

ASHRAE Leadership Recall (formerly Leadership Recalled)
Transcription

Interview of: Burgess Jennings

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Interviewed by: Ed Adams

Note:

Ed Adams

I'm Ed Adams, Triangle Chapter historian and I have the pleasure today of talking with Mr. Burgess Jennings who was the 1949 President of the American Society of Refrigerating Engineers. Let's begin with Mr. Jennings. Tell us about where you grew up.

Burgess Jennings

Well I was born in Baltimore Maryland and spent the first part of my life there. I went through the city schools, enjoyed them very much. Then I, when I graduated from high school I decided to go to college and selected Johns Hopkins University which was also in Baltimore. I took mechanical engineering and got my degree in 1925. Shortly afterwards, I married my good wife, Etta and we had one child named Robert.

E.A.

What college did you attend and what did you study?

B.J.

Actually, as I mentioned, my field was mechanical engineering and so I thought I ought to do something in the line of engineering and I took my first job with the power company in Baltimore and enjoyed my work very much. But I realized that if I were going to get ahead in the world I would have to get a little more education. So I looked around for a place to do further studies. And selected Lehigh University where I was offered a starting instructor ship and the privilege of doing whatever graduate study I wanted to carry out. I enjoyed Lehigh University very much and made good progress there. I was promoted and moved into professorship grades and at the same time I started writing some books but I also started consulting and I want to talk a little more about that later.

E.A.

Tell us about your career.

B.J.

All of the courses I dealt with were in mechanical engineering and shortly after I'd started at Lehigh I became very much interested in refrigeration, a subject that I had considered very slightly before. Actually what got me most interested in refrigeration was some consulting which I was asked to do because one of the local companies was trying to develop absorption refrigeration as a means of making use of the basic product which existed in the Lehigh Valley, namely hard coal. And at a plant in Pottsville

they had actually built an absorption machine. My part in this was to do some theoretical work and some design on future plans. So this is where refrigeration started for me. In order to help me along in this regard I joined ASRE in 1935. I think it was 1935 at least, and made use of ASHRAE's publications in my work.

E.A.

After Lehigh University where did you go from there?

B.J.

I joined the staff at Northwestern University as a full professor and started teaching in the mechanical engineering department. Actually Northwestern University had gotten a big gift from a man named Walter P. Murphy. And with this gift they had founded the Technological Institute of Northwestern University. And I taught at Northwestern until I retired in 1972. In 1955 and '56 at which time I was very active in ASHVE, I was chairman of the committee on research in that society. And as you know the society had a large research laboratory in Cleveland. A lot of trouble developed and they needed a new director. I volunteered to ask for a leave from Northwestern University to satisfy some of these difficulties that they were in at the laboratory. One of which was the, how difficult it was to collect money from the industry because although they liked what the laboratory was doing the industry hated to pay for it. So I took my leave from the university, directed the laboratory for three years, and I was allowed to be away from the university without losing my tenure. And we had - you know, very satisfactory work done at the laboratory during that period. Shortly after that the difficulty of getting money from industry, caused the directors, what was now ASHRAE to discontinue the laboratory and distribute its operation into the colleges.

E.A.

You had a number of text books and papers published. What topics were these on?

B.J.

Most of the writing, which I have done, besides small papers, has been in the area of heat, power, air conditioning, and refrigeration. And actually in all I published about eight textbooks and all of the readership of those textbooks was small because they were designed for top level classes in college. I think about a quarter of a million of them were in use at one time. I don't know how many are still extant but at least many were distributed and sold.

E.A.

Did you have any patents and what were they for?

B.J.

The patents were all in the area of refrigeration and actually mostly in the area of absorption refrigeration. I think I ought to tell you a little more about an earlier part of my life which fits into this. Actually at my age, I have watched the births and development of air conditioning, refrigerators, modern refrigeration, and the whole birth of this industry because it nearly all occurred in this century. At the beginning of the century, there were no safe refrigerants. All refrigerants had an element of toxicity or danger and this limited the growth of refrigeration. Willis Carrier, who has been called a father of refrigeration actually realized that people like to be cool in summer. If they went to a theater they didn't want to have to sweat it out. They want it to be cool and comfortable. So he said we have got to get cooling in big buildings and in the 1900 to 1910 area he started pushing that idea and not using unsafe refrigeration and putting new units on the roof so they wouldn't get, in any way to harm

individuals in the theater, developed cooling. But the real need for refrigeration was in the home because the home had only ice boxes. And ice box refrigerators involved the iceman coming into the house, dripping water over the kitchen which the house wife had to wipe up and giving limited cooling to the contents of a refrigerator. Now most of the companies realized the crucial problem here was to have a safe refrigerant. And in the late teens and early twenty's, they set up teams to try to develop a safe refrigerant. Toward the end of the twenties they finally found one. The so called halogenated hydrocarbon family was done by a team of people of which Mr. Midgley was one of the chief leaders. When this refrigerant was put into manufacture immediately they were able to make refrigerators of the type that we know today and which are in every household practically.

E.A.

Tell us about the early household refrigerators?

B.J.

After the new halogenated hydrocarbon refrigerators had been developed and maybe I should say a word about them too. The old refrigerators, like ammonia and methyl chloride and sulfur dioxide were terrible to smell and if they ever escaped they would have caused all sorts of trouble. And this prevented former development of the household refrigerator. But the new refrigerator, for example one that was called Freon 12, could be inhaled by an individual up to twenty percent of the air they breathed and wouldn't hurt them. Nothing like that was possible before. And I as I had mentioned before a number of companies went into trying to develop domestic refrigerators, GE, Frigidaire, and many more and a number came on the market. Actually for a while they used to call a household refrigerator a Frigidaire, that term was used. The reason I mention Frigidaire was at that time I was consulting with Frigidaire on a different problem that I think would be interested to our membership. Really the first safe household refrigerator that was developed was the gas fired refrigerator which went under the name of Electrolux. That was developed in Sweden but come to this country and all over the world and worked fine. It used ammonia as the refrigerant but the amount of ammonia that was in it was so small, even if the thing blew up in would have hardly have harmed any person in the house. It would have scared them half to death I'm sure but nothing else would happen. I used an Electrolux in my own home for a while and it worked very, very well. The early refrigerators were bulky and some of you may actually remember the General Electric Monitor top refrigerator. Do you remember that? That came in. You were too young I suppose to remember that.

E.A.

I was definitely too young.

B.J.

In any event domestic refrigerators using the halogenated hydrocarbon refrigerators started well in the thirties, when on to the present and each one of you has one in his or her home and enjoys its use.

E.A.

When did you get involved with ASHRAE?

B.J.

Well my first contact was ASRE, as I think I mentioned. That was the 1935. My second contact with the organization was joining ASHVE. And that was, I'm not sure when but about 1945. And then being a member of ASRE and ASHVE, I automatically became a member of ASHRAE when it combined all of

these together. And this was actually while I was working in the ASHVE /ASHRAE laboratory in Cleveland, 1958 I think is the year.

E.A.

What other functions of ASHRAE were you involved with?

B.J.

Well I was on numerous technical committees in all of these societies under their respective names. But my main interest had had been in publications for the societies. I know that I edited the data book for ASRE one year. I was also editor and chief of the guide of the other society in another year. And in connection with committees, I don't want to mention to many names but my main interest while I was at ASHVE was with the committee of research which was actually running the laboratory in Cleveland as well as working actively on publications for the society.

E.A.

Do you recall the date when the merger took place between the American Society of Heating and Ventilation Engineers merged to the American Society of Heating and Air Conditioning Engineers?

B.J.

I believe that was in 1953.

E.A.

Okay. The American Society of Air Conditioning Engineers then merged with which you were president of, the American Society of Refrigerating Engineers to form the present ASHRAE and what was the year that that took place?

B.J.

That didn't occur until several years later in 1959.

E.A.

Okay. Was there any unique function that took place during your term as president?

B.J.

Oh, during my term as president, the annual summer meeting of the society was held on a boat. This was most interesting. The boat was docked at Montreal. All of the members that went to the convention flew or drove to Montreal. We boarded the boat there. It ran down the St. Lawrence river and not one of its tributaries. We got our off the boat at various places, looked over the local landscape, got back on the boat. In the mean time on the boat, all of our meetings were held and they were very serious engineering meetings. My wife and I enjoyed the trip very much.

E.A.

Is there any person that you met during your career that you consider significant?

B.J.

Oh, during my long life I've met many people, one of the most interesting people that I met was Willis Carrier, who I mentioned before and he is the man of course you know that is called the father of air conditioning. But an interesting person that I met on the side was, occurred while I was at Lehigh where one of my colleagues had an idea that he was trying to develop namely to enrich ordinary air which has 23, er, 21 percent oxygen by volume to get it up to 50 percent oxygen. He thought he has a method that would work. None of us agreed with him. So he said I want to get another opinion on this, I don't believe what you're telling me about my idea. So Albert Einstein was in Princeton and he had made himself available to engineers and scientists who wanted to come to Princeton and consult with him and

ask him his views on different things. So we made an appointment to go visit Albert Einstein in Princeton. It's just about a two and a half hour ride from Lehigh to Princeton. So a group of us assembled and went to Princeton. We were lead into Dr Einstein's office, had a nice little conversation, asked the question. Einstein said he didn't think it was very feasible which agreed with our ideas. But during the conversation the telephone rang and Einstein answered the telephone. He became very excited and told us: "my wife has told me the water line into the kitchen has frozen and she can't get any water". And he says: "I don't know what to do". Well one of us suggested to him: "why don't you ask her to call a plumber". So he called her back and told her to get a plumber. But he said: "I have got to go see her, I've got to go see her". So we said we will take you. So we drove, got into our car with all of us. We went out to Einstein's house. Things were very quiet there because in the meantime the plumber had come and fixed the problem and we had a very pleasant meeting with Mrs. Einstein. So whom have I met, I've met the Einsteins.

E.A.

At this point I would like to note that Mr. Jennings was awarded the F. Paul Anderson medal. And also the E. K. Campbell Award of Merit by the life members club of ASHRAE in 1984. Of all of the honors you've received, which of the honors do you consider the most important to you?

B.J.

I'm very proud of the honors that I got related to AHRAE. But I received some other honors too that I may be even more proud of. Of course the first one was that of being elected into the National Academy of Engineering. I was very pleased when I received that and I think the highest honor I have received in my lifetime is that of being named an honorary member of the American Society of Mechanical Engineers. There are not many of them.

E.A.

In closing, I want to thank you for sharing your time and your memories with us today.

B.J.

Well I thank you for asking me to do it.