

ASHRAE Leadership Recall (formerly Leadership Recalled)
Transcription

Interview of: Donald Rich

Date of Interview: January 1994

Interviewed by: Charlie Henck

Charlie Henck

My name is Charlie Henck and I'm a member of the Historical Committee. As part of the Historical Committee's effort to document the history of ASHRAE in preparation for the celebration of our centennial, we are interviewing presidential members of Society. Today we're going to be interviewing Don Rich who was president of ASHRAE in 1991 and 1992. Welcome Don.

Don Rich

Glad to be here.

C.H.

Don, if you would start off and give a little background about yourself.

D.R.

Yeah sure. Well I'm a native of Rhode Island. Was born in Rhode Island, Providence, and earlier years lived in Cranston, Rhode Island, went to Cranston High School and later went to Brown University which is in Providence. I took a course in engineering and graduated with an engineering degree from Brown in 1951. Decided following graduation that I really wanted to go into the technology a little bit deeper and so I decided to go to graduate school and I did my graduate studies at Harvard which was of course up in Cambridge, and graduated from Harvard with a master's degree in '52.

C.H.

Good. And then after graduating master's degree did you go out and start working right away?

D.R.

Yes, and as a matter of fact I began to do some interviewing when I was at Harvard and a fellow from Carrier came to interview me at the university and I decided that gosh, I'd really, sounded like a kind of area, air conditioning, refrigeration interested me and I'd like to go into it. But I'd like to actually say why that appealed to me because when I was at Brown, I worked during the summer for a company and actually the same company my father worked for which was called the American Moistening Company. The American Moistening Company was involved in textile humidification. You know in textile mills they have to maintain fairly high humidities in order to keep the threads from breaking in the textile processes. And when I worked there as a draftsman and I noticed that they were using this chart called a psychrometric chart. And I got kind of interested in it and my father would go out and he was an engineer and he'd use a sling psychrometer, you know, and then look up the relative humidity in the psychrometric chart and I notice that all the men at the American Moistening Company were using psychrometric charts. And I got very interested in that whole field of temperature and humidity control. And of course they were using a Carrier psychrometric chart. So I said gee whiz, any company that can

develop the psychometric chart must be a pretty good company to go work for so I was very interested and accepted Carrier's offer to go to work for them.

C.H.

And you've been working with them ever since.

D.R.

And I've been working for him ever since and I have no regrets. It's certainly been a fine company to work for and of course a great pioneer in the air conditioning field.

C.H.

What were some of your projects that he worked on while you were at Carrier?

D.R.

Well let me start by saying that when I first started at Carrier, which was in 1952, Willis Carrier had only been dead for about a year but you might as well have assumed that he was still alive because everyone talked about Willis Carrier and everybody talked about, they called him the chief. And it was almost like he was still alive because they'd say well the chief would tell us this is how we would calculate this or the chief would tell us this is how you designed that. So it was really a very exciting period to begin work with a company that was really just on the verge of revolutionizing the industry in a really big way. But to answer your question, the first project that I got involved with which probably had a lot to do with shaping my career was a project to develop a rotary regenerator. And Carrier at that time had an interest in the possibilities of gas turbine propulsion. Carrier had purchased a plant from the General Electric Company in Syracuse where they during the war they made jet engines and so they had a facility which, where we were making centrifugal refrigeration machines and absorption refrigeration machines in those days but it also had a capability for making gas turbine engines. And there were many at Carrier who thought there might be a future for gas turbine engines. So we had a contract with the Navy to develop a gas turbine not for Carrier to develop but Carrier only had the heat exchanger part of the engine. So we had a contract to develop a rotary heat exchanger for this gas turbine propulsion system for this navy boat and it was a high speed boat. And I got very fascinated with that technology. It turned out that the technology of heat transfer to a rotating type of heat exchanger was not a simple technical problem. And it sure wasn't a simple design problem either. So that was my first project. I have good memories of that project.

C.H.

That sounds nice. Where did you lead into after that?

D.R.

Well the contract was completed but decision was made that we really didn't want to go further with that technology and didn't really look as if there was enough business opportunity there for Carrier. And so the next exciting project that came right on the heels of that and that I was thrown right into as a young engineer was air conditioning for jet aircraft. The Boeing 707 was just beginning on the drawing boards and the Douglas DC 8 was just on the drawing boards. And those were the first commercial jet aircraft and Carrier was involved at that time in bidding on two proposals, one for the Boeing 707 and one for the Douglas DC 8. And I was on a team as a just a rookie green engineer. I was on a team to help write proposals for those air conditioning systems and I'll tell you that was very, very exciting. It turned out that Carrier did, was selected as the prime contractor on the DC 8 and we developed a vapor compression air conditioning system of Freon 12, a refrigerant 12 system for the DC 8 aircraft that was

really revolutionary even by today's standards. The system employed, first of all the system had, it was about 13 tons of refrigerated capacity. It employed a centrifugal compressor that was about that big. (ed. Note about 4 inches or 10 cm)

C.H.

Wow that's relatively small.

D.R.

Thirteen tons. The impeller of the centrifugal was that big. (ed. Note about 2 inches or 5 cm) And it had a rotational speed of 90,000 RPM.

C.H.

Wow.

D.R.

And I don't think, I'm not aware that anybody has ever built a machine like that since. So being involved in that development was very exciting and Carrier built many of those systems for DC 8s. I don't, I'm not sure right now. I think most all of the jet aircraft today use an air cycle system rather than a vapor cycle, Rankine cycle system. That was certainly a very exciting experience as a young engineer going to work in the industry.

C.H.

It does sound like it was very exciting and a challenging project for a young engineer.

D.R.

It really was.

C.H.

Then did you continue on to another project after that for Carrier?

D.R.

Yes. Give you again some perspective on how exciting the industry was when I my first want to work for Carrier, there was no such thing as a commercial lithium bromide water absorption machine. That was still in development. The first split system residential air conditioner was in the development laboratories. So all of these kind of systems which we accept today as being the bread and butter of the industry were really just under development back in those days which made it very exciting. The early experience with the rotary regenerator first and then with developing these very advanced heat exchangers had to be very lightweight and compact for the DC 8 jet aircraft really got me hooked on heat transfer as a technology that I really was interested and want to put my career into. And so the next things that happened was I had an opportunity, in fact to head up a team that was beginning to develop Carrier's first truly fundamental research program in the area of heat transfer. We were a lot of young people. We formed in 1958. They built a new building which in fact is still there and I still have my office in. And that was the Carrier's new research laboratories and in those laboratories we had the first research program and what I consider still to be the finest industrial research program in the industry. And I had the opportunity to develop the fundamental program in heat transfer.

C.H.

Oh fantastic. That's nice. I guess as the years when you look into different tube configurations, various applications?

D.R.

Yes and they still are. And they're still revolutionizing that technology. Of course we didn't have the computers at that time. Remember we did computations with slide rules. I was fascinated when the first, we did have a digital computer in fact back in the 50s it was an IBM and we had to write it in machine language which you could hardly imagine. It was such a struggle to get much done. So you only did things that would have had to be very, very repetitive and require a lot of calculations to do it on a computer. We did a lot of experimental work. A lot of cut and try experimentation. Trying to find better fin surfaces and better thin tube configurations that would improve the performance and lower the cost of heat exchangers. And when the digital computers finally really came into their own, then it was just a wonderful thing for those of us who worked in the heat transfer because we were able to develop computer codes for taking the data that we took in the laboratory, reducing the data, analyzing it, and then later building that information into the computer programs that could simulate the performance of heat exchangers. And then ultimately computer programs that could simulate the performance of entire air conditioning systems. And some of my major contributions really as I look back were in the in this area of computer simulation.

C.H.

Well how did you get involved in ASHRAE from all of this?

D.R.

You know I think like many others and you've heard it I'm sure from other presidents, somebody has to ask you. And I was very fortunate that I had people at Carrier who were active in ASHRAE. Of course Willis Carrier was one of the presidents of Society. The man that hired me to come to work for Carrier was Bud Palmatier. He was a F. Paul Anderson award winner with the Society and his boss and the vice president of engineering, or actually was director of research and later vice president of engineering was Walter Grant. And he was a president of ASHRAE and Walter came and interviewed me at Harvard and Bud came and interviewed me at Harvard. And the first thing they told me was, hey you know you come to work for Carrier you got to go join either ASRE or ASHVE. One or the other. And Bud was an ASRE member so and he was a great guy and so sure enough I just went right without thinking twice about it, went off to my first ASRE meeting in Syracuse.

C.H.

Interesting. So then you were a member then when they merged.

D.R.

Yes. Yeah. As matter of fact Walter Grant I think was one of the presidents during that transition, during that merger of ASHVE and ASRE.

C.H.

I believe during that time and they were merging, the officers served a six month term.

D.R.

Yes that's right. And Walter served for six months. Another Carrier a man that, he just died this year was Carl Ashley and he was a president of ASRE. I think the year or couple of years before the merger. And he may have been the president of ASRE when I first got involved.

C.H.

Interesting.

D.R.

So there was certainly an awful lot of support for participation in the Society by these, what I consider giants in the, you know, field at the time.

C.H.

That's really where it takes to get young members involved, to have somebody invite them as you said.

D.R.

There's no question about it.

C.H.

Now what committees did you start on in ASHRAE?

D.R.

Well. Another presidential member who happened to be and my boss for a relatively short period of time was Stan Gilman. And Stan was a president of ASHRAE and very much involved and Stan said to me, you know, I've written a report. And Stan said you know, you ought to write a paper on that. That's a good piece of work so why don't you write an ASHRAE paper. So I did. And the paper was published which pleased me very much and I went to an ASHRAE meeting and I was able to present it. And then a little later Stan said you know I need a chairman for heat transfer committee that we are forming and would you take the job. And I said sure and of course then I was off and running in terms of committee involvement with the Society. So that's how it really got started and that was back in the early 60's.

C.H.

I'm sure you circled a number of technical committees.

D.R.

Well. Yes I was but my love was the Heat Transfer Committee and I served on that more years than they would allow today. And became chairman and then later got involved in other technical committees. I got involved in the Air to Refrigerant Heat Exchanger Committee and Nomenclature Committee, technical committee, Computer Applications Technical Committee. So I was on a number of them. But the heat transfer one was the one that I spent most of the time and energy on. And I guess as I look back the thing that was so interesting in those days was that the Cleveland laboratory had been closed down in the early 60's and the Society was moving in the direction of sponsoring research at universities. And so one of the challenges that I had as chairman of this committee was to begin to build up a research program for the Society at universities.

C.H.

Interesting.

D.R.

And I've told people this before but there are news that I was actually involved with are RP1 and RP3. And of course I don't know, we're up to RP 200 and something now I guess.

C.H.

So you were involved in the first research proposal.

D.R.

Yes. The ones that weren't done at the Cleveland laboratory.

C.H.

Can you tell me anything about the Cleveland laboratory?

D.R.

I never visited the Cleveland lab but I know I went by it. I was shown this was where the lab was in Cleveland. It was a laboratory of course that did work on physiology in air flow and ducts and those sorts of topics of interest to ASHVE primarily. And it was a difficult decision to make. I think that decision was made somewhere around 1958 or 9. It was shortly after the merger. I think that they made the decision that we really couldn't afford to continue to keep that laboratory going and that we would move toward sponsoring research at universities. So RP1 was, I remember that one as it was a project of condensing heat transfer being done at Kansas State University. And RP3 was a project on heat transfer to coils. It was being done at Case Institute.

C.H.

Interesting. You still remember all that.

D.R.

Oh yeah first one. Yeah, very clear.

C.H.

And after your TC committees, where did your interest go in ASHRAE? Did you start off at some other office along the way before you got into the chairs?

D.R.

Oh yes. Oh yes indeed. As a matter fact the next step was involved in the Handbook Committee. And of course the Handbook is extremely important to Society and I always felt that I was very fortunate to have the opportunity to work on that committee because it's such an important thing to our members. I worked on the Fundamentals volume and was chairman of the Fundamentals subcommittee for the Handbook. And I was slated to move up and become chairman of the Handbook Committee when I was given an opportunity to become chairman or not become chairman but to become a member of the Research and Technical Committee. I also served on the Program Committee as well. That was very challenging. I guess I've always said this and I truly mean it that back in those days the Research and Technical Committee was really the premier standing committee in the Society. And when I had an opportunity to become a member of the Research and Technical Committee of ASHRAE I really felt as if I had arrived. It was all I ever really aspired to in the Society was to be a member of the Research and Technical Committee.

C.H.

I've also heard the same thing. That it was truly the committee to be on.

D.R.

Oh, yes.

C.H.

Direct the direction of the Society.

D.R.

Yes. And you know I've since of course been on committees to nominate members of the Research and Technical Committee, you know, to be a member of the Research and Technical Committee you have to be elected by the Board. And it is just amazing the number of qualified, really outstanding candidates we have for, to fill the very few positions that we have available on the Research and Technical Committee. ASHRAE's really blessed to have such a pool of talent willing to serve the Society.

C.H.

Then from the R&T committee where did you go?

D.R.

After I left the R&T committee there was a very interesting thing that happened in the Society. It was decided to form what's called a Research Advisory Council. And the interesting thing about, and Bruno Morabito, who was also a Carrier man was president of the Society and he felt that the Society was ready to adopt a council structure. I was not really aware at the time that I got appointed to be a member of this Research Advisory Council, that it was in fact an experiment in the council system. But that's really what it was. And so the Research Advisory Council that was called was put in a position to sort of look into the entire area of research and make some recommendations in terms of long term direction. And as a result of that we developed, which and I won't say it was the first Society's research plan. In fact there was an earlier research plan for the Society. But it was the first research plan that was put together, you know, in a very structured way and as a result of a lot of effort and discussion with the various technical committees and with R&T members and so forth and we put together the framework of the first research plan. And we in fact instituted formalized research planning, institutionalized research planning in the Society. So that was the next important opportunity that I had in the Society.

C.H.

And from there?

D.R.

Let's see. Before being, I did serve on the Board as a Director at Large. That was a very exciting period. I had a chance to participate with my love, the Research and Technical Committee. And of course as the Director at Large I served on the Technology Council which in a sense was really the successor to this Research Administrative Council. And the change being that now it was part of the structure of the Society and was chaired by an officer. And at that time the officer was Clint Philips. Clint Philips was the first chairman of the Technology Council. And I served on that. So that was a very stimulating period. Just before I was so elected as an officer of the Society, I had an opportunity to chair a committee called the Innovative Research Ideas Committee and I only was able to serve one year and then I was asked to become an officer. But the Innovative Research Ideas Committee began to take a look at ideas that might be much more far reaching and more innovative and much more high risk kind of ideas for the Society research program. There was a feeling that the Society research program may be becoming too conservative and we needed to put some riskier stuff and more innovative stuff into the program. And that's something that I happen to still believe in and when I became president of Society I told the Society that they ought to devote more of their funding to that type of work.

C.H.

So after you were vice president and I assume you were treasurer, president elect and through president.

D.R.

Yes. I served one year as vice president. And one year as treasurer. One year as president elect. One year as president.

C.H.

What was happening in the world, let's say leading up to your term as president?

D.R.

Well. There were a couple of things that were really interesting. Talk about change in the world. That was certainly a period. I recall when I was a vice president of the Society and we had an Executive Committee meeting, Lou Flagg was president at the time. We had an Executive Committee meeting in Phoenix. And I remember we were watching the happenings in Tiananmen Square in China, in Beijing on television. And this of course was a momentous time in history. Then when I was president elect I remember going to the New York meeting and the Iraqi war had just started. And I remember we were, we sat in the presidential suite with the television on 24 hours a day and watching the rockets on television, as I'm sure all off the rest of us did during that period. It was a actually a very frightening period. Many of us when we went to New York were concerned that there might be terrorist threats and there was some concern as to whether the meeting was going to run into any kind of problems because of that.

C.H.

So maybe some thought of, you know, canceling the meeting possibly?

D.R.

I don't know to what extent that was seriously considered. But there was a lot of concern that there wouldn't be the attendance at the meeting because many people were concerned about flying into New York at that time.

C.H.

I could understand that.

D.R.

And in fact I heard that the attendance at the show was down some, at the exposition was down some that year. But we never knew if that was New York that people didn't want to go to or the war situation. It was never quite clear.

C.H.

So your year as president, what was your theme for that year?

D.R.

My theme as president was "Quality, Our Ongoing Challenge". I picked that theme because I thought that manufacturers had become aware several years earlier that to survive in today's global economy that they'd better pay a lot of attention to quality of the products. I had a feeling that this quality initiative which was real and was gaining momentum within the country and within the world needed a little more visibility to the ASHRAE membership. Those of us who were in manufacturing were becoming very aware of it, but I think some and some of the other aspects of the, you know, the Society's activities weren't quite as acutely aware of it as those of us who were in manufacturing. And the movement took total quality management was beginning to gain momentum. The term total quality management was not really well known at the time that I was president elect and was formulating my theme. The Malcolm Baldrige Award had just been created and companies were beginning to try to evaluate themselves according to criteria of the Malcolm Baldrige Award. So I thought that it was a very timely theme for the Society.

C.H.

It sounds like it was and how did you tie your theme into the Presidential Award of Excellence?

D.R.

Well one of the important criteria of quality is to have good feedback from your customers. And so it seemed to me that the members of the Society are in a way the customers of the leadership of Society. And so I felt that it was very important to number one, emphasize chapter programs because I feel like chapter programs are probably the main reason why the average member participates in Society, is to go to the chapter meetings. And that if we had quality programs that the people would continue to come and look forward to coming to chapter meetings. And so I emphasize the chapter program in my Presidential Award of Excellence. And secondly, in order to gauge whether or not you are a continuous improvement is another principle in the in the total quality management system and continuous improvement has to be based on feedback from the customer. And if the customer is the member, and I felt that it was important that we get constant feedback from the member as to how well we're doing. And so I instituted a program part of my PAOE was to give points to chapters that got that feedback on the quality of the programs that were being conducted at chapter meetings.

C.H.

Good. Very good. What else did you do during that year as president? What other initiatives did you take?

D.R.

The presidency is a busy year.

C.H.

Yes I'm sure.

D.R.

And a lot of the things you do you have your predecessors to thank for and they got them started and you were able to finish them. Damon Gowan preceded me and Damon took a great deal of interest in education for which I give him a tremendous amount of credit. He put together an initiative at the executive committee level to take a look at what we ought to do to try to improve our educational program. And I was very fortunate to have succeeded Damon in being able to carry that initiative out. What we did is we had a restructuring of the Society. We hired a Director of Education and we restructured the Society so that the Society could focus on education and not dilute our educational initiatives with other types of things which though important were not directly related. So we had a reorganization of the staff and we also had a reorganization of the Society's committee structure in order to allow us to focus on education. That was one very important thing that we accomplished. The other was the development of our first long range research plan. We had had strategic plans and they are very important documents. They provide guidance to the Society to give all of us in both leadership and in the membership the feeling of direction that we're going. But we didn't have a long range plan. And so during my year of presidency with the work of an awful lot of Society people and people of great skill and wisdom, put together our first long range research plan and then we built our strategic plan from that long range research plan. And we put the whole thing together in one year and it was just an amazing accomplishment. We think maybe we tried to do it a little too fast and we were talking about that today. That maybe we'll try to do it a little more slower pace. But I consider that to be an extremely important accomplishment to the Society.

C.H.

Really sounds like you given the direction for Society to move into. You know you say you have to continually refine it as you go along. It's not a static plan.

D.R.

That's exactly right. Yes, yes. Another thing that I did is I really became concerned, I think it was Dave Butler was president and he had a session on diversity. We heard a demographer talk about what the future held in terms of the diversity of the membership the Society. And I was very impressed with that because the demographer said well, you know, I don't have any crystal ball. All I'm doing is just telling you exactly what's going to happen. I know it's going to happen based upon the statistics that we have to deal with now in terms of where we are today. And what we're going to see is a much more diverse Society, going to see a lot more women that are going to be in the workforce and if you expect to grow as a Society and maintain your position of leadership, you're going to have to make yourself more attractive to women. And so I formed an ad hoc committee on women in ASHRAE and that committee really did some great work to stimulate the interests of women in ASHRAE and also to point out to the leadership areas that we need to give attention to. That ad hoc committee was reappointed by Dick Charles and this year Neil Patterson reappointed, actually he discontinued the Women in ASHRAE Committee and he formed a diversity ad hoc committee and made me as chairman of it. As a matter of fact in the short while I'm going to share my first meeting of that new ad hoc committee.

C.H.

Now it sounds like that since then you were president in '91-92 and now you're still involved in another committee. What else were you working on? I mean you don't ever get out of ASHRAE I don't think.

D.R.

You sure don't.

C.H.

What else are you involved with an ASHRAE right now?

D.R.

Well, one of the standard progressions after you're president of the Society, is that you become a vice chairman of the Nominating Committee. And then also a member of the Long Range Planning Committee. So I served my first year after leaving office in those positions. This year I chaired the Nominating Committee and I'm vice chairman of the Long Range Planning Committee. And I will be chairman of the Long Range Planning Committee next year. Also while I mention this diversity committee, I was on a couple of other kind of special assignments. One that was really very, very exciting. Dick Charles when he was president felt it was very important and I certainly agreed with him, to establish much closer relationships with some of our, with all of our chapters in fact of overseas in the Far East. And so Dick and I went as a team and conducted workshops for the members of the India chapter, Singapore chapter, Malaysia chapter, Hong Kong, Taiwan and Hong Kong mentioned. So we covered all of those chapters in a whirlwind tour. We put on workshops and I ended up in Taiwan. I was attending a conference there and gave a paper. That helped to pay for the travel expense. So that was a very, very exciting activity following my year as president and very, very successful one I might add.

C.H.

It sounds like you're conducting almost like chapter regional conferences at each individual chapter.

D.R.

Yes, that's right. And we had wonderful turn out. Oh we had great turnouts for these. They were great students.

C.H.

Any other information you'd like to relate to us on your year as president?

D.R.

Yeah, there is one. There is one thing I'd like to say another part of the concept of quality is you have to give recognition for achievement. I think the Society does a wonderful job in recognizing the achievements and contributions of its members. In fact I think companies could learn a lot from the way in which volunteer organizations handle rewards and awards. Companies have a tendency to say, well we pay their paychecks so we don't have to give them any other recognition. Volunteer organizations, they don't have a paycheck that they can hand out so all they can provide is recognition and so they've learned how to do it very well. I have, was able to institute at Carrier an awards program in the engineering organization which is very similar to the kind of awards that ASHRAE does. But there was one other thing that I did, I discovered that we hadn't done a good enough job in recognizing our own staff, the ASHRAE staff. So I've had some conversations with Frank Coda about that and Frank certainly agreed and Frank has put together a recognition program for the ASHRAE staff. And the last time I talked with Frank he said it was extremely well accepted and that he found it to be a very worthwhile thing. It's motivated the people and made them feel good about working for the Society.

C.H.

There certainly is a great staff in Atlanta. Every time I call there, I get excellent response. They're always pleasant so it's working, whatever your view. What kind of advice would you like to give to an individual who is just starting his or her engineering career?

D.R.

Well first of all I would say, the first thing I'd say was certainly join a technical society. If you're in our industry by all means join ASHRAE. But join a technical society. I think it's just very important to not focus all of your attention on just the circle within of influence within the networking within your company. But you've got to network with the people outside your company. And societies, technical societies provide a marvelous opportunity for that networking. It gives you an opportunity to get to know, in my case, it gave me an opportunity to get to know the leading researchers in my field outside of Carrier. The professor that was working on RP3 and RP1 and many professors that followed of course. The people at other companies and industries who were doing the same kind of work that I was doing. So I would say the first thing a person ought to do when he gets in the industry is to give some serious consideration to getting involved in the technical society.

C.H.

I think you get more out of being a member of a technical society than you ever put into it.

D.R.

Oh absolutely.

C.H.

In rewards you really don't know.

D.R.

That's absolutely true.

C.H.

Would you like to have any closing comments and wrap up.

D.R.

No I don't think there's anything in particular that I would close with. I have no special words of wisdom. I'm sure that all the other presidents have said many things that are well worth listening to. I enjoyed this very much. It's been a lot of fun to be able to sit and talk with you.

C.H.

Well thank you very much. I appreciate you being here with me today.

D.R.

Thank you for the opportunity.