62?

P.M.

No Standard 62 was long standing.

S.I.

That's true that's right.

P.M.

It started as a non ASHRAE publication in the 1950s I guess and ASHRAE took it over and rewrote the standard in ASHRAE terms in 1972. And I was on the committee that did this first revision and I've been on committees ever since

S.I.

Well you look back on some of your ASHRAE experiences, tell us about an event that was humorous.

P.M.

I think the one that stood out most humorous to me was perpetrated, if I can use that word, by Frank Bridgers who was a presidential member from Bridger's and Paxton in Albuquerque, New Mexico.

S.I.

Oh yeah I know.

P.M.

And he had a twin brother and so at the inauguration where he was installed as president, his twin brother was the one that was installed. And only later did Frank come out from their behind the curtains and they met each other and took over.

S.I.

I've never hear that story.

P.M.

It was really very, very humorous. Doesn't happen too often in ASHRAE I guess.

S.I.

Mr. Bridgers has a lot of stories about he and his twin brother. I believe his twin brother was a coach.

P.M.

College football coach.

S.I.

We've talking a lot about ASHRAE, about your career. What other interests did you have outside of work?

P.M.

Oh outside of work I guess I'm no different from anyone else. I like to go camping and fishing.

S.I.

I saw a canoe hanging in your garage.

P.M.

Right canoeing in the boundary canoe area waters of Minnesota and then the Quetico of Canada. Going on canoe trips where you carry everything with you, your tent and sleeping bag and all that.

S.I.

You're big into that?

P.M.

Yeah so used to do that for maybe a week or two every summer for a while there. And it's very enjoyable and the fishing is enjoyable.

S.I.

I didn't have any ASHRAE friends join you on any o those trips?

P.M.

Yes we had an ASHRAE, well not an ASHRAE but a Honeywell fishing party where half a dozen of us or eight or ten would go up every year for two or three days in Canada to do some fishing.

S.I.

You know I think that's still a tradition up there.

P.M.

It still is. You're right they still doing that

S.I.

I know some of the guys that do that.

P.M.

They don't invite me anymore.

S.I.

Well you mentioned one of ASHRAE's strengths was it was open to anyone who wanted to come in and make a contribution to meetings. Tell us what else, all these years with ASHRAE, what's some of the other strengths you would have to say that made ASHRAE as strong as it is today and what will keep it strong as we move on to the 21st century?

P.M.

Well that's a very difficult question ask and but ASHRAE is its people and the people that are involved in ASHRAE are typically pretty bright, they work hard, and they're dedicated. And you put that bunch together and something good is likely to happen. ASHRAE of course does a million dollars worth of research each year that advances the state of the art in various ways. Equipment wise on things like thermal comfort and air quality and so on, so that is a strength of ASHRAE that I see it is that they're going to be on top of things.

S.I.

Keep attracting good people.

P.M.

Keep attracting good people and they'll do good things.

S.I.

Well before we wrap up are there any other points or people or issues you'd like to bring up or reminisce about perhaps?

P.M.

Well that's a little hard. I think that over the years ASHRAE has gone from a heating, when I went to Honeywell it was more or less heating and just not too long afterwards the air conditioning boomed in the residential market as well as a commercial market. And then the advent of the technology of solid state giving us better controls, cheaper controls, longer controls, more flexible. It is a big thing for the Society and air quality of course with the problems we have with that and of course the CFC business

with the ozone layer. All of those things are important and have occurred since I started going to ASHRAE I guess.

S.I.

Yeah there wasn't any concern about the ozone when you started. Global warming.

P.M.

There was concern about ozone with devices that made it and put it in your house.

S.I.

The electronic air cleaner was an issue with too much ozone.

P.M.

The electronic air cleaner made some ozone but we try to minimize it.

S.I.

Sure. Well we sure appreciate you taking up the time and coming over here to Kansas State today and sharing all this with us. And so it's been really great reviewing your career and all your accomplishments.

P.M.

Certainly my pleasure to be here and talk to you about it. Thank you very much.

S.I.

Okay thank you.