ASHRAE Leadership Recall (formerly Leadership Recalled)
Transcription

Interview of: Fredrick Rohles

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Interviewed by: Steve Ivesdal

Note: The last part of the interview is missing.

Steve Ivesdal
Hi. I'm Steve Ivesdal, chapter president of the Kansas City chapter. Today I'm honored to be a part of a leadership recall to review a career and the great contributions that one of our members have made to the society and to the industry as a whole. And that individual is Dr. Fred Rohles. And we're here at Kansas State in a classroom setting. And Fred, it's really great to be a part of this with you.

Fredrick Rohles
Glad you're here at Kansas State, Steve.

S.I.
Sure. We enjoyed the trip down, had good weather for a change. Being January you'll never know what you'll get in Kansas. Well, Fred will kind of bring this up into four parts. We like to go back kind of to your roots. Where you are born and raised, where you went to high school and into your college, and move into your career and of course into ASHRAE and talk about some of the words you want over the years. So I'm going to kind of turn it over to you in just ask you to give us a little sketch of your early life, where you started and where you got your school background and so forth.

F.R.
Will I was born in Chicago. Grew up in Evanston, Illinois which is a suburb North.

S.I.
Now Evanston is home the of Rotary?

F.R.
Yes it is.

S.I.
I'm a Rotarian too.

F.R.
Yes it is. That is their national headquarters. And by their many times. And graduated from Evanston high school. Was quite active in sports there. Then went to Roosevelt University, which is essentially a city College in Chicago. And there was an event that came along called World War II.

S.I.
Messed things up right?

F.R.
That's right. And so I enlisted in April of'42. I should back off and tell you that my major there was commerce and personal administration. And they were opening up a psychological research unit. And

these were designed to test the candidates for pilot, bombadier and navigator training and there were three in the country, one in Nashville, Santa Ana, and San Antonio. So I am listed on a Monday and Friday I found myself in San Antonio. I was there as an enlisted man for about five months and then went OCS in Miami Beach and was commissioned second Lieutenant.

S.I.

OCS, you put yourself through that back then?

F.R.

That's right. 90 day wonder.

S.I.

90 day wonder is that what it was back then in 90 days?

F.R.

90 days that's right.

S.I.

Evanston back in those days was that considered part of Chicago like it is today? Weigh on the country huh?

F.R.

Oh, never. That's the headquarters of the WCTU. And right at the border there's a liquor stores on one side of the street and churches on the other.

S.I.

I didn't realize that.

F.R.

Yeah that's right. Now it's not that way, now I think that bars in Evanston.

S.I.

Well anyway we got off track, but now you went to the army?

F.R.

Air Force. Went in the Air Force and after I was commissioned came back to the same unit that I was in and here again still doing testing and classification of people going into air crew duties. I get out of the service in 1945, I guess it was 46. I was out six weeks and my boss called me back, he said I want you to come on back for me and work as a civilian. So I did and then we had three teams that were touring the country during the same type of testing. My boss in Washington at the time said, Fred if you come back on active duty, he said I'll get you graduate school. And this looked like a pretty good deal so I did it. So I got my Masters and PhD courtesy of the United States Air Force. But anyway the, I went to the University of Texas got my masters degree and then came back and was stationed at School of Aerospace Medicine in San Antonio. I was there about a year and then got one of the best duties I think I've had for my entire professional career and that was at the Arctic Aero-Medical Research Laboratory in Fairbanks, Alaska. There we were working primarily with firefighters and if you can ever think of the extreme environment as far as work is concerned, these poor devils had to have had that. I mean sloshing around in water at 50 below zero in clothing. And fortunately had not two major fires and I've never seen such miserable conditions for those poor devils working around there.

S.I.

I've often thought of that. That had to be the worst thing to happen to you. Fighting in a below zero weather.

F.R.

Terrible. Think of dis-coupling hoses and then the spray coming off. And I saw whole barracks filled with clothes that were solid ice. And the main job was taking, replenishing the coals so people could keep on going. The steam plant burned and it burned for about 30 hours and things like shoes, any way there was an equipment problem as I say and talk about getting involved in the thermal environment I think that was my first exposure. Then I got my doctorate at the University of Texas. I went back to the School of Aerospace Medicine. Was there for about a year and then transferred to the Human Engineering Laboratory at Wright Patterson Air Force Base in Dayton, Ohio. There I was head of what was called the unusual environments section and unusual environments at that time was space environments.

S.I.

Space environments. Certainly unusual.

F.R.

And I was on preaching mission saying that was when they were putting animals into space.

S.I.

See that, monkeys and dogs…

F.R.

Well dogs. The Russians put the dogs up. And right after that happened my boss in Washington called me and e said I'm going to put you on a joint services via satellite coordination committee. And this consisted of two naval personnel, two from the Army, four from the Air Force. And we gallivanted all over the country preaching this. And my main influence, incidentally I am not an engineer. I am an experimental psychologist and the question always arises, what's a nice clean cut psychologist cavorting around with a bunch of engineers for and the response that I did universally is that for whom do you heat and air-condition? People. And so this is what it-

S.I.

So you spent your career trying to figure out the physiological effects of what the engineers are trying to make people be satisfied with.

F.R.

That's right. And primarily as a member of a multidisciplinary team, I'm getting a little bit of ahead of myself, but I think about the situation that we had here at Kansas State. Ralph Nevins was responsible for getting this Institute in here, and I'll get ahead of that, anyway but we had a psychologist, myself, a physiologist, Emerson Besch, who headed up standards 55. We had engineers, statisticians, and physicians and engineers worked as a team. And this was the strength of the organization that we had here. Well anyway, as I said I was preaching about you have to do something other than measuring the physiology of these animals. You have to measure their performance. In other words can perform a task in space that you learned on the ground. And so my boss in Washington called me in and he said, I want you to go and head up a unit at Holloman Air Force Base in Alamogordo, New Mexico and get the chimpanzees ready to go on Project Mercury.

S.I.

That must have been pretty exciting.

F.R.

It was. It was an exciting time, it really was.

S.I.

So you were directly involved with that space adventure.

F.R.

Well that was Project Mercury. And the first flight was with a chimpanzee named HAM and that was the acronym for Holloman Aero-Medical Research Laboratory. And then following that was Shepard with a ballistic shot and then after that we put up another chimpanzee, Enos and he was supposed to be on a three orbit shot, only went on two. And after that was John Glenn. And report to do a whole bunch of other programs but the whole animal thing phased out.

S.I.

So did you actually get to work with John Glenn then? Were you a part of it at that time?

F.R.

When I was at school, when I was at the Aero-Medical Research Laboratory in Dayton, I was involved in the selection. Not directly, but I mean they would send us all the results on their physiology and performance test and that sort of stuff and we would have to go through there. The only dealings I've had with John Glenn was a limerick that I'd written about him that I sent him about six weeks ago. And I mentioned the fact that we had, that the chimpanzee's names were Ham and Enos and the limerick goes like this, can I tell you this Steve?

S.I.

Sure I'd like that.

F.R.

I've said it again and again, if you don't think I'm right ask Johnny Glenn, that his wisest of tips, came from chimpanzees lips, from Enos and Ham, not from man. And I got a letter back from him and he had written a limerick that had my name involved in it. So it was kind of, that's the extent of my dealings with John Glenn.

S.I.

That's timely now, that John Glenn just returned back from space. I guess that was November of '98 wasn't it?

F.R.

It was this fall, yes. That's right. So anyway I got out of the service in October of 1963, but prior to that my old professor and mentor at the University of Texas had left there and became the first regents professor here a K State. And it was Harry Helson. And so he called me and said, you know, they're opening up this institute for environmental research and he said I think you ought to come, he said be a natural for the kind of stuff that you're doing in the service, that you've been in the service. I said, not Kansas, I said I was stationed there one time and I said, not that at all. So it kind of died and oh, about six months later he called me again. He said, Fred I think you should at least give it the courtesy of coming to Manhattan and looking. And I said, Harry look there's got to be water where I retire. He said, we have a brand new lake and Lyndon Johnson dedicated to do Tuttle Creek Reservoir here. So I came up and that was on Memorial Day weekend in 1963. I bought a house. It was a natural, doing the exact same stuff I'd been doing in the service. And came to work here the first of November, 1963. Now let me back off a bit. This is part of the paper I presented in Chicago five years ago having to do with history of the institute. ASHRAE had a laboratory starting with the Bureau of Mines in Pittsburg and then they moved that to Cleveland and then with the increased cost of doing it, renting that laboratory and this

was an ASHRAE run laboratory. Well they simply put it up for grabs that any organization wanted to continue with it. And at the time, Ralph Nevins was very active in ASHRAE and it looked like a pretty good piece to latch on to. So he got funds from the state of Kansas and matching funds from the federal government with this package of promises, essentially, went to ASHRAE and said, should it come to Manhattan this is what we can offer you which is essentially a building in which to house that facility. And so that was approved by ASHRAE and became operational about the fourth, fifth of November. As I said I came on board the first of November of '63 and about four or five days later we had our formal dedication.

S.I.

So that was kind of your entrance into what we consider HVAC, was when you came to K State?

F.R.

That's right.

S.I.

So what were some of the early projects you worked on when you came here?

F.R.

Well accompanying the environmental laboratory was the requirement to validate the then current standards for thermal comfort. And to that end we tested some 800 men and 800 women at different temperatures and humidities and essentially formed a baseline for any subsequent work that, along that same line.

S.I.

So your work was more, engineers think they know what people are comfortable at and your job was to say this is what they are really comfortable at, with the temperatures and the air drafts and all those kinds of things. I don't think, there couldn't have been a lot of people in ASHRAE back then with that type of background that you had. You must have been pretty unique.

F.R.

There still isn't. There still isn't. And I've had students that I've liked to go ahead and encourage in that direction because here again I think that the multi disciplinary approach to problems like this are very, very meaningful and what it does is gives you an entirely new dimension when you get a particular finding.

S.I.

I know what always brings to mind when you're doing HVAC is the discharged air may be over 100 degrees, it might be 120 degrees, but if it's blowing fast on you it's drafty and it feels terrible. Just looking at it in a technical point of view you'd think that would probably feel ok. So that was the kind of thing you were dealing with.

F.R.

Well what I have labeled something similar to that, supermarket syndrome. In Kansas in the summer time when you park your car, and Steve I'm not telling you anything you don't know, when you park your car in a parking lot and you get in it, why it'll be about 125-140 degrees. Alright, you get out of that air conditioned car and you go into supermarkets that's at 72 or 73, something like that, and then you get back in that car. And you think you're going to come unglued. This is the thing. But the human organism is very, very adaptable and I guess it's alright.

S.I.

So your first exposure to ASHRAE was when? When did you join ASHRAE?

F.R.

I presented the first paper at a Denver meeting in 1971. Now I came here in '63 and presented the first paper in '71. And that was due primarily to a fellow named Pharo Gagge. Gagge just recently got into the hall of fame, ASHRAE Hall of Fame. And I worked for Gagge when I was in the Air Force. He was a colonel in the Air Force, at the Pierce Laboratories in New Haven, Connecticut and I worked for him. So when I came aboard here I had no idea I was going to be involved with him at all. So he opened this, he had this seminar at the ASHRAE meeting in Denver where I presented a paper. And he and Jim Hardy, who was also at Pierce Laboratories, said Fred this is an organization you ought to get involved in, that you ought to join. I said what would a fellow with my background do in here. He said we need people like that. So that was essentially it.

S.I.

Sure. Well that's great. Well looking at your ASHRAE background, in 1985 you received the Outstanding Technical Paper Award. Tell me a little about the topic. Do you remember or was that long ago?

F.R.

Yes, we were looking at, oh let me think here Steve, we worked with Honeywell and they had a formula for the thermal situation in different building envelopes. And so we were looking at what happens when you bring the people in and you had a slow rise in temperature or a slow decline in temperature and that was it. And you could tie it in with the energy thing. But it was, here again we worked with Dick Ruck, who was with Honeywell, a graduate student of mine, a graduate student from China who was here, the four of us.

S.I.

And then in '64 you receive the Raymond Longacre Award for aerospace medicine.

F.R.

That was the American Aerospace Medical Association. And that was primarily because of the input that I had with the animals on Project Mercury program. And also involved, oh we took and rode people on centrifuges to look at various G levels on them, and isolation problems, heat stress problems, and the like. So this was all behavioral side of it, not necessarily the physiology.

S.I.

Sure. As you've progressed and worked with ASHRAE, what have you recognized that probably brought on growth in the industry through ASHRAE's efforts?

F.R.

Well I think I eluded to the fact that ASHRAE was willing to accept people from other disciplines. And I think that, I like to think that because I'm from another discipline is one of the major contributing aspects to ASHRAE's strength.

S.I.

Yeah I thought the same thing. You're saying that ASHRAE is strong because they're willing to bring in all kinds of disciplines, not just engineering.

F.R.

And in, was it Toronto, or the meeting before, regardless they had a meeting of getting other professional organizations involved with ASHRAE. The Aerospace Medical Association is interested in air quality in aircraft.

S.I.

Yes, that's a big deal now.

F.R.

That's right and so here again this is an organization, I'm associate fellow there and an organization get involved. And I'm a fellow in the human factors society and that's another thing they could get involved in.

S.I.

I chuckle when I hear that because I spent a lot of time in planes and I've sat there and I said to myself-

Remainder of interview missing