

ASHRAE Leadership Recall (formerly Leadership Recalled)

Transcription

Interview of: Clinton Philips

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Interviewed by: Mike Kearney

Mike Kearney

Good afternoon. My name is Mike Kearney and it's my privilege as member of historical committee to interview this afternoon Clinton Phillips. And Mr. Phillips you've been president of ASHRAE in 1982 and '83. And we're here in lovely St. Louis where the Cardinals haven't found a way to beat Pittsburgh yet but we're hoping they will tonight. And we're going to chat for a little bit about your role in ASHRAE and how you got involved in the practice of the refrigeration and air conditioning arts and things you see in the industry. That's the nature of this kind of interview. So why don't you tell us first of all how you got involved first of all with air conditioning or the refrigeration arts.

Clinton Philips

Well I had a friend who thought I might be interested in refrigeration. And through his giving me the first edition of the Trane Handbook which is now a collector's item. He then encouraged me to work with his son who ran a replacement parts for refrigerator repairs in Washington and from that I became acquainted with some people and was offered the job to set up the first service shop for the Carrier appliance industry in Washington in 1939. And from there I went to the Bureau of Standards where I remained for 39 years, many of which I operated the refrigeration, air conditioner laboratories to their standards. So I've had a strong interest in it and because of people who were interested in my welfare gave me some good leads and that's how I got started in this business and I'm still in it. And the work at the Bureau of Standards of course is really the very professionally rewarding and most of my work in first, ASRE, American Society Refrigerating Engineers and in ASHRAE beginning in 1959 when they merged is a direct result of the professional search work and laboratory work I was doing in the Bureau of Standards. Bureau of Standards now called National Institute of Standards and Technology as of last year but the same organization. And through the time period from 1945 when I joined ASRE by the time the merger had come around I had become involved in a number of the committee activities, technical committees, sub line committees in ASRE and was chairman of the Publication Committee at the time of the joining of the two groups and carried that responsibility over. And that was the beginning of, have been essentially a continuum of activities in ASHRAE ever since and which through the progression of the chairs and other things lead to the presidency in 1982. The changes are significant if you look back now and say what was it like then but in no particular time did you see what you thought was at the instant a dynamic change. It's a continuum of more challenges, more responses, more difficulties in some cases. I think that by the time I became president I had begun to realize that the industry is a balance of a large percentage of the people who use the products of this industry, that is they sell them,

install them, operate them, maintain them, service them. To bring those, the value of those products to the public and there is 15 percent actually do the basic research and the design of those products and that the two are equal value to ASHRAE's commitment to serve the public. Put very simply if you didn't sell them and install them and service them there wouldn't be any money to pay the research people to design the building. If the research people didn't design the building we wouldn't have any products to sell. So I think they're both pretty important and so that wasn't entirely my idea at that time but I stressed that in my year that we should look at the continuing education programs for all levels all the way down to the basic operational capabilities of the industry as well as the system design and the fabrication field systems and so on. Manufacturing interests use ASHRAE trained people but they have the program for how to apply that in their own competitive operations. The application in the field doesn't have that kind of a concentrated center to lead that so ASHRAE has filled a very important role. And ASHRAE's always encouraged organizations such as the Refrigeration Service Engineers Society to do the actual training certification of contractors and mechanics in the field. And that liaison between ASHRAE and relative associations I have felt was an extremely important part of its function and still is. During the year I was president I was very fortunate that 17 past presidents were willing to take on representation assignments all over the world between ASHRAE and its sister organizations such as the Professional Engineers of New Zealand. This type of interchange I'm sure that most people in ASHRAE certainly are aware of the large number of countries in which we have direct membership. There were some 40 companies in '82 that had over 50 members in ASHRAE other than the United States.

M.K.

There were countries that had 50.

C.P.

Countries, yes.

M.K.

And even here at this meeting in St. Louis how many people do we have here? I don't really know the count.

C.P.

I don't know but I would, judging by past experience I'd say 12-15 hundred. I really haven't heard the final count. But it's a well attended meeting.

M.K.

And it is well attended by people from overseas. I mention-

C.P.

That's been a stress of a number of the leadership in ASHRAE that looked at the value of increasing international cooperation and by extending, you know, very sincere invitations to take part of meetings is a pretty good way to do that. We put the emphasis on the international hospitality room which helps that effort. One of the visits that I made it was to England, Scotland, and Ireland to assure the basic organization in those countries, which is the Chartered Institute of Building Service Engineers that ASHRAE was not on the prowl trying to take members away from them but to help them examine their functions to see why it was that increasing numbers of the younger engineers were not, were seeking ASHRAE representation. I think the value of that trip was that the associations there used their associate relationship with the ASHRAE to make the products of ASHRAE, the Handbooks and the participation in the ASHRAE meeting, available to an improve the service to their own engineers in the

country and we to this day do not have a particular ASHRAE organization set up which had them quite concerned in that year. So for many times it wasn't to go out and to promote an ASHRAE chapter at large somewhere but to help improve the fundamental interaction between organizations that were doing an excellent job and could benefit and we benefitted by the exchange between the associations.

M.K.

The sister relationship between brothers in the same profession across the way is much better than trying to set up competitive things. I think one of the, you mentioned continuum of ASHRAE I think that's a valuable word in describing ASHRAE.

C.P.

I think, I have to say that in the sense of my own personal image of, you know, ASHRAE, if you look back and you say well in 1959 we had the problem of the merger. In 1959 there were a lot of problems with making that merger go about. Today it looks to me like a logical flow which is never stops. Every year is more complex. We do more things. We have a bigger budget. We service more interest. We have more chapters.

M.K.

I look on ASHRAE as an umbrella organization over a lot of technologies and, you know, well there wasn't the computer and digital control technology 15 years ago. Here it is. A new technology, it's under the umbrella of ASHRAE and we handle it well within our methods of dealing with all the technologies that we're already under then.

C.P.

Well a classic example in the development of standards and standards are not understood well by a lot of people. In the development of standards strong differences of opinion come to the surface. For example in Standard 62 which has just been updated and reissued at this meeting.

M.K.

This is the ventilation standard

C.P.

Yeah. Minimum ventilation requirements. We had an industry that was upset by that standard. And it was the first use of specific public hearings that took place in '82-83 that have set the pattern for our dealing with issues where somebody says, don't issue that standard or if you do we'll do this or we'll do that or some punitive action lawsuits or threats or something. And we work out those resolutions and they've been successful so that now the standards still prevail. And sometimes new standards sometimes just like new regulations do work a hardship on a traditional way of doing business.

M.K.

Or a vested interest

C.P.

Or vested interest. ASHRAE has to recognize that sensitivity but can't walk away from it. But I think in that timeframe we developed the techniques for making sure that all the parties that had a concern had an opportunity to get their viewpoints considered.

M.K.

Yes, I think that ASHRAE does a marvelous job of that having, we've used another interview, here a word, a forum giving people a platform to express their views and there's certainly no lack of divergent views within ASHRAE.

C.P.

I think that that in that same time frame one of the, what I consider one of the most important steps that ASHRAE has taken was the establishment of its Washington office. And that was debated for quite some time before the action was finally taken. There was the feeling that that was lobbying. Lobbying is a real thing. What we do in Washington made look like lobbying but it is definitely not lobbying. Lobbying is where you say, I am being paid to tell you Mr. Congressman to vote yes or no on a particular bill. That's lobbying and you must look the Congressman right in the eye. You can assist his staff or the congressman as much as you wish with technical information, advice and that is not lobbying. We have, we've refined that practice in Washington to a high degree. Jim Cox who was selected at that timeframe to set up and start that office and I was very pleased to be part of the review team that finally made that selection along with Andy Boggs and one or two others. That has been, I think, one of the most dynamic steps in making the knowledge and skill of ASHRAE available to the lawmakers of this land.

M.K.

Do you think one man in Washington is enough? If that's too politically charged.

C.P.

Well I think, well no, it's a good question. I supposed yes and no. At the present time he does have a staff of help in Washington so that it is in fact already more than one man. It is covering the specific objectives quite well at this stage. What might be the circumstance, depending on whose demographic projections you take a great deal of stock in, ASHRAE might have 150 thousand members instead of 50 thousand members. We might need more staff in Washington. Right now it's being handled very well. I think that was a dynamic change to overcome the internal concern about a Washington office as being something that was too political for an engineering association and it isn't that all. It's making a, we have a companion office in Canada that fulfills that same function.

M.K.

Jim Cox's little article in each of the journals is one things I religiously read.

C.P.

Well we've been very fortunate in that Jim Cox was an ideal choice for that job and continues to be ideal choice for that job. We were very fortunate that our first choice was excellent, you know, I don't want to conjecture what it might have been if it hadn't been an excellent choice. The pundits that said we shouldn't do it would probably be right. No, it's been very successful and because of his talent it's been very successful.

M.K.

That's a two way street. I don't think we should get off that subject without acknowledging that Mr. Cox has been very much an instructor of our society at large as to the actions pending in Washington and the probable or potential results of some of those actions.

C.P.

Well again these things come in and are handled so smoothly that you accept today as routine but didn't even exist two or three years ago and one is the identification of the issues that affect every level of ASHRAE operation down to each individual member in a chapter in the relationship with his own town council, his own the community interests, municipal waste to energy for example. There are some guidelines that are now available when before that was just considered a pie in the sky for something in Capitol Hill to talk about.

M.K

I know. You're talking to a fellow that came from Nashville, Tennessee. I sure want to remember a guy name Reese Wilson. Did you ever meet that fine fellow?

C.P.

Yes he was with Carrier and designer of the plant. Indecently that plant, part of my current level of technical interest is in distributed energy systems, call it district heating or cooling in some cases or co generation application for the recovery of all energy back into the useful service so that we don't waste energy from any process. Such as electric power generation for example which is a big waster in many cases. To utilize all the energy as a companion to the better insulation better and structure of buildings so they don't require as much. Then you have the package. You see even though ASHRAE standards without question have resulted in better thermal performance of buildings, the additional numbers of buildings require more energy in total. And so that the efficient utilization of all of these energy force is an equal target of ASHRAE and being handled very well in the several technical committees in ASHRAE.

M.K.

Well take a look at your notes and see what things we'd like to cover.

C.P.

I mentioned the fact that I was very fortunate that I had a great number of past officers who were willing to give up the time to represent the society. I think that trend, it was very useful then and it is still useful today. There's a tremendous pool of talent in the people that have moved up in through the chairs because it does involve seven or eight years. That is too valuable to turn off at a given date and so I encourage that in future actions of ASHRAE.

M.K.

I see that is quite a standing committee of presidential members that attend each of these meetings and it's an impressive thing to see that continuing commitment which ties into your word continuum that you described ASHRAE as.

C.P.

I think one of the other things that I have felt came into being about the time I was president, more so than I necessarily brought it about, was our increased awareness of the need to refine our electronic communication channels. We've recognized about the time that we needed to look at something beyond piles of paper stored in boxes because we were not able to keep up with the demand for information exchange through that mechanism. Other educational channels were finding that same difficulty. We now have, by adopting the computer to its maximum capability from day one which a lot of people thought would never happen, so that we've gone through three generations of computers now in ASHRAE and used the talent to the absolute limit each time and I'm sure we will continue to expand that to where now an engineer member of ASHRAE can through electronic means get instant recall and references that he needs whereas before he would have to write, say please send me a copy of this and so or make me a copy of this and so. That and the voice communication on an instantaneous basis. Then again as we talked earlier that the facility of the fax machine which lets you deal with international relationships on a same basis you could deal with your neighbor across the street, certainly accelerate all of the programs that we have that where information has to flow. And after all ASHRAE's a information, developing, gathering, disseminating group. If it doesn't do that it fails it's job. We've

now begun to close that last loop. You can get just about anything that ASHRAE has right away and that's an important step that has occurred in that same timeframe.

M.K.

Yes it is. While you were at the Bureau of Standards you got involved with the problem of testing to ensure that what manufacturers in our industry claim for their equipment was in fact true or represented fairly to the public what the equipment would do. Can you explain the evolution of that?

C.P.

Well I'll explain it in the, as it would relate to technology of ASHRAE. For example the development of room air conditioners. There's a major new product and very rapid expansion of that business in the late 30s early 40s. There were no standard method for tests. There were no standard methods for rating these things and as a result all kinds of claims got in and the industry was without a kind of a central guideline because ASHRAE had been doing its homework and had been developing the calorimeters they could be used to make these tests very accurately, it was easy to coordinate the efforts and the interest of that industry by doing some central testing and discussion of results and the industry then got together and formed their certification programs which to this day function to assure that ratings are in fact in keeping with performance based on a standard developed by ASHRAE test method using calorimetric equipment developed by ASHRAE and meeting the standards for the product performance as issued by the respective trade associations, the Air Conditioning and Refrigeration Institute, Association of Home Appliance Manufacturers and so on. That's another point about standards that has to be defined very carefully. ASHRAE does not write a product standard in other words it doesn't write a product that says this machine must do this good or better when you test it thus and so. That's a product standard issued by industry. What ASHRAE does do, it says here is that method for making the test that determines whether or not that product does or does not meet the standard. And so that ARI is a good example, Air Conditioning Refrigeration Institute. Many of their product standards directly reference ASHRAE test methods and they say this product shall meet or exceed these requirements when tested in accordance with ASHRAE standard number so and so. That's the professional testing capability of ASHRAE married to that very legitimate commercial product standard which ASHRAE does not write. The more a more difficult decision which is in the same timeframe we're talking about was as computers begin to emerge very large in their, everybody's utilization the question of whether or not ASHRAE should write a standard for software that would do load calculation, heating, cooling load calculation. After all ASHRAE has developed many algorithms for how to determine solar effects, how to determine building orientation effects, thermal conductivity of wall structures, envelope performance and so on. How to do it, how to make those measurements but not how good those measurements have to be, you see.

M.K.

So a precedent was set on the equipment.

C.P.

So a decision was made and I think it was a correct one, that software is a product. The ingredients that make up the software which may come out of the technology of ASHRAE such as the algorithms for calculation procedures, are legitimate contributions of ASHRAEs to a product standard but that ASHRAE doesn't issue that product standard saying this software program will give you accuracy of thus and so.

Other's commercial interests take that breaking of software as a requirement as a product standard and then ASHRAE methods of evaluation are used to determine do they or don't they do that good.

M.K.

I think that's a clean line to draw in, don't you.?

C.P.

It's essential. One of the things that you have to remember is that ASHRAE is an individual membership society. And one of the principles that I think has made ASHRAE quite strong over the years and continues to do so is that all of the policy decisions in ASHRAE are made by elected members who are volunteers. Policy decisions are not made by ASHRAE staff. ASHRAE staff carries out and very well, the policy decisions but all policy decisions, all technical statements, all papers are the products of individual volunteers which is a cardinal principle that is sometimes, because we know it so well we don't think of it every day. Say oh gee whiz, ASHRAE is individuals and therefore they're volunteers but that's an important concept in the success of ASHRAE.

M.K.

Yes, I think we shouldn't lose sight of it and I'm glad you mentioned it. That it is, ASHRAE is a volunteer society. We were laughing when we interviewed Jack Chaddock about, he described, I had him walk through the making of the standard and it's an involved process. I mean lots of meetings, really good heads coming together and I asked him, I said, how much were you paid. He laughed because we both knew that this is all volunteer.

C.P.

Well there isn't much question but what the ASHRAE Standard 90 series which dealt with the thermal performance of buildings was probably the most man power comprehensive standards we've ever undertaken. And it had dynamic effects in the entire industry to move those into the consensus process as American National Standards.

M.K.

Oh, please focus on the word consensus and how that relates to committee work. That's a good thing to be described.

C.P.

Okay, well ASHRAE's committees themselves practice what would approach consensus because the members of the standards committee in ASHRAE, although they come from companies or universities or private practice are themselves functioning as individual experts and therefore constitute a consensus base for interests of the manufacturing industry, interests of the universities, interest of the consumer, interest of the retailer and so on. The American National Standards Institute process carries that one step further. You have to understand ANSI does not determine the technical adequacy of any standard. Their function is to determine what ever that standard is it has met their guidelines, their requirements for a consensus acceptance. It's not that hard to understand but the work involved in achieving consensus in a standard can be very, very demanding. For example ANSI says we have your standard. We are putting it into the process for ANSI acceptance. We have reviewed your documentation about who wrote it and how many people participated and what the votes were and you know what you've done with your reviews. Now we don't think your reviews were adequate enough. Therefore we will put this out for public review. They will add their consideration of individuals who might be impacted by or affected by that standard which may have been broader than you had looked at. That's their

judgment factor. Now that goes out for public review. Every comment that comes in has to be specifically addressed by the sponsoring organization and they must document their response to that comment. Doesn't mean they have to do everything that somebody says. And if some of them are trivial or off the point you can say that and ANSI will accept a limited number of those responses. But any substantive comment has to be addressed and if a substantive comment requires that there be a significant change then the document has to be redrafted, go back up for public review. So if you recognize that ANSI's performance and it's an invaluable service, is that when that is issued it has met their determination of a consensus approval.

M.K.

I would suspect the ASHRAE's process does a pretty good job of satisfying ANSI's requirements for public review. I'm aware of how much public review our standards get.

C.P.

During the time that I was president that came very much to the foreground because we did not in one case of a major standard, time coordinate our view through process with the ANSI public review and because after we then submitted it, some time went by and then it went out again. Basic changes had occurred in the industry and it was no longer appropriate so major changes were necessary. Now the lesson we learned from that is that we absolutely coordinate the times of review so that they are certainly not scattered in time. They may not be absolutely parallel but you don't submit it and then ANSI has to go through the process of setting up who should do that review. You've done all this in coordination so that it follows in the matter of weeks or months rather than years later where industrial changes can take place. So that was a very valuable lesson that was learned. It caused us some delay and so unhappiness and a great deal of review work but it was a valuable lesson and we profit by that lesson.

M.K.

I want you to do go back a little bit and dwell on your tenure as presidency a little bit. You mentioned you personal involvement and the time you spent and the number of miles you traveled. Your first wife was involved with ASHRAE quite a bit and I think that's true for all people.

C.P.

Well yes. I was very fortunate that my wife and my family for almost 40 years shared my ASHRAE work very intimately and it was very pleasant and very productive. My wife Ethel died in 1981, the year before I became president of ASHRAE. In fact she died very shortly after attending with me the dedication of the new headquarters in Atlanta which was a visit that I cherish very much because we both enjoyed it. And it kind of, it was a fitting point on which to recognize that we both contributed a great deal of time any interest in ASHRAE. I have remarried. My wife now, Mary Jane, is in her own right an ASHRAE member. Very active in hospital engineering work and so I'm very fortunate that I have a continuing shared interest in my family life which is very rewarding to me.

M.K.

Well maybe day we'll have a Mrs. Clinton Philips as ASHRAE president.

C.P.

I've never really specifically asked the question. We may be the only husband and wife joint member couple in ASHRAE. I don't really know. A great many people in ASHRAE have their wives who take a lot

of active interest but they are not themselves independent members of ASHRAE. I really don't know the answer to that.

M.K.

I assure you you're not the only husband and wife jointly in ASHRAE because I know of some at the chapter level but I think perhaps at the board level you have perhaps-

C.P.

As I say I've never really explored the question but maybe we should have, we got many, many committees. Maybe we should have a committee of married couples. Some sort of thing like that. But I think the point that needs to be stressed here is that it's not a solo effort and the participation of the family for anyone who gets involved in more than the routine membership participation which can itself be rather expensive in time, but who moves into the chairs and operation will make a definite commit in a time since, a travel sense that ASHRAE. Mary Jane and I, as I mentioned earlier, have the good fortune to travel quite extensively during the last year and it was very productive.

C.P.

You mentioned a little bit about the number of miles you traveled as a president. I think that's got to go on the record to give people a feeling for the commitment.

C.P.

I think during the actual, if you take the time as you approach the presidency during the president elect and during the timeframe that you follow up, I do not have any exact computer printout, but in that two year span I'm pretty sure it was in excess of 100 thousand miles.

M.K.

That's a remarkable.

C.P.

And it did it sort of builds up over the years. It isn't just all the sudden you start traveling and all of the sudden you stop traveling. It sort of goes up and then it sort of works its way back down to a lower level.

M.K.

And you went to several countries and that exposure and I'm sure it's a rewarding experience to be able to travel.

C.P.

It is indeed. Think I Bush meeting our president Butler, President Bush meeting at his chairmanship of National Engineers week is a kind of a nice touch for ASHRAE. It shows that ASHRAE is a value to the energy industry, makes that meeting meaningful. And of course Dave Butler has done a fantastic representation job all over the world. Probably more than any president up to this time

M.K.

I think Dave and Sharon Butler, I think each presidency sets a standard and I think your word continuum, I think that's a valuable word because I see the presidency and the couple-ness of the presidency being part of a continual that continues to advance.

C.P.

It certainly is a continuum from the personal standpoint of the individual that's involved. I think each president brings a different philosophy, a different background, a different approach but the fact that a

large number of people contribute a great deal of advisory administrative assistance to that position give ASHRAE a solid continuum and I think that's an important aspect of the society's growth.

M.K.

Certainly does. From having gone through the chairs and now very active in the continuum of committee work. What kind of milestones, you mentioned the Standard 90, what kind of points that you would you like to stress or that you've seen and observed in ASHRAE that you think are important?

C.P.

I would think that our moving effectively to embrace rapid electronic communication channels is an important milestone. I think that the recognition of the importance of the continuing education programs is a major milestone and one which should be expanded.

M.K.

Yes I agree with that. I think education and-

C.P.

Information changes so rapidly and there is so much new information coming that you simply have to concentrate now and then on a subject that is important to your work because you can't, in a scattered fashion, keep up with these, in the professional development seminar series brings those advancements directly to where you can concentrate on that for a day or two. That's probably the most effective way to say here's an area of interest that I am, that is important to my work I will benefit by taking the time and participating in that activity and I think we need to do much more than that.

M.K.

I think this media, the video media will be able to bring those seminars and package them and distribute them much more effectively than us taking those individuals or perhaps not as effectively but it will enable us to spread those seminars without having to take the individuals out of their home. To find value in that.

M.K.

Well there's no question but what the long range concerns of the society which are addressed by the long planning committee have to try to reach ahead a few years and say can we continue to have these parallel track meetings where you can't get to the things you want to go to. Should we reorder the structure of those meetings? Should we have three meetings a year? Should we have a meeting which is purely technical, a meeting which is purely administrative? Should we have one that is purely for the technical committees to meet? Each of these carries enormous implications of which you disrupt the inertia, if you will, of a certain pattern and you pay a penalty for that. On the other hand if you allow a technique to become overburdened because it's too jammed, too crowded then you lose that angle. So the demand is on the responsible individuals and that means everybody in ASHRAE to say, I think we ought to do this in the future and then get that into a consideration channel through a mechanism such as long range planning which isn't burdened by putting out the fires of today's immediate problem or tomorrow's immediate problem but is saying what will it be like in five years, what should we anticipate, what should we be preparing for in terms of new methods, new thrusts. Should we alter the basic structure in some way? Certainly should we consider the actual mechanics of our membership interchanges, 50 thousand members around the world, even when we have a very well attended winter show meeting we still don't personally bring in 50 thousand members to a meeting. So we have to really think about how do we provide the services of ASHRAE to the 40 to 50 thousand, 40 to 45 thousand that

can't or don't get to a particular meeting for example. So we have to look at the whole spectrum. Certainly if you recognize that the end product of the technical communities in which there are considerable number in ASHRAE in many subjects, is getting that information into the updated chapters in the basic technology which you know, the Handbook series.

M.K.

The Guide.

C.P.

Well we don't call it Guide anymore. It's the Handbook series.

M.K.

The four set, the four volume set.

C.P.

Well five volumes now including the Refrigeration volume.

M.K.

Okay. The Fundamentals..

C.P.

The Fundamentals. Well it varies, you know, we keep changing that. It's been five now it's four again by combining. But we have just again just put the refrigeration volume back as an independent publication because that was an element of our society that needs to be served. It's coverage is broad enough that it warranted a specific volume for that as opposed to one for equipment systems, and applications and fundamentals.

M.K.

Let me begin to bring this to a close Clint. What I want to ask you is, you work on the Long Range Planning committee, I think is significant here. What kinds of things do you and your personal crystal ball, I don't want to speak for the committee, but what do you think are going to be issues that ASHRAE is going to be facing in the coming years.

C.P.

I think, you are asking earlier about milestones. For up until about six, seven years ago we tended to address health problems as what somewhat to one side of our main theme of interest because number one we didn't consider ourselves to be medical experts or even health experts. I think the changes that will come in the future will follow the pattern that we've taken with the health aspect. We now say that part of our scope covers the health aspects of the products of this industry and the application of it. That was a dynamic change in thrust.

M.K.

Did sound like much but there's a lot of impact isn't it?

C.P.

But to do it we had to make sure that we included in those technical decision levels people whose credentials we could vouch for that could take the medical aspects and be sure they were correct. There were sort of consensus if you will in the technology. I think that, I feel that our mission is more substantial and more valid because we don't continue to be evasive when somebody says, are you concerned with health aspects. The answer is we are now officially and properly so concerned with the health aspects, things such as Legionella. What is correct what is not correct. The CFC's aspect. If we weren't concerned with the health aspects, what would our role be in being concerned about CFC's? If

we weren't concerned about global warming, why would we concern ourselves within our technical committees about the emissions from energy conversion processes? So that that was a dynamic decision. I think we're going to see us not take over other technologies, we certainly are not taking over medical technology. We are properly addressing our role in medical aspects of our products and services. I would think that we may find that our technology would find better guide lines for direct assistance in areas of legislated decisions. We're not going to take over the lawmaking and we are not going to become lobbyists. I think the same thing would be true in terms of some of the legal ramifications of system designs and applications. We're not going to suddenly become the ASHRAE Bar Association.

M.K.

But we were going to hold hands with our fellow professionals and share our skills with them and come to a better result as a result of it. Is that the kind of point you're making?

C.P.

I think that's absolutely inevitable.

M.K.

But it is a change for our society. At one time we were very much focused on just refrigeration and comfort conditioning arts and now we're embracing the technologies and the skills of other professions.

C.P.

Yes and to do those major changes does involve some agonizing about how best to do it. What are the proper boundaries for that, requires very careful judgment.

M.K.

Well I think this is a good point to, place for us to stop and Clint Philips, I very much appreciate the opportunity to talk with you and chat with you. And I'm quite sure there's going to be a number people benefit from your...

C.P.

I think that it's important that the historical elements, as dynamic a technology and as dynamic an association as ASHRAE is it's got to be documented. In other words I think we've been a little remiss in that in the past and I'm thank you for your part in that.

M.K.

Well I thank you very much sir and I think we've got a better tools and we've certainly have a good skill behind us to preserve this on videotape for the first time. I think this is a good tradition. Thank you again, Clint Philips and we're going to sign off here.

C.P.

My pleasure.