

**INTERVIEW WITH ROBERT CESS
DEPARTMENT OF MECHANICAL ENGINEERING**

September 21, 1989

Dr. Hartzell: An interview with Robert Cess at the Light Engineering Building in his office, Thursday, September 21. The questions are just to get the background of each individual, so do you want to let me have it.

Robert Cess: Okay. Number 1, my name is Robert Cess. I am split between the Mechanical Engineering Department and the Institute for Atmospheric Sciences, and my formal title is Leading Professor of Atmospheric Sciences.

Dr. Hartzell: Is the Atmospheric Sciences up in Albany or near Albany center?

Robert Cess: No, we're totally separate from that. We have an Institute for Atmospheric Sciences which encompasses three separate departments on this campus.

Dr. Hartzell: I see, all right. let me have that just briefly, who are they, which departments?

Robert Cess: Mechanical Engineering Department, Earth and Space Sciences Department, and the Department of Physics. What year? I arrived at Stony Brook July 1961, I was 28 years old. I came from North Carolina State University. I was an Associate Professor. Tom Irvine was primarily responsible for my coming to Stony Brook. I was interviewed by Tom Irvine and John Lee. Why did I come? I don't really remember now, that was a long time ago. My understanding of the purposes behind the creation of Stony Brook was to be a first class State University. My impressions of Stony Brook when I first came; it was absolutely chaotic. It was in a temporary campus in Oyster Bay. My office was in part of a former servants quarters that was attached to a large garage and was the first engineering lab.

Dr. Hartzell: That was the first engineering lab?

Robert Cess: That was the first engineering laboratory.

Dr. Hartzell: Speak a little more slowly and a little louder so that I get it on here.

Robert Cess: All right. The laboratory facility was a converted garage at Oyster Bay. Shortly after I came, one of the people who had recruited me, John Lee, who was President, was fired as President. The future of the whole institution seemed to be somewhat shaky at that time. The following year the campus was shifted to Stony Brook. My first office was in the Humanities Building in a group of offices adjacent to Anthropology. The man in the next office from me was a professor of Anthropology.

Dr. Hartzell: Who was he?

Robert Cess: I'm trying to remember now; he left many years ago, Benjamin, the first name was Benjamin, that's as far as my memory banks, I don't recall. The engineering labs were over in Old Chemistry Building. Then the following year we moved into Old Engineering; about three years later my office shifted to Light Engineering; a year later to Heavy Engineering; and then perhaps a decade later back to this office in Light Engineering.

Dr. Hartzell: Did you have anything to do with the design of Old Engineering?

Robert Cess: No, I am not a laboratory person so I had no input into any laboratory designs at all. What events, what persons, what experiences stand out in your mind? This is a twenty-eight year span. I can remember a fistfight between an instructor of mathematics and a full professor of mathematics, that was a rather dramatic event, that resulted subsequently in a lawsuit that went on for several years. Walter Bradfield was on a faculty committee that rendered some decision, and that committee was subsequently sued, and I think that the suit went on for eight or nine years. That's a hard question

Dr. Hartzell: Which one are you on?

Robert Cess: Number 9. All right, number 10, what was my understanding of my place in the future of Stony Brook? Why do I think I was appointed? I was working in a particular area that was a growing area at that time in engineering

Dr. Hartzell: What area was it?

Robert Cess: Heat transfer.

Dr. Hartzell: You and Tom

Robert Cess: Were in the same area. Back about 1970 I totally changed fields, I'm now with global warming basically. What expectations did you have when you came? Well, the expectations were that this was to become a major, thriving, State University.

Dr. Hartzell: Don't let your voice drop.

Robert Cess: All right, yes.

Dr. Hartzell: Keep it up. A major

Robert Cess: Thriving State University. How have these expectations worked out both personally and for the institution? I think on the whole very well. I think Stony Brook has not achieved quite what we had expected of it, but it has come reasonably close. Personally, well, I've turned down chaired professorships at some very good universities to stay here.

Dr. Hartzell: I'm sure that the recorder will not pick up what you are saying, you've turned down what professorship?

Robert Cess: Chaired professorships at some very good universities.

Dr. Hartzell: I see.

Robert Cess: To stay here, so I think personally I feel that the direction of the University has worked out very well as far as I personally am concerned. Where your activities confined to the Stony Brook campus?

Dr. Hartzell: Before you answer that one, with whom do you work or have you worked here on the campus, what individuals have you worked with?

Robert Cess: At the moment, most of my work is involved with people off campus. I am involved with -- I'll just go through a brief list -- I'm involved with the National Aeronautics and Space Administration's Earth Radiation Budget Experiment, and that is a project that started in 1980 and will run through 1993. These involve instruments on three satellites and the interpretation of that data for research purposes; and this involves a science team that encompasses individuals from three countries and from a number of universities

Dr. Hartzell: What are the countries?

Robert Cess: The countries are Germany, France and the United States. The science team for that project is basically the Board of Directors for that research effort. And I am also involved in what will be the next phase of that, which has acronym CERES

Dr. Hartzell: What kind of CERES?

Robert Cess: The acronym is CERES.

Dr. Hartzell: Oh, the acronym is CERES.

Robert Cess: CERES, it stands for clouds and the earth's radiant energy system, and this again involves a science team from a number of countries and a number of institutions and research laboratories. This is a project that began about six months ago and is scheduled to go for twenty years; it will either carry me through to retirement or through to the grave. So that's another situation where we work with a large number of people from a large number of institutions.

Dr. Hartzell: Where did you get your Ph. D.?

Robert Cess: University of Pittsburgh.

Dr. Hartzell: Pittsburgh, uh, huh.

Robert Cess: And the final one that involves a large number of individuals also is a Department of Energy project that is an inner comparison of computer models of the global climate system. The emphasis here is understanding global warming as could be induced by the increase in greenhouse gases.

Dr. Hartzell: Greenhouse what?

Robert Cess: Greenhouse gases.

Dr. Hartzell: Gases.

Robert Cess: Carbon dioxide and

Dr. Hartzell: I'm thinking of secretary who hasn't the foggiest notion of what you are talking about trying to pick this up, you see.

Robert Cess: I see, sure, sure. But the main thrust here is that this involves twenty people from seven different countries trying to understand how to mathematically model

future climate using a computer. So most of my interactions have been with people often off the campus. All right, that brings us down to question number 13, which, were your activities confined to Stony Brook? Certainly not, they've been spread around considerably.

Dr. Hartzell: Did you deal at all with the central administration in Albany?

Robert Cess: I have never in my slightly more than twenty-eight years here ever had anything to do with the central administration in Albany.

Dr. Hartzell: So your connections are within your discipline or within certain

Robert Cess: Within my research discipline, yes.

Dr. Hartzell: That's the way NASA and the Department of Energy, how about the AEC?

Robert Cess: That is the Department of Energy, the old Atomic Energy Commission then went through several different permutations and currently is the Department of Energy.

Dr. Hartzell: I worked at Brookhaven for five years in the Directors office. What do you feel you have accomplished, this is 14.

Robert Cess: What do I feel I have accomplished at Stony Brook

Dr. Hartzell: Let's talk first about the department, engineering in the early days and so on.

Robert Cess: All right, well, you have to bear in mind that my career goes in two segments, and that I haven't done any engineering since the late sixties, so before the late sixties I had been doing research in heat transfer that had been funded by the National Science Foundation. And toward the late sixties I got interested in atmospheric studies and that's what I've been involved with ever since.

Dr. Hartzell: I see. Well, there's some heat transfer implications in what you are doing now?

Robert Cess: Well, certainly, heat transfer in the atmosphere, yes.

Dr. Hartzell: In the atmosphere, okay. How did you get into heat transfer in the first place?

Robert Cess: Well, that goes way back to when I was undergraduate, a professor that was doing research in heat transfer got me interested in it, and that's what I did in my graduate studies.

Dr. Hartzell: Well, Tom came to Raleigh from

Robert Cess: University of Minnesota.

Dr. Hartzell: The University of Minnesota, and he got into heat transfer

Robert Cess: Again, back as a graduate student.

Dr. Hartzell: Back as a graduate student. Okay. What do you think you have accomplished, within the department here you have this Institute

Robert Cess: Well, interdepartmental Institute, yes.

Dr. Hartzell: Interdepartmental Institute. When was it set up.

Robert Cess: That goes through two stages also. The Institute that we have at the present is about a year and a half old. The predecessor to that was called the Laboratory for Planetary Atmospheres Research, that was established in 1974 as simply a device since people doing atmospheric research on campus are spread in different departments, that was sort of to give us a bit of a home base, and from that, certainly with Jerry Schubel's pushing and urging and help -- I would have to call Jerry Schubel one of the important aspects on this campus, very definitely, that man has more enthusiasm and drive, I think he has a very overactive thyroid probably.

Dr. Hartzell: Well, he puts it to good use, he has a good imagination for other people's problems than simply the Marine Sciences.

Robert Cess: Right. He was the one that basically urged us to get the Institute of Atmospheric Sciences, put in a proposal for that Institute, which we did do, and it has subsequently been funded. We

Dr. Hartzell: Do you work at all with Toby Owen?

Robert Cess: Yes, in fact Toby and I have in the past published several papers together. We just brought in a very good man, whose appointment is in the Institute, he was formerly the Director of a large division at NASA's Goddard Space Flight Center. He had 300 people under him.

Dr. Hartzell: What is his name?

Robert Cess: Marvin Geller, he came here in July, an exceptional individual. And we have two more positions within the Institute, so we are really a growing enterprise. So I think my main accomplishment at Stony Brook as far as the University is concerned, not personal medals or things like that, I would say getting atmospheric sciences as a growing enterprise on campus and the primary thrust of the Institute is toward global change, understanding of the greenhouse effect, and I think the timing has been perfect here, this is a very large international issue.

Dr. Hartzell: Yes, right. You've had good support then from the federal government?

Robert Cess: We have very good support from the federal government. This whole operation here is basically funded by the government, secretary; we have our own dedicated computer across the hall; we have

Dr. Hartzell: By dedicated computer, you mean one that you use only, is that it?

Robert Cess: Yes, my group. We were just awarded last week 2,000 hours of super computer time, that is a lot of computer time, that is through a Department of Energy computer, so we've had very good support from the government.

Dr. Hartzell: Is there any parallel to what is developing on earth to be found anywhere else in the solar system?

Robert Cess: Yes, and no. There are certain analogs you can draw. People like to point out the fact that, I use Venus as a greenhouse example because Venus has a very dense atmosphere composed primarily of carbon dioxide, and the surface temperature of Venus exceeds the melting point of lead in Fahrenheit, about 750 centigrade, I'll attempt

to work that over, about 900 degrees Fahrenheit; and that very high surface temperature is due to the fact that you have this enormous greenhouse atmosphere.

Dr. Hartzell: Okay, all right. You mention, under 15, you mentioned Jerry Schubel, what about people earlier, John Toll?

Robert Cess: I think John Toll did a very good job of going to Albany and getting buildings, and that's what you need during the growing days certainly of the University.

Dr. Hartzell: Was he responsible primarily for this Light Engineering Building?

Robert Cess: Oh, that I have no idea, I don't who really was responsible for getting these buildings, other than whoever was responsible didn't give enough buildings because we have a real crisis in office space.

Dr. Hartzell: Well, it was awfully hard to find people in the central office and individuals among the Trustees who had any idea whatsoever of what a large public university would require.

Robert Cess: That's right.

Dr. Hartzell: We were really starting from scratch. California had had Berkeley for 75 or 100 years before it started to develop the other campuses.

Robert Cess: I could never figure out in the Old Engineering Building all the office doors had little square windows in them as though they were designed for an observer to come along and see if you were really in your office. It always sort of reminded me of a prison door with a peephole in it.

Dr. Hartzell: To get away from your work and the department, what about life on the campus, faculty relations and the quality of students, the quality of your associates, faculty.

Robert Cess: Well, we have some extremely good faculty say in the atmospheric science program, exceptional people, one woman down the hall with a Ph. D. from Harvard a few years ago, and a gentleman just on the other side of the secretary's office, Sultan Hameed, just a first-class scientist.

Dr. Hartzell: What's his name?

Robert Cess: Sultan Hameed. We have faculty of very high quality. The graduate students that we have, we have no problem attracting good quality graduate students. We do see a deterioration in the quality of undergraduate students, but I think that's a national problem that goes down to the whole, the bottom of the educational process.

Dr. Hartzell: Do you feel the need personally of a faculty club or any associations with other faculty members than those with whom you do associate?

Robert Cess: That is one of the problems on campus. I don't think there is much cross-fertilization. Everybody stays in their own little group. I think it's a shame we don't have a nice faculty club.

Dr. Hartzell: Would you use it?

Robert Cess: I think I probably would if it existed.

Dr. Hartzell: With whom do you work in Physics, do you work with anybody in Physics?

Robert Cess: Well, Bob DeZafra is the person over there, and we have a lot of interactions; we don't work specifically on the same problems.

Dr. Hartzell: I see. Do you have any idea why Lee was fired?

Robert Cess: Oh, if memory serves me correct, you're going back in ancient history. From what I can dredge out of my memory banks, he fired two deans in one day, and that was in November.

Dr. Hartzell: Austill and Olsen.

Robert Cess: Olsen I remember, the other one I don't.

Dr. Hartzell: Alan Austill was Dean of Students.

Robert Cess: And I believe he did in a few department chairmen at the same time, but that may be faulty memory, but I remember the two deans, and then there was all sorts of commotion on campus, there were students striking, and then shortly thereafter Lee was relieved of the presidency.

Dr. Hartzell: Do you remember him personally, what kind of a person he was?

Robert Cess: Oh, yes, he was my former department chairman at North Carolina State University.

Dr. Hartzell: At North Carolina, I see.

Robert Cess: He was a man who liked to get things done. Some of the things he did at North Carolina State were not legal, he got them done. He viewed bureaucracy as a challenge.

Dr. Hartzell: I'm afraid it still is.

Robert Cess: What he did at North Carolina State, there was an old, decrepit laboratory that contained lots of old diesel engines, and it was completely worthless to the University. He sold all the contents of that laboratory to a scrap metal dealer, totally bypassed the University, and then took the funds he got from the scrap metal dealer, which he received as a check to himself, and then opened up a fund within the department to support research by junior faculty members. But of course if the state auditors had ever learned about that, there would have been a price to pay, certainly a shenanigan of that sort.

Dr. Hartzell: Did you have any dealings with anybody else on the campus in the administration, somebody like Alec Pond, for instance?

Robert Cess: Oh, only once, really. I had to get a proposal in; on that particular day the budget had been changed so the cover sheet had to be changed to reflect the new dollar amount. The only two people on campus who were authorized to sign off on a proposal at that time were John Toll and Bob Schneider, and they were both out of town, and Alec Pond, I think himself or his secretary, used Snopake to change the budget on the front sheet that still had Toll's or Schneider's signature on it, and that way we were, again it was not totally legal, but it was a way of getting a proposal out, and simply something had to be done, that was the only direct contact that I had.

Dr. Hartzell: Were your students in the early days reasonably good as undergraduates?

Robert Cess: Yes, I think we had some very good undergraduates.

Dr. Hartzell: Have they gone on in science?

Robert Cess: Oh, I can think of one that is now a very well-known scientist in atmospheric sciences.

Dr. Hartzell: What's his name?

Robert Cess: Richard Rotuno.

Dr. Hartzell: Do you know where he is?

Robert Cess: He's at the National Center for Atmospheric Research in Boulder, Colorado. He received his undergraduate degree here. He is one of these late bloomers, very poor grades until he was a senior, then he did very well after that.

Dr. Hartzell: Do you remember anything about the early days that I haven't asked you? You mentioned the development of the logo.

Robert Cess: You might want to touch base with Tom Irvine, since what I'm telling you really I got from Tom Irvine. he must have passed it on to whoever was doing the design. Early days, they were hectic. I can remember commuting in to Oyster Bay. We had bought an old Buick as a commuter car, and I was the last one down the line so it always ended up in my driveway.

Dr. Hartzell: You lived out here and commuted back there?

Robert Cess: To Oyster Bay, I lived in Port Jefferson then. Reverse gear had long gone in this car, so you could never back it up. Of course there was a slope to my driveway so I would bring it in the evening, the next morning I would just let it roll out of the driveway, but you had to be very careful never to park it anyplace where you had to back up. But getting squared away on the campus here, everything was just hectic those first few years; trying to get library acquisitions, that was a big thing, you know. We moved into a campus that did not have an active library, and we were always going for interlibrary loan when you needed an article. But the people in the library in those days did an excellent job of ordering journals as fast as they could, getting back copies of journals and bringing things up to speed as rapidly as they could.

Dr. Hartzell: That was Donald Cook and Reuben Weltsch particularly?

Robert Cess: Right.

Dr. Hartzell: Anybody else you remember?

Robert Cess: There was someone else who was very good whose name has slipped now, he had once worked in the United Nations, that's all I can remember.

Dr. Hartzell: Was it Gerhard Vasco?

Robert Cess: I don't know. And then he came to Stony Brook, and then he left.

Dr. Hartzell: I see. Money was relatively free in the beginning.

Robert Cess: In the beginning, oh, yes, up until the early seventies, there was ample travel money, money for research projects. Then the crunch of the seventies occurred.

Dr. Hartzell: And I think after Rockefeller the Governors got into economic trouble felt free to cut education.

Robert Cess: That seemed to be the case, right.

Dr. Hartzell: Do you have any connection with the atmospheric center upstate?

Robert Cess: Very little, because we do totally different things, absolutely different things.

Dr. Hartzell: What are they doing?

Robert Cess: They're emphasis to a large part is called synoptic meteorology, weather forecasting, they have a big effort on that; they have an effort on things like fog dispersion, doing research on how to get rid of fog over airports; they are heavily involved with atmospheric electricity and some cloud microphysical studies. Our efforts here are more in atmospheric radiation transfer, climate studies, ozone depletion

Dr. Hartzell: That's DeZafra's field.

Robert Cess: DeZafra's field, right.

Dr. Hartzell: Well, I think that's about it. I don't think I had any occasion to deal with you people, really.

Robert Cess: No.

Dr. Hartzell: When I was running the place, Tom was the one at that time who worked pretty much by himself.

Robert Cess: I was briefly an acting chairman, probably the world's worst acting chairman in history, that was 1965 when John Toll and Bentley Glass first came. And I managed to miss every reception or meeting in which the department chairmen were meeting the two of them. And I had gone the entire academic year and had never met either one. And then there was a budget review meeting for the department, and I had, their offices were then in the library, and I had to go and have this budget review meeting, and I thought to myself, I just can't walk in and introduce myself, not in May, when they came in September or August. So I just walked in and waved and said, hi, good to see you again. And you could see both of them trying to place the face and having great difficulty in doing that.

Dr. Hartzell: Well, I think Johnny's bringing in Bentley Glass and Frank Yang

Robert Cess: Those were two key appointments.

Dr. Hartzell: All right, well, Bob, thanks very much, I appreciate it. That's good. Some day we'll have a history of the University, at least of the early days.

[end of interview]