

THE OSU-ASHRAE CONNECTION

PART 1 – Mr. ASHRAE at OSU, Faye McQuiston “From Drop-out to One of the World’s Top HVAC Educators”

For many years I wondered why Central Oklahoma ASHRAE and OSU had a close connection. I knew some facts, but I also knew someone with most all the answers, Dr. Faye McQuiston, retired Mechanical Engineering professor, whose entire HVAC career was spent in Stillwater. I twisted Dr. McQuiston’s arm to help us all understand some interesting HVAC industry history. Here is the first of a two part series. – Alan Loeffler, Chapter Historian

By Faye C. McQuiston, August 30, 2007

Preface: The following was written at the request of Alan Loeffler from a list of questions he asked. It is written in first person because most of it is based on my personal experience and memory. I don’t recommend publication of my personal background but for whatever it is worth, here goes.

I was born near Perry, OK to farming parents. My dad was a successful share cropper and rancher. I attended and graduated from a small school east of Perry. I attended Oklahoma A&M College for 2 years before fluking out. After a couple years of odd jobs, I was drafted into the Army in the fall of 1950. I attended the First Engineering OCS at Ft. Belvoir, VA and ended up in Korea as a 2nd Lieutenant commander of a field maintenance company. Charlie Baldwin (Central Okla Chapter member and long time sales engineer at Federal Corporation) and I were in the same class and ended up about 2 miles apart in Korea. I stayed in the service until fall 1955 when I was released to reenter OSU. My military service was an important element in my future education. I met my wife Helen during my last year of active duty at Ft. Leonard Wood, MO and we were married the day after I was released in the post chapel. She worked to help me finish school. I completed my BS in 1958 and my MS in 1959. I worked in the Aerospace industry until 1962 when I returned to OSU.

My first recollection of HVAC at OSU was in 1958 when I took a course taught by Bob Irwin, a part time instructor in the School of Mechanical Engineering. The science and art was very antiquated at that time and the text book was mainly about steam and heating. Irwin died sometime in the 1960’s and so did HVAC at OSU. However, there was a short course, *Summer-Winter Heating and Air conditioning*, sponsored by OSU Extension and taught by volunteers. Irwin was the faculty liaison until his death. I will get back to the short course.

I returned to ME OSU in the fall of 1962 as lab director and limited duty teaching. There was no formal program in HVAC at that time, however, I did design and air condition most of the lab before taking leave in 1967 to attend Purdue in pursuit of my PhD. I think the above mentioned short course was active.

I returned again in the fall of 1969 with my PhD degree and full of ____ and vinegar to start a program in HVAC. My dissertation dealt with modeling of heating and cooling coils, which only scratched the surface, and I was anxious to pursue that but first things first. The above mentioned short course had lost it’s faculty sponsor when Irwin died and a faculty member from the school of Architecture was assigned to that duty. He was very unpopular with the volunteers that actually did the work, among them Bill Johnson and Richard (Sam) Ellis the

leaders of the course (*also active Central Okla Chapter members*). Well, Bill somehow zeroed in on me as the new faculty sponsor. This was the best break I could have hoped for. The short course was very popular and people from all over Oklahoma and the surrounding states attended which greatly broadened my outlook. This was the beginning of the HVAC program at OSU as we now know it.

Bill Johnson had greater things in mind for me than the short course although it was quite successful for some time until the need for it waned and other things took priority. The last offering was in the mid 1980's. Bill couldn't wait until I became an ASHRAE member in 1970 and became involved in the chapter. He and others pushed me along much faster than I deserved. Bill Collins got behind me also. His interest was in research and education. He had done his best to foster a program at OSU when he almost single handedly initiated the Denham scholarship in 1964. He saw me as a way to get some research started at OSU. As a little background, the ASHRAE Research Lab in Cleveland was closed down in 1959-60 and fund raising efforts were dismal for contracting research. President Frank Bridgers had drafted Bill Collins to organize a better fund raising program. The program was very successful and still operates about the same as Bill Collins designed it. Bill Johnson also helped Bill Collins with that. Well, this only intensified Collins's interest in a program at OSU. I had the ready-made project, cooling coils, which I had managed to keep alive, and the rest is history. Both Bills opened many doors for me in the Society, starting with that first ASHRAE project in the early 1970's. I always had a project until I retired in 1990 with two projects at that time to turn over to my successor. I do not recall ever having a proposal rejected by ASHRAE. Bill Collins was always very proud that we brought back (to Oklahoma) practically all the money raised in the region.

Sidebar: I cannot over emphasize the tremendous help that Bill Johnson (BJ) and Bill Collins (BC) gave me that directly influenced the program at OSU. In the beginning BJ and I traveled together and shared hotel rooms to aid the Universities poor travel allowances. BJ insisted that I attend all ASHRAE social functions which was valuable in becoming known. BC was so well known and respected in the Society that when he introduced you to someone your stock soared. I knew everyone in ASHRAE that held an influential position. Largely through the influence of Bill Collins, I became a member of all the Society committees and councils related to technology and research. Finally, I served on the board for three years and the Executive Committee as Vice President for 2 years. I enjoyed all of it but the service on the board and Excom were the most enjoyable. It was great to work closely with such people as Damon Gowan and other prominent ASHRAE people. Also, BC never let anyone's eligibility for an award pass.

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PART 2 – Mr. ASHRAE at OSU, Faye McQuiston *“From Drop-out to One of the World’s Top HVAC Educators”*

As I mentioned in Part 1 of this 2 part series on OSU, for many years I wondered why Central Oklahoma ASHRAE and OSU had a close connection. I knew some facts, but I also knew someone with most all the answers, Dr. Faye McQuiston, retired Mechanical Engineering professor, whose entire HVAC career was spent in Stillwater. He kindly allowed me to twist his arm to explain some of the history. He also helps us all understand some interesting HVAC industry history. Here is the second of a two part series.

In *Part 1* which was published in the October issue of the Sou’Wester, Dr. McQuiston shared how he got into the HVAC field after serving in the Korean War, then coming back to Oklahoma State University and Purdue University for his education. He also credited Central Oklahoma ASHRAE members Bill Collins and Bill Johnson as having a big influence in his professional career by getting him into ASHRAE, both locally and at Society levels. He now continues on the subjects of ASHRAE research, his famous textbook, and his observations of our industry as a whole.

– Alan Loeffler, Chapter Historian

By Faye C. McQuiston, August 30, 2007

Preface: The following was written at the request of Alan Loeffler from a list of questions he asked. It is written in first person because most of it is based on my personal experience and memory.

ASHRAE Research at OSU: I consider the research on finned tube coils to be the most important project conducted at OSU because mass transfer (dehumidification) was introduced. As mentioned before, this was an extension of the work I started at Purdue. In the years from 1970 to 1976 this research together with work conducted by Carrier resulted in modeling techniques applicable to almost any finned tube coil. My graduate students and I wrote a number of modeling programs for the HVAC and nuclear industries. I helped Thermal Corp. of Houston, TX, with a number of projects including a very large Air Force test facility in Tennessee. Six or more publications resulted from this research. My textbook has a program to model coils that is an outgrowth of the research.

Very significant work was and is still being done at OSU relative to Heating and Cooling Load calculations. The first reliable load calculation manual for commercial buildings was sponsored by ASHRAE and written at OSU as well as the first comprehensive load calculation procedure for residential buildings. Later upgrades and computer programs have evolved over time, all as ASHRAE projects.

One other project resulted in a computerized duct fitting database. This project laid the groundwork so that duct design programs can access the database. My textbook has such a program. There were other less significant projects dealing with Psychrometric calculations, attic ventilation, etc. Most little projects aided the more significant ones.

Scholarships at OSU: It was mentioned above (Part 1 article) that the Floyd Denham Scholarship was established in the spring of 1964 when Carl Jensen was the Chapter President. However, it was Bill Collin's idea and most of his money. Denham was a close friend of Bill. I think John Carnahan was also involved. The first award was made in the fall of 1964 when Marion Cohenour was Chapter President. *It is interesting to note that Collins later married Denham's widow and adopted the Denham children.* Bill initiated the Chapter Scholarship committee and chaired it for many years before turning it over to Sam Ellis who chaired the committee until his death in about 1986. At that time Bill asked me to be the chairman. I chaired the committee until this past year, 2006. After Sam's death I suggested that another scholarship be established at OSU to honor deceased chapter members. This was done in 1988. At the time it was my intention that at some time in the future the scholarship would be named for some outstanding chapter member (guess who). Last fall, 2006, at my suggestion, the Memorial Scholarship was converted into the William J. Collins Graduate Research Fellowship and endowed with over \$50,000. I couldn't think of a better way to honor an individual that did so much for OSU. By the way, Bill is also a member of the OSU College of Engineering Hall of Fame.

The Textbook: I began teaching a comprehensive HVAC course soon after returning to OSU in 1969. The available texts were very limited and out of date so I started handing out supplemental notes to my class. Over a period of a couple years I was teaching entirely from my notes. In about 1975 a John Wiley editor was visiting and inquired about what text I used for my HVAC course. Of course I showed him my notes, about 3 inches thick. He suggested I write a book for Wiley and we later formed an agreement to do so. I quickly found that I had taken on a monumental task along with all my other work. Dr. Jerald Parker and I had worked together in earlier years (1962-67) on some of his projects and I recognized him as very competent in heat transfer and fluid mechanics although he was not into HVAC subjects. He was also a good writer. Therefore, I asked him to become a secondary author for the book. He initially helped with the more basic subjects and later developed a greater interest in the HVAC field.

Well, the book became an instant success with the first edition copywritten in 1977. Over the years the book has been in almost constant revision to keep up with the rapidly changing field. The latest 6th edition came out in 2005. The book is in widespread use throughout the US and many foreign countries. It has been translated into Korean, Chinese, Spanish and Greek languages. I have no idea just how many copies have been printed but the royalty statements show a total nearing 100,000. I do not expect to see any new editions of the book. In a word, the internet has destroyed any incentive to revise, a long story.

University involvement with local chapters: When I joined ASHRAE you could count the number of members from universities on one hand but as research funds grew, educators saw ASHRAE as a golden calf and ASHRAE membership grew in the academic communities. Members of my generation and before saw a need to give, not take. I am afraid that is not generally the case of the present generation. I see less and less participation in the local chapters and industry by our young university faculty. They are however very interested in obtaining funding.

Thoughts on our industry as a whole: Our ASHRAE leaders have great goals such as the present initiative relative to Green Design. However, I see a great empty space between those goals and what is being done by most designers on the grass roots level. While assisting local contractors and others I see antiquated practices that were poor even when I entered this business. I was one of the leaders when ASHRAE started pushing their continuing education programs (which have expanded greatly), however, these programs are not reaching far enough. I also see too much design being done by manufacturers to promote their products. I think the universities could contribute a lot in their local area by offering seminars and workshops to update practitioners. I believe we did that when I was active.

Closing note from Alan: Dr. McQuiston is an Industry and Central Oklahoma ASHRAE “treasure”. His experience and insights continue to help many in our industry gain a broader perspective.

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