

Alan Cooper Oral history, February, 2016 (recollections of his father, Frank Cooper at Haskins Labs)

DPS: I'm Don Shankweiler and I'm in on this too, We're both together here

AC: Oh, good. I'm curious to know what motivated your study to get the information. Is this a more complete biography of the Labs?

DPS: Well, we hope to write something more, particularly about the early years of the Laboratories. We sent you what we had written already, and I suppose you saw that.

AC: Yes, we did. I did.

DPS: Which was the sort of story of the reading machine for the blind, which was the impetus for the development of the line of work that we, Carol and I, pursued and our colleagues and where one branch of the Lab was mainly occupied for the last seventy years or so.

AC: Right Well, like my brother, I have only some vague memories of the early years; he has more...he goes back another six years than I do. He's six years older than I am. And he was born in thirty-eight and I was born in forty four.

DPS: You were born in '44, right, so you were born just about the time that the...the period of the Lab's history began that employed us. I mean the speech research period started about '44 or '45.

AC: Directly after the war.

DPS: Yes.

AC: And so, as a child,,,a baby and a child, my focus was on other things, and, by the nature of the way research was done at that point, and there wasn't much information being fed back to me at that time.

DPS: Right.

AC: After...years later, when my father was here [Palo Alto], then he began to reflect back on his time at the Lab and [found] his memory and that kind of thing, and so it was indirect, rather than a direct memory.

DPS: So you were in...He lived in California for the last 10 years of his life approximately, as I recall.

AC: That's...I think, he came out here around 1989, and then...yes. So that's when they moved out here. They sold their house in Westport. The timing of this was that we lived in Hastings on Hudson til 1950, and then they bought the house in Westport in 1950.

DPS: OK.

AC: And I lived there until I graduated from high school in 1962 and then went off to University of Rochester. So basically that was the time period that I was in Westport. And would be going in and out of New York to see him...to visit the Lab on occasion as a child. And it was impressive, but...and interesting and mysterious, but there really wasn't a lot of other than vague impressions of what the inside of the old warehouse was like.

DPS: Right. It was not deluxe quarters. It was colorful, but...

AC: It was colorful and his routine would be to usually spend two or three nights in the city and sleep in that old sound room. And then come home. He might even spend the whole week in the City and then come home on the weekends. And that was efficient because...efficient for him, because it would be...he didn't have the hour commute back and forth to Westport.

DPS: Right, You know, Alan, a lot of people did that. That was kind of a way of life of Haskins people. I slept in the Lab lots of times myself and a lot of my colleagues...There were people who came up to Haskins from the Philadelphia area and used to...And then others who came down from Conn...like me who came down from Connecticut. And we would always stay over night, because it was just too long a distance to commute there and back in a day.

AC: Yeah Occasionally on weekends, Al Liberman would come by or the Provasolis would stop in. Luigi was a very...They were all interesting people, but they were...To me, I would meet them and then as a part of the formality, as being the kids of Frank Cooper, and then be sent off to [do?] something else...[so they could]? complete their business. And that's just the way life worked at that point and so...But I did have some very fond memories of meeting these people as individuals. And Al Liberman's kids...we went up to his house at one point and spent a day up there and...but these are small vignettes that aren't really going to help you write a story about the Lab.

5:25

They're more interesting in personal fashion. Now Caryl Haskins was really a...They lived only about five or six miles from us in Westport in a big estate. And my recollection is you'd just drive down this long driveway and this big house. He was a very imposing individual, very intelligent, but it was clear that he was sort of in command. Not as a general type, but just as a very knowledgeable scientist and my father respected him greatly also, as well as getting along with him. But I don't know what their professional interactions were and how they really got started. I've learned more by going back in preparation for this call by going back and reading four or five different memorials that were written about my father. New York Times and...

DPS: Well that was good, that was good of you to do that.

AC: National Academy and that kind of thing.

DPS: What was your...what did you study at...and what did you do? What is your work?

AC: My work...When I left the University of Rochester, I came out to California and went to San Jose State for a Masters degree in geology and then Stanford for a PhD in geophysics. And then went to work with the US Geological Survey doing marine biology of Continental Shelves from Alaska, the Solomon Islands, and for the last 15 years in Antarctica doing climate studies and geological research offshore of Antarctica. And I'm still active. I "redirected"--that just means you get busier when you stopped being paid.--about, oh, I guess about 12 years ago. And still continue to have an emeritus position with the US Geological Survey doing work on Antarctica and also was teaching at Stanford as part of those Antarctic studies and have maintained a connection with Stanford ever since. So that's sort of...My interest was also driven into acoustics in marine geophysics and so I've always been...and over the last 10 years, it's been the inter-merging of science and the arts as I'm a violinist and very interested in that interaction.

DPS: I'm a violist myself,

AC: Oh are you! OK! Well, you know all the viola jokes.

DPS: Heard too many viola jokes.

AC: True.

DPS; But, so Alan, you share with your father a background in the physical sciences. And he made a big career change when he moved from the work that he was doing with Caryl Haskins during the '30s and early part of the '40s, we think, to becoming a speech researcher. And I was wondering if he had talked with you about this shift, this big shift in emphasis.

AC: No, he never talked about the shift in emphasis. But he'd always been involved in optics. One thing I have not seen mentioned in any of the bios that he talked about in the early stages was the...during the early war years that they were...they actually started part of working on optical systems for gun sights...optical systems for gun sights and bombardiers. And were going to start up a little company, but that never went any place. But he maintained his interest in optics. And I think that was when he picked up on the Bell System, which was not an optical system for speech research, but then moving into the designing and making an optical system for the Pattern Playback machine. It was really a...That fascinated me as a kid. I just watched that thing. And even too, as recently as 10 years ago, I was trying to set up a digital equivalent of that for doing analysis of geophysical records. But it just didn't pan out. But anyhow, I think it answers your question. I think it was the optics side of his research and high energy physics—he was very intrigued by high energy physics—and it was working with Caryl on that aspect. And then getting into the wartime optics and then moving into building on Bell Labs' work.

DPS: I think there was some...Your mentioning of gun sights sort of rings a bell. It seems to me that there was somebody else at Haskins Laboratories who was pursuing that. But I can't think of who that might have been.

10:42

CAF: Any of the camera people?

DPS: Yeah...

AC: It was a camera operation and then I guess part of that was then developed...one application was then going into the wartime application. But it never panned out. I mean, I guess it failed, and I was never really clear what that was all about. He just talked about it many years later...

DPS: Well the National Photocolor Corporation as set up as a way to fund the Labs pure research. That's the way I understood it.

AC: Sure, probably was.

DPS: And that was the motivation, but, as you say, it didn't pan out.

AC: No. Another thing that doesn't really show up, and I'm not sure how this links with the Lab is his connection to the United Nations and...during the McCarthy era and all of his work with the United Nations on Science Liaison on Atomic Energy and the negative kickback with the McCarthy. That doesn't need to be mentioned but it's part of his history.

CAF: I don't know anything about that history

AC: I don't know how that links to the Lab or not, whether there's any spinoff on that or not with other scientists at the Lab? Have you ever heard anything about that?

CAF: I haven't heard anything about that. Have you?

DPS: No, no.

CAF: Can you say any more about it?

AC: Well there was a time duringwhen all of the Hollywood people were being investigated by McCarthy and everyone was being called, that he, too, was put under the observation and inquiry, because of his connections to...through the United Nations through the Atomic Energy, and interactions, scientific interactions he had had with some Russian colleagues. And that immediately raised some questions and all of this was all shown to be simply work done in the...along the scientific line of trying to negotiate these Atomic Energy issues. He never talked about it then, and it was only til much later that he shared some of his rather harrowing

experiences in that period. But it falls in that same period of, I think, the late forties, early fifties.

DPS: Was he somebody who was asked to give testimony to McCarthy's committee?

AC: I don't know..I don't know whether it went that far, but it was...I don't know whether Caryl Haskins was ever...Of course, I don't know whether Caryl had that same connection at the United Nations or had been an advisor. And this may have been a spinoff of his work in World War II in the Office of Scien...as a science liaison.

DPS: Yeah. So the two of them went to Washington at the same time, I think. Is that your impression?

AC: My impression...The timing ...I don't have a good handle on the timing. I do know that my father and Caryl were both...My father was a member of the Cosmos Club and spent a lot of his time there. I think Caryl was also. I think that during the war era when he couldn't be at home...I mean that was...I was either had just been conceived or was a baby in the crib, so I...I know he did have...Later he talked about his time in Washington at the Cosmos Club and other people he met there.

14:20

DPS: Where was the family home during the war years?

AC: Up until 1950, it was in Hastings on Hudson.

DPS: Oh, from when to 1950 about?

AC: From the time he moved from Schenectady.

DPS: OK.

AC: And I don't know when that was. My brother might know. I believe that as long as he was...that we were at least there, in Hastings on Hudson, since he [Craig] was born, '36...'38, I'm sorry.

DPS: The Laboratories didn't move to New York, to Manhattan, until 1940, I think. That seem right?

AC: Again, I don't know anything about the move of the Lab.

DPS: It was at Union College in Schenectady for a while.

AC: That was news..that was new to me. I hadn't heard that before. He[FSC] had mentioned that there were,,,He never made it cl...I don't recall that he ever later in life told me about that early connection to Union College.

DPS: Ok. So did he talk about his activities in Washington at all later on?

AC: He was always a fan of Vannevar Bush, as he should be because he was working with him.

DPS: Right.

FSC: But he never talked about exactly what he was doing in the war other than going back and forth handling science issues. And he had said he was a classified, top secret...

DPS: Yes, yes.

AC: By nature I think he would not have spoken even later about those things that he was working on.

DPS: Right, right.

AC: Because he was classified.

DPS: He was a man who wasn't given to loose talk. I know that.

AC: That's very true. And it was not until I think he was in his eighties in Palo Alto that he began to even loosen up and begin to talk about some of these things that I know about.

DPS: OK.

AC: As a child there was very little information coming out.

DPS: Right. Well that's probably par for the course.

AC: Was that what your impression was also? Usually in the professional science world at that point that was the way. He was very, I guess...I don't have the right word for it, but very dedicated...focused on the work.

DPS: Very much so. Well, did you spend time in the apartment in New York City? I mean was that also a family....a place the family could stay, or was it just a little cubbyhole for him?

AC: Oh, right. There was a time when they had an apartment. Yeah. No, that must have been after I had left for school. That...

DPS: OK

AC: I had left for Rochester.

DPS: Right.

AC: I had gone off to college. Because I do not remember any time going down and living in New York City. I only remember visiting.

DPS: You spent most of your life in California? Is that...

AC: Yes.

DPS: You went out right after college? Is that...?

CAF: Right after Rochester.

AC: Yeah, I...after Rochester, I went into the uniform services of ESSA, E-S-S-A, which is the Environmental Science Service Administration. I was in ROTC and so was serving my time. And one of my assignments during that period was to come out here and do earthquake research with the Earthquake Mechanism Laboratory. So that was in 1967 and I have been in California ever since then.

DPS: Yeah. It was...1965 was the year that I joined the Laboratories in New York.

AC: You were what, I'm sorry, '65?

DPS: '65, yeah

AC: '55

DPS: Sixty five

AC: '65 OK.

DPS: Yeah.

AC: Wow. You know it probably from hearsay as much as I do or ... Clearly more about the early history. I just know it from a little bit of the personal standpoint.

DPS: Did you know Paul Zahl who was...?

AC: I knew of him, and I met him at one time, and I was always enamored of this, as a young child, of this explorer that came out of the jungle, and just bigger than life. And he wrote his book, but I never...It was just a passing glance. I mean I think we may have met once. So I don't know anything about him.

DPS: Well he was actually the editor of that volume that...summarizing the work they did on the reading machine for the blind in the early years. So he was very much...He was a biologist, Harvard trained biologist, and I think he was involved pretty much from the start in the Laboratories, but I'm not sure about that.

AC: Well, I have a vague recollection of going and visiting the Labs in this dark building walking on these wooden floors through this long room filled with lights and plants underneath

shade...under lights. And my father talking about, oh and this is Paul Zahl's area of the Lab. And he's working on this, that, and the other thing. And then, so...That was..So that's sort of the extent of my memory of what his work was like...maybe just a little novelty.

DPS: Well, now I haven't made a concerted effort to find everything that they've published through the Laboratories in the thirties. But it seemed to me that the work that your father and Caryl Haskins were doing had to do radiation biology. And I didn't know of any other thing that they might have been doing.

AC: And that I really can't help you with. I didn't...I was interested to learn from these bios that are written more details about that particular aspect of his work.

DPS: Well, they met at General Electric, the two of them. And General Electric was building a million volt X ray machine or something. And they needed to know more about the effects of high-energy radiation on biological tissues, on reproduction, and genetic material and so forth. But that's really the extent of my knowledge about how the Labs got started and what they were doing.

AC: Yeah, there are several...I've seen a couple bios of Caryl Haskins. I've not read them in detail, but I wonder whether they are...is any information...any further information that might be of value to you in those bios. One, I think a book on...Do you have those, by the way?

CAF: We have Alice Dadourian's biobibliography that she put together in his later years. But have we seen any other biography of him?

AC: There was one other biography of Caryl Haskins life, and...

DPS: I'm not sure that we know it.

AC: I seem to have a copy...I think I have a copy of it some.. I'll have to dig for that.

DPS: We'd be grateful to have the details on that.

CAF: So we could find it, yeah.

DPS: So we could find it.

AC: I'll make a note of it and, if you don't hear from me, remind me again about looking for it. My recollection was that it was more like a pamphlet, not self-published, but not a major book publication.

DPS: That sounds like Alice's.

CAF: It is like Alice's but you have another one.

AC: It is OK. Maybe that's what I'm thinking of. That she had written his life story. It would make sense that this would be the one.

CAF: Yeah. It's a little pamphlet that she put together probably 10 years ago or so?

AC: Oh, OK. That could very well be it. Yeah, right.

DPS: Now we, when we were mentioning Alice Dadourian and her biography.. Alice died about a year and a half ago. And we talked with her not long before she died, and we found...we made a sort of distressing discovery, We learned that the materials that I guess you had sent after Frank Cooper died ended up at Caryl Haskins' home. And Alice Dadourian was his executor and she was sort of the lone person in charge of closing out the house that was going to be torn down. They established a park there. The house was...Anyway to make a long story short, most of the things in the house ended up...papers and so forth, ended up in the dumpster.

AC: Oh no!!

DPS: Yeah. Well it was a blow to us to learn that. But that seems to have been what happened to the things that you sent earlier. So we have to level with you.

AC: I don't know what the break between what I have in the garage now and what I sent. I suspect that they were the older things I had sent, because they would have been obvious...they would be files that...out of his desk that would be relative to the Lab. But these boxes are labeled Lab in the garage. And I don't know whether they are...A this point I could dig them out and just open them and see what they are. I suspect they are going to be file folders. And the question is whether you'd like to either have them sent to you, or, if you're going to be making a trip to California sometime to a meeting, just stop by and take a quick look and you can make a decision at that point.

25:36

CAF: Well, I don't have any plans to go to California; you probably don't either.

DPS: Well, it's possible that I could do that in some months ahead.

AC: It's certainly easy to take them down to UPS and just ship them off to you.

DPS: Well, that might be the best thing. And, if it comes to that, we can send you an account number from the Haskins Labs to use.

AC: OK. It depends on whether you want to have the boxes or...I think at this point....I had been saving all this material for this type of event. So I will do either...Send them to you, hold them here, or just discard them. I think we've probably reached that point.

DPS: Well, they certainly shouldn't be discarded without our...

AC: Oh definitely, I wouldn't discard them having either...

DPS: Now is there a problem of actually getting those boxes down? It looked like they were on a high shelf and we didn't know what kind of physical shape you're in.

AC: Oh no, that's no problem. I can get them down easily. I just wanted to give you an idea of the fact that these things are long hidden away.

DPS: Yes.

AC: They were out of sight out of mind, off in a way back corner of the garage. So I can get them down easily. No problem.

DPS: So you sent a selection of things earlier that you thought would have been the most relev..most interesting, How did you make the selection, I guess that's the question?

AC: Well, I don't even recall...I don't recall what it...I'm not sure. I just don't have any memory of what was in those boxes. Because at that point I was settling his estate. I was just packing, getting out of his apartment, I was just packing everything up very quickly. And some of those boxes may also have come out of his storage that he may have put in his storage himself.

Because when he moved out...when I moved him out of his apartment after he passed, then he had a storage area that I moved, which also contained boxes that may also have been from the Lab. So I'm not really sure I even looked in the boxes.

DPS: I see. OK. Well, he was a well-organized man, and I suspect that...

AC: Yes, he was.

DPS:...anything that he saved deserved to be saved.

CAF: Well, the only thing that we might say is that, if there are lots of reprints in there of his stuff, or just reprints that he collected, we probably wouldn't want you to bother sending those, right?

DPS: Yes.

CAF: But if there are letters, correspondence or that kind of thing.

DPS: That's good. That's right, Carol. That's absolutely right. It's things that...We don't need reprints.

AC: Right, right. I think this is where the decisions of what...This is probably why a lot of that stuff went into the dumpster when Alice was there...because you have to...there may be a real gem in there, but most of it looks like [...]

DPS: Well, Alice was desperate, and she had no help. The way she explained it, she had three days in which everything had to go.

CAF: And she filled 17 dumpsters full of stuff. That's how much stuff she had to get rid of.

AC: Oh my goodness.

CAF: So I don't think she was at all careful in terms of what might be valuable and what might not be.

DPS: It's a tragedy because, of course, Carol or I, or others from the [Lab] would have come to the help her...

CAF: Had she asked.

DPS: Had she asked. But she didn't do that.

CAF: But anyway. That's in the past.

AC: [...], wasn't it.

DPS: So, look Alan, I think it would be great if you could look at them and safely say that reprints we don't want, but correspondence and other nonpublished documents relating to the Lab or, particularly to the early history of the Lab, we would be interested in. And so could be ask you to do a sort of preliminary look and then contact us again and we can talk about it?

AC: It would be easy to pull out reprints because those are straightforward.

DPS: But look, there's absolutely no rush about this. Do it at your convenience, you know. We're not pressing for this.

END OF FIRST SOUND FILE

AC: That I will do and the easiest way to do this is first look in the boxes and see what's there and it may be obvious that...you can make decisions. Are you interested in things only before a certain time period so [unintelligible...]

CAF: I don't think so.

DPS. No, no.

CAF: No, he stepped down as President in 1975 and that's pretty far back. So...I mean anything that you have would probably be pretty useful.

AC: OK. And there are no reprints of older times that I might...you would want to have saved.

DPS: Well, yes I guess if they're...

CAF: From 1930's I guess...would say..

DPS: From 1930s and up. Well anything up to middle '40s would certainly be saved.

AC: OK, if I find anything, let's say, prior to 1950.

CAF: Yeah, and I guess another thing would be...We probably have access to any of his papers on the reading machine and on the kind of work that he turned to after World War II. It's the work that he did before that we don't know enough about.

AC: Got it. OK. So that carries us to about 1945, 46.

DPS: Yes, yes.

CAF: Yeah.

DPS: We think that that biological work just sort of stopped in the middle forties, but we don't really know. And we don't know if he and Caryl Haskins continued to collaborate scientifically after the war.

AC: Yeah, I...They certainly had carried on a good relationship all the way to...We actually visited Caryl Haskins at his house probably a couple months before he passed on. And he was in bad shape, but he was there and we just wanted to say our last words with him, and we did. And his estate by that time was in a state of...it was really just shutting down.

CAF: Yeah.

AC: Anyhow it was the passing of a great man.

DPS: Right. Was he still lucid at that point?

AC: He was lucid. He was in bed. He could not get up. But he recognized myself; I introduced my partner and we just chatted briefly and then he drifted back to sleep and...But he was lucid. Yes. No that was my impression. I don't know whether this is...that was all the time...Alice was there all the time. She was taking care of him, I believe.

CAF: Yeah.

DPS: I can think of only one more thing that I might want to ask you, Alan. You know that Frank was heavily involved in processing the Watergate tapes in 1973.

AC: mmhmm.

DPS: Did he talk about that at all?

AC: Well, he talked about it in the sense that: I'm doing some important things, and you have to be careful what you say and what you do at all times. Because he was himself under investing...under observation. And he felt very...after his experience with the McCarthy era, he was very sensitive to...when you get this close to power, you can't predict what's going to happen.

DPS: No.

AC: And so...But that's the only way he talked about it. He did not talk about it in terms of any of the technical side of it.

CAF: How did he know he was under observation?

AC: I think he felt...I think he felt that that was as part of the routine of the way in which national security is done.

CAF: Yeah.

AC: And so until you're at that level, and you really don't even think about it.

CAF: Right.

AC: And...I myself got into a situation in my professional career that came close to that, and then he was giving me the advice, and this is how I happened to...and that was because, after the collapse of the Soviet Union, I was leading the effort to use a Russian attack submarine to put a sonar system on to map the Arctic..floor of the Arctic Ocean. And so this was taking levels...going to very high levels in both the US and the Russian governments. And so, they were...he was warning me: When you get to these levels of power, watch your step.

CAF: Hah!

AC: And then he just related a couple of incidents that happened to him. And so, it's nothing surprising, but it is just something that you open the door to. It was just interesting of...He was very careful in his work and just really never wanted to talk about it afterwards. And I never

sure whether that was because even as he was getting older and here and talking about other things, the Watergate tapes he just didn't want to talk about.

DPS: Well, he was certainly was circumspect...

CAF: Discreet.

DPS: ...in the Laboratories. Discreet, yeah.

AC: mmhmm. Yeah, I think he had probably good reasons, that the long arm of the government continues to have a long memory too.

DPS: Yeah.

AC: So, in any case, I hope that some of this has been of help, and I'll be glad to go...

DPS: Well, it has. We're very grateful to you for letting us talk with you. You have given us some information that's good, valuable.

CAF: I have a completely unrelated question. Do you...Did he talk about...did your father talk about his childhood? To me, the contrast between him and Caryl Haskins was quite remarkable. If the US had an aristocracy, then Caryl Haskins was born into it. But your father was really a farm boy from Illinois, if I remember.

AC: That he was. Yes, he talked about it and he took us to visit the farm and his father deserted and became a druggist some place. And one of his relatives was a preacher that had a heart attack in the pulpit...And it was right into the heart of America. It was like...We even hated to sell the land eventually, his farmland, because it went back into the 1800s.

CAF: Wow.

AC: So, as you say, he came out of the...a self-made person, out of literally having nothing to doing this whereas Caryl Haskins did come from a very different background. It wasn't money; it was just the way in which you were born.

CAF: Right. There's a story in the oral history that I don't...You probably know. That your father took part in some kind of statewide that, if you got a high enough grade, you got all of your tuition paid to University of Illinois, maybe. And he got the highest score in the state of Illinois [in fact in his county]. But getting all the tuition wasn't enough money for him to actually go that year. And he went out and worked for a year and then took the test again and for a second time got the highest grade in the state of Illinois? Is that familiar to you?

AC: He never talked about that. He only talked about the effort it was to get to school to take those tests and having to drive through the mud and get the car and what it was like to live out in the woods and how hard he had to work to find books to read. That he just loved to read and read and read, because that's what he did. He couldn't do anything else. He wasn't actively working on a farm. He was with his mother on a farm. And he would spend all of his time reading. And so no one else had that opportunity, I think, in his area. And he made it happen.

CAF: Yeah. Good for him! Pretty amazing.

DPS: Was your mother from that area too?

AC: She was from Mattoon, Illinois from a family...Her grandmother came across...I'm sorry, her mother, my grandmother came across the plains right after the Civil War in a covered wagon and settled in Illinois and she had, my mother had, a total of 13 brothers and sisters...

CAF: Wow!

AC:...in the family. And it was two marriages of 7 and 8, or whatever the numbers...That doesn't add up to 13. But it was 13 total. And so they would have huge family reunions. We would...I would participate in the reunions in Illinois. And we'd go visit all the families. And most

everybody, 90% of the people stayed in Illinois. And they were the...She was the only one that really left and came back to the urban areas and went with my father and became...So it was a change of life for them for both of them.

DPS: Did he ever talk about how he met Caryl Haskins and their..

AC: No, he never did. He never did talk about how he met Caryl.

CAF: What I remember is that, Frank, I think was a grad student at MIT, was it? But working at GE in the summer, and Caryl was working at GE, and they commuted back and f..Caryl was going to Harvard, I think. And they were commuting back and forth to Cambridge.

DPS: Yeah, I think it's pretty clear that they met at GE. But he never talked...told you about the circumstances or anything.

AC: No, he didn't. Or if he did, it has long since passed.

CAF: Yeah. That would be great to know what their conversations were going back and forth to Schenectady or Cambridge because that must be sort of the context in which they hatched the idea of founding Haskins Laboratories and...They were very, I think, idealistic, ambitious guys. It's quite remarkable that they founded this independent lab.

AC: Well it was. He talked a lot about his high-energy physics and cage and big machine that they were developing. And his patent on some of the materials that he developed.

CAF: Hmm!

AC: [As...??] at GE. But never...It was just kind of like they were..As far as I know, Caryl and my father were colleagues. It's almost like fellow graduate students and then

CAF: Right.

DPS: Well, I think Caryl Haskins got some advice and maybe some material help too from Alfred Loomis.

AC: Oh, is that right?

DPS: That's nothing that you can enlighten us any more about?

AC: I'm afraid I can't, no. It goes off into a different realm.

DPS: Well, I can't think of anything else, can you Carol?

CAF: No, I think we've covered the ground.

AC: Good, good! Well if you do think of anything else, feel free to call anytime. I'm glad to talk about it.

DPS: Will you get in touch with us then when you have had a chance to look at the boxes and let us know what you find?

AC: OK. I surely will. It's good to talk to you and hear some of the stories from your perspective.

CAF: Well thanks so very much. We appreciate it.

AC: Nice to talk to you. Talk to you later on.

CAF:DPS: Bye

AC: Bye bye.