

ASHRAE Leadership Recall (formerly Leadership Recalled)

Transcription

Interview of: William Holladay

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Interviewed by: Ann Boutwell

Note: The original tape recording of this interview no longer exists.

Ann Boutwell

Mr. Holladay, engineers have often been described as having tunnel vision. Do you think this statement is true?

William Holladay

Generally speaking, I think not. The engineers that I know, particularly ASHRAE engineers, seem to me to be men of wide vision who are interested in many things other than the demands of their profession.

A.B.

As an engineer with many diverse interests, how have you personally projected the image of William Holladay, the man and the engineer?

W.H.

Well, I've had the opportunity to make a number of public appearances during my life, and I have frequently used examples in making points which come from the field of literature or music or art, and anyone who knows me has very soon learned of the interests that I have outside the profession of engineering.

A.B.

Could you give me some of the specifics of these interests.

W.H.

When my wife and I were younger, we used to do a great deal of camping. Partly because we couldn't afford any other kind of vacation. And camping taught us a great deal about outdoor living. We taught our children to camp and all of them have, in turn, taught their children the excitement and joy of living in a tent. I early became interested in music, played in the high school orchestra, led a chorus of Boy Scouts in a few musical numbers at one time, and music has probably been the outstanding outside interest of my life, I particularly love opera, in my opinion, one of the greatest of the performing arts. We have over our life time together bought several old houses and remodeled them. I learned something about carpentry and electrical work and plumbing and cabinet work, all of which I think added maybe to the breadth of my vision. These would be some of the ways that we enjoyed things outside the rather narrow profession of engineering. Sounds dull as hell.

A.B.

Can you remember any incidents or experiences in your childhood that influenced your choice of career in engineering?

W.H.

I'm not sure how it came about. I made my first wireless set, they called it in those days, when I was about ten or eleven years old, wireless set radio. I became a radio ham. Immediately after World War I, I decided, although my father had spent his life in the hotel business and his father and grandfather before him, engineering and mathematics and science seemed to attract me very early. And in my sophomore year of high school, I transferred from a business course to a pre-engineering course. So, by the time I was fourteen, that was the path I intended to go. One of my closest friends once said about me that he was sure I was an engineer because one time I came to his house, came in the front door, looked at the loose door latch, and said "Have you got a screwdriver? I want to fix this."

A.B.

Let's see you attended school near Los Angeles, is that correct? And you were valedictorian and gave a speech at the Inglewood Union High School. Do you remember anything from that speech that may have been very profound or indicated your professional direction?

W.H.

I'm not sure that anyone at age seventeen, except maybe Mozart, ever said anything profound. I do remember rehearsing the speech in front of the drama teacher who gave me some instructions, including "Was that last statement supposed to be funny." So, I don't think there was anything profound. It was a very small high school, anyway, and I learned as soon as I started my freshman year in college that there was a great deal of competition among valedictorians at a higher level.

A.B.

Would you tell something about your life, say after you graduated from Inglewood High School in your college studies.

W.H.

I went to what was then called the Southern Branch of the University of California and was a member of the second class because the school had just changed from a teacher's college into a junior college. I went because it was fairly close to where I lived and, as I said a few minutes ago, I found the competition for scholarship was extremely heavy. Among members of my freshman class was a fraternity brother who later became head of the Department of Mathematics at a middle western college, and a number of other people with brilliant minds. This was very good for the ego which I was unhappily, already developing. At the end of two years of engineering, the Southern Branch of the University of California had only two years in engineering, I had planned to go on to Berkeley, but I was the only person in the family who was living with an aged grandmother. I certainly was unable to leave her and my father said to me. "William Lee, you know you can't go to Berkeley and there's a little school over in Pasadena called Throop, or something, why don't you go over there and see if they won't let you transfer. It doesn't matter where you go, you can learn engineering, I guess, at any good school." So I went over to the little school in Pasadena, and it was one of the finest decisions of my life because the little school was the California Institute of Technology, and I'm very proud of having gone there having graduated there in 1924, and I've been a kind of professional alumnus of Caltech ever since.

A.B.

What had been your chief area of technical interest?

W.H.

Well, I started out as an electrical engineer, and like many other electrical engineers of the 20s, I went to the General Electric Company, to their so called test course where they take these young kids and let them wear blue collar shirts and put them out in the factory, testing equipment which is manufactured. After about a year of factory work which started, by the way at 50 cents an hour and I got the standard raise to 55 cents an hour after six months. I then went through the usual personnel department evaluation and was given the option of going to several departments to see where engineering jobs were open. The personnel man said, "Oh by the way, there's a man named W. P. White over in Building 2 who is starting to build a department for something he called a household refrigerator. You might stop and see him. I think he has some openings." Well, it just happened that Building 2 was closer than any of the other places and I stopped to see Bill White, and I never went any further. I became the second employee of the Electric Refrigerator Division of the General Electric Company, and drifted away then from electrical engineering into mechanical engineering and thermodynamics, household refrigeration and eventually, air conditioning.

A.B.

In 1950, you won the Society's Wolverine Award for your paper on Low Temperature Test Chamber Design. What was the Wolverine Award? I don't believe the Society still has that award.

W.H.

The Wolverine Diamond Key, I still proudly wear on my tie clip. It was an award for the best paper of the year and it was established by the Wolverine Division of Calumet and Hecla. Our contact man was a - charming gentleman named Harty and for about twenty-five years the Diamond Key was given to the author of what the Committee decided was the best paper of the year. I'm sure they chose my paper because it was timely; low temperature test chamber design was barely beginning, and the description of the general type of design apparently was welcome. I'm not sure it was a very profound paper. I've read it a few times in the last ten years and it seems very primitive, or primary, today. But, anyway, they liked it. A little more about Mr. Harty - Hi Harty "Hi" was his nickname. Within a couple of years his company began hosting marvelous dinner at each annual meeting and as each new awardee got his Diamond Key, why he had these great parties. Unfortunately, the parties began to interfere with Society functions and, finally they stopped them and during a period of depression, I suppose, the company finally declined to issue the Diamond Keys anymore and we now have quite a different program for honoring the writers of excellent technical papers.

A.B.

I believe your article on the Low Temperature Test Chamber Design was published in an ASRE publication?

W.H.

Yes, it was published in 1950, a very brief abstract. The article described the design and the insulation and manufacturing of the test chamber itself, which was simply a tiny room. The typical one was 8 feet high, and the machinery which was required to get down to 100 degrees below zero, which was the general target temperature we aimed for, in those days we did the work using a so-called compound system where we had two compressors in series because the compression ratios were greater than a single compressor could do, either efficiently or without overheating. We have much better methods today. The early equipment was quite inefficient, but our company and a few others were fairly

successful in getting these things built because, at that time, we assumed that we were going to go to war again fairly promptly and that the war as soon as it come would be fought in the Arctic, and so that equipment which was designed for use during that war which up to now has never happened, had to be able to operative at temperatures such as we might expect in the Arctic, and for that reason we always aimed for 100 degrees below zero. Actually, 100 degrees below zero isn't very hard on most equipment. The thing that tears the equipment apart is high humidity, and we used to build high humidity chambers as well. That's not very technical, is it?

A.B.

No, that's very good. No, I could understand that. In 1969, in Consulting Engineer Magazine the author stated that it was not until 1952 after a quarter of a century of working as an engineer, that Holladay found his niche. That year the firm of Holladay & Westcott, forerunner to Holladay, Eggett and Helin, was found. Would you give a little summary of your professional experience before 1952?

W.H.

Well, it was really not very much to be proud of. I joined the Electric Refrigerator Division of General Electric, as I stated a little earlier, and after a year as District Refrigerator Representative at my own request back to Southern California and after the establishment of distributorship, there was a reorganization of the department and I joined the distributorship in Los Angeles, where I stayed for fourteen years. It was too long. The problem was that these fourteen years were between 1927 and 1941, during which, of course, the great depression occurred. I had a wife and a growing family and I was frankly, terrified of losing my job and so I stayed on a job when I could have spent the time very much better going with a design engineering firm or a manufacturing firm or into some other phase of engineering. Finally in 1941, it was obvious the war was coming and so I looked for another job. It was at a time when the general job market was in great disarray and I could find nothing in Southern California. I joined the mail order house of Montgomery Ward & Company in Oakland, where I ran their repair shop for a very unhappy year. Those were the days when Montgomery Ward was operated by a great tyrant named Sewell Avery in his office chair, out of his office, and depositing him on the street, because Montgomery Ward was taken over by the U.S. Army. I was asked to leave Montgomery Ward and joined a company building one of the first heat pumps. It seems to have been always my fate to get into pioneering. The heat pump was a terrible product and the company went broke. I then joined the Hieatt Engineering Company which, I think, had all of four or five employees. We got into this low temperature test chamber stuff. That was great. In five years there, I developed a kind of a specialized national reputation for the design of low temperature work. It's a fascinating field. If it once gets under your belt, you never forget it. I was responsible for getting a man named Ralph Westcott into our company as vice president of sales and, after about a year of working together, he and I decided that our company was never really going to get anywhere so we conspired together for a while, and went into the boss's office one afternoon after an appointment with him and offered to buy him out. Ralph had some money and I thought I could borrow some. The boss listened to us very carefully and said he would consider our proposal and would give us his answer within a few days. He did. He fired us both! There seemed nothing else to do, and we had heard of consulting engineering and we looked at each other and shook hands and thus formed the company called Holladay & Westcott. This company was named, by the way, one day when I was out of town. Ralph was going to be the business manager and he ordered the stationery. It was he who decided that my name was going to be the first one and his

the second. Ralph is gone now. He was a fine person. We were utterly unsuited to each other but we got along pretty well for about ten years until he went on to other jobs. He became first, the Executive Secretary of the Consulting Engineers Association of California, and then served as its president for two years, and then became the President of the national organization called, at that time, Consulting Engineers Council. After Ralph left, we reorganized the firm. We brought in a chemical engineer and an electrical engineer. We had a few years of quite happy prosperity doing work for the aerospace industry. Then the aerospace industry hit a serious depression. Suddenly there was no more work. The engineers who had been coordinating our designs were now doing the designs themselves, and the firm slowly disintegrated until, in 1972, the firm disbanded. I retired, thought my career was over, and the other partners, Eggett and Helin, formed an electrical engineering firm which is still operating. I went home and just as I was about to sit down in the retirement rocking chair, the telephone rang. That was almost fourteen years ago and I have been busy doing all sorts of consulting work ever since. I am now working out of my house. My overhead is low and, to coin a cliché, "I laugh all the way to the bank." It has been a challenging experience. It is more difficult to work alone than when you have someone else with who you can discuss your engineering problems, and gradually my work has gone into the analysis of jobs that don't work right. Air conditioning work and refrigeration work, as well. I have been fairly successful in improving those jobs and this is very gratifying. Frequently, this leads into litigation, and litigation is an interesting and extremely exhausting field; exhausting emotionally, that is. I've helped lawyers lose a few and helped lawyers win a few. My proudest moment, I think, came when we won a verdict of building in Los Angeles with an incredibly lousy air conditioning job. The contractor promptly appealed and my poor client had not yet a dollar of the money but we're still hoping that he will.

A.B.

You're in Chicago this week in conjunction with the meeting and also seeing a client? Is that correct?

W.H.

I'm doing some work for a client. I've been retained by the American Federation of Information Processing Societies, which is an umbrella group for computer organizations that puts on the enormous computer expositions. They have asked me to check on the exhibition halls to be sure that they will have ample air conditioning capacity to handle, not only a standard type exhibition, but a computer show where all the computers are operating and putting out heat during the summer time. At the end of the ASHRAE meeting, I'm going to Norfolk, Virginia, to investigate the convention facilities down there for the same client.

A.B.

Let's talk about your term as President, or let you talk about your term as President of ASHRAE. That was in 1969, I believe. At that time, I believe you started that it was very important that engineers be committed to lifelong learning. What exactly do you mean by that?

W.H.

Well, engineers, like doctors can very rapidly become obsolescent. I think I may have been the second, or third president to take on a particular theme during my term of office. It seemed to me that lifelong learning was a good theme to emphasize. During my travels to the various regions and chapters, I usually gave a talk on the desirability of continuing to write papers, to attend seminars, to attend courses, and to do everything possible to keep one's self up-to-date. I think today, even more than fifteen or twenty years ago, which the advent of the computer and the incredible new techniques that

the computer has made available to us, this theme is even more important than it was then. There are some states where their registration departments are either considering or have adopted a scheme where an engineering registration cannot be renewed unless the registrant can show proof of having done some study work to keep themselves up-to-date in his profession.

A.B.

Talk about your teaching experience.

W.H.

Oh, yes, that was a great experience. It was shortly after the war and a lot of the returned veterans were going back to school of the G.I. Bill and a man with whom I was working had been teaching a course in air conditioning one night a week, almost entirely to returned GI's who were working full time during the day. He found the load was getting too heavy for him and asked me to take on the job. I taught air conditioning and refrigeration one night a week and it was a great experience. I think I probably learned my trade more completely in the effort to teach it to a group of bright, well-motivated, young men and women than in any other experience I've ever had. For years afterward, I would go into a manufacturing facility, maybe an aerospace facility, and some man bent over a drafting board at the back end of an enormous room would look up and see me and wave and yell, "Hey, Teach!," that always made me feel good. One of my students, I know, went on to become vice president of one of the great manufacturing companies in our industry, and I'm sure others have done equally well. It was a great experience.

A.B.

Going back to your term as president of ASHRAE, do you remember any programs that were initiated or any specific goals that you wanted to accomplish that year?

W.H.

Well, I tried very hard to work out a plan whereby ARI and ASHRAE could join together in their exposition programs. It was too soon. As everyone now knows, this occurred some years after my term of office. The presidency of ASHRAE is a curious kind of job, and I think it runs through cycles. I think probably I was not a very innovative president. I think it is more likely that I tried to systematize or run properly the programs that were already in effect. The thing I most remember, though, is the incredible warmth of the contacts that my wife and I made during first, the year as president-elect when the president-elect is assigned travels and other duties by the president, and then during the year as president. We traveled 50,000 miles each year. We were twice in Puerto Rico; we were twice in Miami; we went to Halifax; we went to Vancouver; and to many beautiful spots in between. Everywhere we were treated as royalty should be treated; I don't know if royalty is always treated that way these days. The red carpet was rolled out. If anybody in a chapter that we were visiting owned a Cadillac, that was the car that met us at the airport. It was one of the finest experiences that we ever had. I've belonged to other engineering organizations. In none of them have I found the kind of warmth and friendship; yes, and even love, that Louise and I have found in ASHRAE. That is why we keep coming to ASHRAE meetings and why we are enjoying our associations in ASHRAE to the hilt. Just one more comment. When Bill Hole was inaugurated as president at the banquet in Denver and we left to go to our hotel room after the banquet, Louise turned to me and said, "Nope, thank God, we're back to sea level."

A.B.

You have been a member of the Society since 1930 and that's about fifty years, over fifty years. During that time, what do you think have been the three most outstanding accomplishments of the society?

W.H.

That calls for some kind of profound reply and I'm not sure I'm capable of it. One thing, certainly, was the merger which occurred in 1959, run by a great group of people headed by Art Hess. I can only think of Dan Wile as another one. Jack Everett, I'm sure was a member of that group. And there were others who very wisely guided the merger. It was perfectly obvious that ASRE, the American Society of Refrigeration Engineers, and ASHAE, the American Society of Heating and Air conditioning Engineers, had many overlapping interests. Most of the cities had chapters in both societies; chapters or sections as ASRE called them. The merger was a statesman-like act which, I think, has been of enormous help to the industry in the past, now over twenty-five years. Possibly a second one is the close association with ARI, which, of course, is the manufacturing arm of the industry. The combined sponsorship of the expositions has raised millions of dollars for ASHRAE research and again, had brought more closely together the manufacturing and engineering arms of the industry. And, of course, ASHRAE has been at the forefront of research during all this time, beginning with the old laboratory of ASH&VE which, I think, started in Pittsburgh and then was move to Cleveland, which was the beginning of the research projects that are now being done by various universities and research organizations. I think that, if I need to have three things that would be the third thing which ASHRAE has done because I am told that no other engineering society operates a program like that.

A.B.

Looking at the industry during the past fifty years, what do you think are the most outstanding achievements during your life for the past fifty years?

W.H.

Well, of course, first the electric refrigerator. Electric refrigeration for household use began, probably, about 1919 or 1920 with Kelvinator. Frigidaire and a host of others followed shortly thereafter. General Electric really got into the act with a pilot model in 1926, and then with its first national distribution in 1927, and that led to the development of the electric kitchen as we now know it, with the electric range, dishwasher, and so on. It's a delight to me to know that the department of the General Electric Company is now one of the largest and most important departments. Then, of course, the great work of Willis Carrier, which started way back in 1911, which led to the organization of the Carrier Corporation; the development of the centrifugal chiller and the general development of air conditioning, which started in theaters, restaurants, and department stores, and has now reached the end product as the window unit on the small end and of course the fine development of large machines. Large and quite efficient systems, and the tie-in of these systems with the computer. Now, this isn't any one single thing. This is the kind of parallel research, product development, pilot operation, and general distribution and sales which has characterized our industry from the very beginning.

A.B.

Name five Society members and I think perhaps you did name one or two already, in your opinion who were truly HVAC&R pioneers.

W.H.

First, I should certainly name John Starr, who as the founding president of ASRE in 1905. I never knew him; he died long before I joined the Society. By the way, I didn't say that in 1930 when I joined ASRE

the total membership of ASRE was about 900 and nearly all of them were in the ice business. I, possibly, was the first member of what we later came to call the "white goods business," who joined ASRE. I remember that I got a letter from the Admissions Committee after I sent my application in that asked why I wanted to join. They couldn't understand why a man in my job, and at that time I was the service manager for a refrigerator distributorship, and I replied that I wanted to become a better refrigerating engineer. That must have satisfied them because they accepted my application. But to get back to your question. Willis Carrier of course. His position is preeminent and unquestioned by anyone. I think I would like to add the name of Art Hess whom I've already mentioned. A very interesting person, good engineer. He was a manufacturer's representative; he left his employer with two others and formed his own company where it dominated the market in Southern California for a number of years. He is the only man to have been president of ASRE, ASHAE, and ASHRAE, and of course no one can ever have that experience again. There are so many great men in our society today. Bill Chapman, certainly one of the most brilliant minds and ablest administrators in the Society, whose term of office was characterized by a remarkable series of reforms. I think Bob McDonald is going to be a shaker and a mover, very much as Bill Chapman was. And we need a man of that type about every five or ten years because we tend to sort of ride on our laurels and on the increase of membership and on the greatness of our research program and we tend to get careless, and we need someone to come in and shake us up every once in a while and reorganize things and set new goals for us, so that we can continue moving ahead.

A.B.

All right, last question. Mr. Holladay, if you were asked to write a brief message to engineers living in 2010, what would you say?

W.H.

Well, I was asked a few months back to write an article on that, on a subject, which appeared in the Journal. And a number of other engineers, past presidents, I guess, were asked to write similar prophecies. Prophecies are always very dangerous, particularly if you still expect to be here at the time the prophecy is supposed to come to pass. I don't really expect still to be here in 2010 because by then I should be something like 108 years old. So it is not dangerous to prophecy. But, really, I'm just unable to do it. I could not, in 1927, foresee the kind of electric refrigerators we have today. I could not, in 1934 when I had designed my first simple little air condition job, foresee the kind of hermetically sealed compressors, VAV air handlers, smart thermostats, and things of that sort that we have today, and so I can't look ahead more than maybe a few months, or outside, a year or so when I can guess that things will maybe a little more efficient, and will maybe make people a little more comfortable. I would hope, however, that we get air conditioning systems in the next few years that work better than the ones that I have been seeing in the last few years. Unhappily, our industry still has people who are doing things badly and, as a result, we get drafty air conditioning systems or air conditioning systems that don't move enough air, or that don't take care of the load properly, and the owners get them stuck with them. It has been my specialty in the last few years, as I said to work on such systems and I am disappointed that our educational process has not worked well enough to keep that sort of thing from happening again. I hope that will be the best thing that will happen in the next few years.

A.B.

Is there anything that you would like to say?

W.H.

That's a nice question, Ann. I have had a very good life. I think I could not have been happy as anything except an engineer and I would like to hope that some of my grandchildren will go into engineering and get the same thrills and rewards out of it that I have got. I am speaking from the vantage point of being 83 years old, of having been married to a great lady for the last 59 years, and even if I repeat myself, it's been the best sort of life that I possibly could have imagined. And I can't think of anything else to say.