

Oral History of
Marguerette S. Cunningham Schultz

Interview conducted by Laura Harkewicz

12 June 2007

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ABSTRACT:

Marguerette S. Cunningham Schultz was interviewed in her home in Oceanside, California on June 12, 2007. Schultz was born in San Diego, California in 1924. During World War II, while her husband was stationed at Fort Ord, California, she drove trucks for the Air Force at Ellington Air Force Base located near Houston, Texas and lived with her husband's family. She came to Scripps in 1951 and worked as an engineering aide in the Bathythermograph (BT) Unit for twenty-five years until the BT work was moved to a facility outside of Scripps. She worked in the Climate Research Group until her retirement from full-time employment in 1989. Subsequently, she worked part-time for the Climate Research Group, as needed. The interview stressed Schultz's work in the BT Unit including the concept, proposed by historians, that bathythermograph data processing was considered "women's work" with more significance to Navy patronage than basic oceanographic science. We also discussed her work with the Climate Research Group at Scripps, which also involved data processing and graphing. In addition, Schultz discussed some of the interactions and socializing she experienced at Scripps during her over thirty-eight years of employment at the Institution.

INTERVIEW HISTORY:

The interview took place on a warm summer morning at the home of Marguerette Cunningham Schultz and her daughter, Jeanette V. Cunningham, in Oceanside, California. Schultz's daughter sat with us throughout the interview. She occasionally contributed to the discussion. We were also joined by their bulldog, Gina, named for the Italian actress, Gina Lollobrigida. We talked for approximately one and one-half hours. The interview was paused once while Schultz got a drink of water. There are a variety of background noises that may be heard on the recording including: children playing, wind chimes, and a clock chiming.

Laura Harkewicz

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July 25, 2007



The Bathythermograph Unit at a party for Lt. Amnuay Srivirojna of the Royal Thai Navy, 1959. Marguerette Schultz is the woman in the back wearing glasses. Scripps Institution of Oceanography Archives, UC San Diego Libraries.

INTERVIEW WITH MARGUERETTE SCHULTZ: 12 JUNE 2007

Harkewicz: It is June 12, 2007. I'm in the home of Marguerette Schultz and her daughter, Jeanette Cunningham. We are in Oceanside, California.

Schultz: Right.

Harkewicz: So, good morning, Mrs. Schultz.

Schultz: Good morning to you.

Harkewicz: So, the first thing I want to do is ask you if you can tell what year you were born and a little bit about your childhood.

Schultz: That is not fair. *[Laughter]*

Harkewicz: Sorry.

Schultz: Nineteen twenty-four. Born in San Diego. Mother taught school in San Diego for forty-two years. My father was a doctor. He died 1953. That was two years after I started working at Scripps.

Harkewicz: So, you've lived in San Diego your whole life, then?

Schultz: Right.

Harkewicz: Okay.

Schultz: Well, most of it.

Harkewicz: In this area or in more of the city proper?

Schultz: More of the San Diego area.

Harkewicz: Okay. I wondered how you came to Scripps?

Schultz: I saw an ad in the paper for somebody to do data work and I applied for the job, which I didn't get.

Harkewicz: Hmm. Okay.

Schultz: It was with Walter Munk,¹ and he hired someone else purely on the basis that they could type and I couldn't. *[Laughter]*

¹ Walter Heinrich Munk (1917-), professor of geophysics at Scripps Institution of Oceanography.

- Harkewicz:** Well, I guess if that's what you need, that's what you need.
- Schultz:** Everything else being equal, that was the deciding factor.
- Harkewicz:** Okay. So then, how did you end up getting the job that you got there?
- Schultz:** A week later I got a call from the Oceanography Department. John Cochrane.² Walter Munk had recommended me on the basis of his interviews when the position that I filled became available, and I went in for an interview and was hired.
- Harkewicz:** And that was 1955, then?
- Schultz:** Nineteen fifty-one.
- Harkewicz:** Fifty-one. I'm sorry. Okay.
- Schultz:** January.
- Harkewicz:** I added on instead of subtracting.
- Schultz:** I started work January 8, 1951.
- Harkewicz:** Okay. Boy, you remember the date and everything? *[Laugh]*
- Schultz:** Yeah.
- Harkewicz:** So were you hired into the Bathythermograph Unit, then?
- Schultz:** Yes.
- Harkewicz:** Okay. And, what kind of training did you have prior to that? I mean, what kind of education or background did you have?
- Schultz:** Everything had been in math and science. When I hired on, it was basically on the basis of the math ability, but I did a lot of photo work and, well, for him that was basically what I did, that and transcription of data.
- Harkewicz:** Was your training in high school or did you have some college education?
- Schultz:** One year of college.³

² John Douglas Cochrane (1920-1997) received an MS in oceanography from the University of California in 1948 for his work at Scripps Institution of Oceanography. He remained at Scripps as a research assistant until 1956, when he joined the faculty at Texas A&M University.

³ Marguerette Schultz attended Mesa Junior College and majored in math.

Harkewicz: One year of college. Okay, I'll put it down. And had you had previous work experience prior to working at Scripps?

Schultz: I drove trucks. *[Laugh]*

Harkewicz: Drove trucks? Really? *[Laugh]* Big trucks, like big rig?

Schultz: Semis.

Harkewicz: Really? *[Laugh]*

Cunningham: Eighteen wheelers.

Harkewicz: That must have been rather unusual, at that time, for a woman to be driving a truck?

Schultz: Yes. Not too many of them did at that time. But I was hired by the Air Force to drive staff cars for officers from Convair. And when my husband⁴—I got married in the meantime and my husband was based at Fort Ord, so I went up there to live, and they had openings for truck drivers. So I started with smaller trucks, one-half ton to two and a half ton vehicles, and when I went to Texas for a while I worked at Ellington Air Force Base. They needed semi drivers and they hired me on.

Harkewicz: So is this during the war, then?

Schultz: Yeah.

Harkewicz: Okay, so that makes sense, when women had a lot of odd jobs.

Schultz: And it was really strange because they had women Air Force personnel who were drivers, but they didn't want to drive trucks. They wanted to drive staff cars. So they hired civilian women.

Harkewicz: Hmm. But this was for military?

Schultz: It was for the military.

Harkewicz: I see. Well, very interesting. So how did you end up coming back to San Diego, then?

Schultz: He was sent overseas and I came home.

Harkewicz: I see.

⁴ Marguerette Schultz married Roy A. Schultz (1915-1976). Mr. Schultz worked as a millwright at Convair from 1935 to 1973.

- Schultz:** I didn't want to live any longer with his folks. *[Laugh]*
- Harkewicz:** That makes sense.
- Schultz:** I came home.
- Harkewicz:** That makes sense.
- Schultz:** It was more pleasant for me, and that's when I had to get a different kind of work.
- Harkewicz:** Uhm-hmm. Okay.
- Schultz:** I didn't really want to be a truck driver all my life. *[Laugh]*
- Harkewicz:** Yeah. I can understand that.
- Schultz:** That was just a convenience.
- Harkewicz:** Uh huh. So can you tell me a little bit about your job as a—in the BT Unit?
- Schultz:** The oceanographic or temperature depth data, at that time, was done by smoked slides and an instrument that was dropped in the ocean, and it made a trace on the slide. And each instrument had a blank graph that went with that particular instrument. So the temperatures and depths could be read by overlaying the two end pieces. And what we did originally was read the depth and compared our temperatures, and compared them to reference temperatures that were taken by thermometer and then we could adjust the placement of the trace that was on the slide by photography. We could adjust it by a number of ways, but we had to make them meet, because each instrument had a certain amount of error.
- Harkewicz:** Okay. So you had to calibrate them, each instrument?
- Schultz:** So we—yeah. We calibrated each trace.
- Harkewicz:** I see.
- Schultz:** Once we got the proper calibration then we photographed them and made prints and transcribed the data onto the back of the prints.
- Harkewicz:** Hmm. Sounds very complicated.
- Schultz:** It was a time consuming, tedious job, which they no longer use. They've developed a lot of things since then. *[Laugh]*

- Harkewicz:** Well, maybe we can talk about that a little bit later? So now if I'm understanding you—the instrument and the slides, did they both have to be, say, shipped in at the same time, then, or did you get a lot of slides from one instrument?
- Schultz:** We had a blank graph for each instrument. And when they'd start using a new instrument we'd get a new graph. And each slide, each trace from that instrument, was then corrected by the same amount.
- Harkewicz:** I see.
- Schultz:** That's why we had to read every trace, originally, against its reference temperature so we could get an average of the error. And then we could set it and photograph all of the traces against the blank.
- Harkewicz:** Okay. So how long would that whole process take, normally, for
- Schultz:** It'd depend on how many slides they sent in. They would go out on a ship and they'd take maybe fifty, sixty slides, drops at various positions, and then you could follow the path of the ship and see what was happening.
- Harkewicz:** And then they would bring them all back and you would do all of the . . .
- Schultz:** Yeah.
- Harkewicz:** I see. Would one person normally do the job from the beginning to the end or did you have sort of like an assembly line and different people would do different steps?
- Schultz:** Either way. It didn't make any difference. We were all supposed to be able to do any of the jobs involved. But there was one woman who did all of the developing, or most of it. We could all do it, but her primary job was the developing of the prints. The rest of us pretty much floated around doing whatever, whichever thing needed to be done.
- Harkewicz:** Okay. So what happened when you completed your job? Then what happened to the photographs?
- Schultz:** They got sent to the . . .
- Cunningham:** Woods Hole?
- Schultz:** Washington. Not actually Washington, but Virginia, to the Oceanographic Center.

- Harkewicz:** All right. So it was for the Navy, then?
- Schultz:** It was for the Navy, yeah.
- Harkewicz:** Okay. So Margaret Robinson⁵ was your supervisor, wasn't she?
- Schultz:** Later.
- Harkewicz:** Later? Okay.
- Schultz:** John Cochrane was when I first started.
- Harkewicz:** John Cochrane? Okay.
- Schultz:** And he is now with University of Texas at College Station, Texas.
- Harkewicz:** Okay. So you were hired in to work with him, then?
- Schultz:** Uhm-hmm.
- Harkewicz:** Okay. When did you start working with Margaret Robinson, then?
- Schultz:** When John left Scripps, and I don't remember when that was.
- Harkewicz:** Was she . . .
- Schultz:** She took over the job of supervisor.
- Harkewicz:** Okay. Did she already have her masters degree, or a doctorate at that time? Do you know?
- Schultz:** I believe so. Yeah.
- Harkewicz:** What was it like? Was there a change in the job at all between them?
- Schultz:** No. We still all did what we were supposed to do. *[Laugh]*
- Harkewicz:** So you didn't notice that there was any . . .
- Schultz:** No.

⁵ Margaret King Robinson (1906-2006) received an AB in French literature from the University of Utah in 1928 and an MS in oceanography from the University of California for work she did at Scripps in 1951. She joined Scripps in 1946 as a clerk and advanced to oceanographer and head of the Bathythermograph Unit. She left Scripps in 1974 and became vice president of Compass Systems, an oceanographic firm

- Harkewicz:** Was it wasn't any different working for a woman than it was working for a man?
- Schultz:** Not really. She was a very scientific woman.
- Harkewicz:** Uhm-hmm. Okay. "Very scientific," *[laugh]* whatever that means? Actually, I have a photograph here⁶ and I don't know if you might recognize any of these people. There weren't too many photographs even of your group that I could pick out.
- Schultz:** Uhm . . .
- Harkewicz:** Actually, I wondered if you were in there at all?
- Schultz:** Right there.
- Harkewicz:** Oh, okay.
- Schultz:** There's Margaret. That's Margaret Robinson.
- Harkewicz:** All right. So, you're the person with the glasses?
- Schultz:** I remember some of these people but I don't remember their names.
- Harkewicz:** Well, that's okay. At least I knew you're in the picture, because I wanted to have a picture of you with the interview. Do you remember what the—now, this was supposed to be someone from the Thai Navy, and I don't know if I could ever pronounce his name right. It's Amnuay Srivirojna. Please excuse me, Thai people. Do you have any idea why that was just a significant event that they have this photograph saved? *[Laugh]* I guess he was leaving, because there's a cake. For those of you who are listening to this discussion. There's a cake that says something like "Congratulations," or something like that.
- Schultz:** "Best Wishes."
- Harkewicz:** "Best Wishes."
- Schultz:** "From your Scripps Friends."
- Harkewicz:** Did you have a lot of people come and visit?
- Schultz:** No. Not a whole lot. We had more after we moved up to Sverdrup Hall.
- Harkewicz:** Where were you located originally, then?

⁶ See photograph on page 4.

- Schultz:** T-2, which is no longer in existence.⁷
- Harkewicz:** But is it up where the other T houses are?
- Schultz:** No.
- Harkewicz:** No?
- Schultz:** It was down actually where the Scripps director's building is now.
- Harkewicz:** Yeah. They just knocked down one of those Surf—yeah.
- Schultz:** Oh, did they take out Surfside?⁸
- Harkewicz:** Yeah, they took out Surfside because they're building some big conference center there now.
- Schultz:** Oh, for goodness sake.
- Harkewicz:** Yeah, it was just about a month or so.
- Schultz:** And when we left there we moved into T-28. I don't know if it's still there or not. It was right, just immediately north of T-29.⁹ And from there we moved down to Sverdrup Hall. No, we didn't. We moved to Ritter Hall. *[Laugh]*
- Harkewicz:** You're moving all over the place.
- Schultz:** Which, I'm not sure even . . .
- Cunningham:** You worked on Point Loma for a while.
- Harkewicz:** Did you work down for the, at NEL,¹⁰ then?
- Schultz:** Yeah. We did.
- Harkewicz:** You worked down at the Marine . . .
- Schultz:** I'd forgotten about that.

⁷ Cottage T-2 was built around 1913 to house Scripps staff, but the cottages ceased to be residences by the end of the 1950s and were used for offices.

⁸ Surfside was a cottage on the Scripps campus used for student recreation from 1968-2007. The Robert Paine Scripps Forum conference center is currently under construction.

⁹ Cottage T-28 is no longer standing, but T-29, the Martin Johnson House, has been renovated and is used for special events.

¹⁰ US Naval Electronics Laboratory.

- Harkewicz:** Physics Lab?
- Schultz:** At Point Loma. Hmm.
- Harkewicz:** And what was the reasoning that you were down there? Do you know?
- Schultz:** They needed room for us somewhere.
- Harkewicz:** Okay. *[Laugh]* That makes sense.
- Schultz:** Things got, things get kind of—somebody else needs the space for some reason and—there’s a lot of that goes on. *[Laugh]*
- Harkewicz:** Yeah. Well, I just was wondering if you needed to be closer to the Naval . . .
- Schultz:** No. Hmm-uhm. No.
- Harkewicz:** Sources or whatever?
- Schultz:** It had nothing to do with that at all?
- Harkewicz:** I just wondered how scientists interacted with you?
- Schultz:** Not a whole lot.
- Harkewicz:** You were pretty self-contained then, at that point?
- Schultz:** Charles Cox was one that was in the building with us.¹¹ And . . . no. We were sort of self-contained.
- Harkewicz:** Okay. All right.
- Schultz:** And I think, I’ve found that a lot of the departments are more or less like that. They’re so, they’re involved with themselves, and they really don’t seem to interact that much with other people.
- Harkewicz:** Did you find that anybody specifically at Scripps was interested in your results? Or, I mean, did you just send them off to the Navy somehow or other?
- Schultz:** We just sent them off to the Navy.
- Harkewicz:** All right.

¹¹ Charles Shipley (“Chip”) Cox (1922-) came to Scripps in 1954 as a research oceanographer and served as professor of oceanography from 1960 until his retirement in 1991. He chaired the Ocean Research Division.

- Schultz:** And we kept all the slides for years, and finally the Navy decided they wanted them all. So we had to box them all up and ship them off.
- Harkewicz:** Back out to Virginia again, then, you said?
- Schultz:** Uhm-hmm.
- Harkewicz:** Okay. Did you feel at that time any discrimination, as a woman working at Scripps?
- Schultz:** No. I have never felt any discrimination in any of the jobs that I've had.
- Harkewicz:** Okay. But let me see. How do I want to ask you this? You know, some, historians have written about the fact that the work that you did with the BT Unit was valuable but it was only done by women and that that might suggest that it wasn't as important as some other work.¹² And I wondered if you ever got that impression. Did it seem like it was important work to you at the time?
- Schultz:** It did to me. Especially after my son went into the Navy and was a sonar man, and having been around when I was doing the work he found that it was extremely important.¹³ It was critical to his job in the Navy.
- Harkewicz:** Uhm-hmm. Okay. I guess what I'm asking though, really, is did you feel like Scripps thought it was important, people from Scripps itself?
- Schultz:** No less than any other scientific research.
- Harkewicz:** Okay.
- Schultz:** They all have their own place.
- Harkewicz:** Okay. And so you never felt like it was [*laugh*] sort of "women's work," so to speak, or anything?
- Schultz:** Never did.
- Harkewicz:** Well, that's great.
- Schultz:** In fact, there was so much stress placed on the accuracy of the work, that it made it seem even more important.

¹² For a historical analysis of the Scripps' BT Unit see, Naomi Oreskes, "Laissez-tomber: Military Patronage and Women's Work in Mid-20th Century Oceanography." *Historical Studies in the Physical and Biological Sciences (HSPS)* 30 (2): 373-392 (2000).

¹³ John E. Cunningham (1943-), Marguerette Schultz's son, retired to Texas after a career in the Navy.

- Harkewicz:** Okay. Did you tend to socialize with your fellow BT Unit people?
- Schultz:** Not a whole lot off the job. On the job? Yeah. But not off the job. They all had their own lives.
- Harkewicz:** Were most people married and had children...
- Schultz:** Yeah.
- Harkewicz:** Okay. Did you ever do anything with other people from Scripps or get to interact much with other people outside of the BT Unit?
- Schultz:** No.
- Cunningham:** Picnics.
- Schultz:** Hmm?
- Cunningham:** Remember the old beach parties?
- Schultz:** Oh yeah. *[Laugh]* They used to have beach parties. They originally started out with the California State Employees Association, and then they became campus wide, more or less, and eventually the university took them over. *[Laugh]* And they were great because we would, well, the maintenance people would boil potatoes, a hundred pounds at a time, *[laugh]* in the shop the night before. And then we'd come in in the morning and peel the potatoes.
- Harkewicz:** Oh my god. *[Laugh]*
- Schultz:** And cut them up. And my husband worked nights, so . . .
- Harkewicz:** Oh, he worked at Scripps, too?
- Schultz:** No.
- Harkewicz:** Oh.
- Schultz:** He worked at Convair.
- Harkewicz:** Okay.
- Schultz:** And he would chop onions, and pickles, and all the things that go into a good potato salad, and put them in large baggies and we would take them out the

next morning when we cut up the potatoes. Everything went into airplane bubbles, the canopy bubbles. That's the only thing big enough.

Cunningham: Off of bombers. *[Laugh]*

Harkewicz: Oh my god. *[Laugh]*

Schultz: And that was the base of the picnic and then the rest of the—oh, and they'd boil hotdogs the same way, in the shop. It was fun. It was a real fun thing to do. This was before the university became so big. Actually, it was practically only Scripps.

Harkewicz: Okay. So was this like an annual thing or every week?

Schultz: Yeah, it was an annual thing.

Harkewicz: Okay, every year they would do that, then? Okay. And would everybody from Scripps go down?

Schultz: Oh, yeah, everybody would come. And they'd bring things, small things.

Cunningham: Elizabeth Taylor's brother¹⁴ used to work at the university and she showed up at one of the picnics with her kids, *[laugh]* when they were little. *[Laugh]*

Harkewicz: Well, I don't know if we heard that, but Ms. Cunningham has said that Elizabeth Taylor's brother used to work at Scripps and she showed up at the party once. That must have been—was that exciting?

Cunningham: Oh yeah. She was a very nice lady.

Harkewicz: Hmm. Well, that sounds pretty cool. *[Laughter]* Did people like the director show up these parties, too, like Roger Revelle?¹⁵

Schultz: Oh yeah. Oh and, *[laugh]* Roger was a gem. When I first started there, I think there were about three hundred employees and sometimes when the state budget didn't get signed the money didn't come through for salaries. And Roger would furnish the money until our salaries came through, at no interest.

Harkewicz: Really? Out of his own pocket, then?

Schultz: Out of his own pocket.

Harkewicz: Huh.

¹⁴ Howard F. Taylor (1929-), senior scientific illustrator at Scripps Institution of Oceanography.

¹⁵ Roger Randall Dougan Revelle (1909-1991), director of Scripps Institution of Oceanography 1951-1964.

- Schultz:** He was a very caring person.
- Harkewicz:** So how long did you do this kind of work? At that particular job.
- Schultz:** That particular job, oh . . .
- Cunningham:** Nineteen seventy-six.
- Schultz:** Until 1970. . . in the seventies. I'm not sure.
- Cunningham:** Seventy-six.
- Schultz:** Was it '76?
- Cunningham:** Uhm-hmm. That's when you went to work for Climate Research rather than retiring or being forced out.
- Harkewicz:** So you did this work for like twenty-some years then?
- Schultz:** Yeah.
- Harkewicz:** And that must have, how did . . . *[Laugh]*
- Schultz:** Well towards the . . .
- Harkewicz:** How did you manage that? It sounded like, you said it was tedious and time consuming, and very stressful. How did you manage that for twenty-some years?
- Schultz:** It was always different. Each group of slides that came in were different. They had to be handled differently. Some of them had been lacquered, some of them hadn't and had to be handled *very* carefully. If they had been lacquered they were pretty easy to handle. But it was challenging—it was tedious. It was time consuming. But it's one of those things. If you hire to do a job you do the job and make the most of it. I felt like I was contributing something. And I think that's one of the main things that makes a job worthwhile is to feel that you're contributing something to humanity.
- Harkewicz:** Yeah. That's for sure.
- Schultz:** Towards the end we were beginning to process the slides electronically rather than manually, and that was a whole new ball of wax and that made it a different situation, too. It was after we'd been doing that for a while and had it pretty well perfected that they sent the job to Washington. *[Laugh]*

- Harkewicz:** I see. Okay. So it wasn't that you were put out of work because of technological advances? It was more like they took it to another location, then?
- Schultz:** Yes.
- Harkewicz:** Okay. So do you know how it eventually evolved at all? I imagine it was automated in some way, perhaps?
- Schultz:** Towards the end I was doing quality control on these slides. Or not even slides by then. It was just data that came in by computer. And I was checking it for accuracy and bad data, and sometimes the instrument that was sent to the bottom or sent down would hit a fish or goodness knows what, and you could tell when it did. It disturbed the trace in such a way that the trace beyond that was no good. And so I could say, "Okay, cut it off at this point." And that was done, I was doing that at the Fisheries building under the—well, let's see. When was that? I was about sixty then, so it
- Harkewicz:** So it was about twenty years ago or so? So you said you were doing quality control on the machine or on a computer? Were you verifying the computer's work?
- Schultz:** I was verifying on a computer what was sent to me by Washington, or by the Navy.
- Harkewicz:** I see. So I wonder if some automated piece of equipment would be able to know that the instrument would hit a fish and to cut off the information there?
- Schultz:** Because of the appearance of the trace.
- Harkewicz:** I see. Okay. All right. So it was something that you could
- Schultz:** It was something that I could visually see and know that it was wrong.
- Harkewicz:** Okay. So you said that the job was different from each time, each instrument was different, but did you notice a change over the years? I mean, did things become, did it become technologically more advanced or did it, say, stay pretty much the same?
- Schultz:** Pretty much the same. *[Laugh]*
- Harkewicz:** Really?
- Schultz:** Yeah. Because you had to recognize certain other things and this is something that you just learn by doing. Some of the thermometers were off. Some of the thermistors were off in the ships themselves. And there were several different

ways of taking reference temperatures. One was what they call a “bucket temperature,” which is actually dropping a thermometer into the ocean and getting a reading from the thermometer. There were injection temperatures. Now this is a thermistor that is in the ship’s hull that records the temperature. Some of these we knew to be off because they were too close to the outflow from the bilge. Just one of those things that by doing you begin to recognize.

- Harkewicz:** I see. So, did you train? You must have had to pass that information on to other people then as they came and went in the job? I mean, how did you?
- Schultz:** We kept records of each instrument. And we knew some of the things that were wrong with *an* instrument or that certain ships, the thermistor in the hull was in the wrong placement and so we allowed for that when we were reading the temperatures.
- Harkewicz:** Uhm-hmm. Did a lot of people come and go in the BT Unit?
- Schultz:** Not too many.
- Harkewicz:** Really?
- Schultz:** There were some, but there were not too many. They either liked it or didn’t, and if they didn’t, they didn’t stay very long.
- Harkewicz:** Do you think it had anything to do with them being women that had children and maybe that was a good job for them to have, or something?
- Schultz:** I don’t think so.
- Harkewicz:** Okay.
- Schultz:** No. I think it was just a matter of whether they were adaptive to the type of work it was.
- Harkewicz:** Okay. Did most people have similar math and science backgrounds that you had, the other people that you worked with?
- Schultz:** You know, I really don’t know. Hmm. *[Laugh]*
- Harkewicz:** Okay. So you said you really didn’t socialize with people? You didn’t like have any like long-term friendships that you
- Schultz:** I mean, we all had our own families and we came to work in the morning and went home to feed the kids at night. *[Laugh]*

- Harkewicz:** Okay. You know you mentioned computers, and we have our way of thinking of computers now. But I know that at one time your job was considered “computers” because of the data and analyzing that you did. Were “BT Girls” called, you’ve been called—? Were you ever called that to each other?
- Schultz:** Not to my knowledge.
- Harkewicz:** Okay. *[Laugh]* You were never called “computers” or anything like that?
- Schultz:** No. Hmm-uhm.
- Harkewicz:** Okay.
- Schultz:** No.
- Harkewicz:** So what did you consider yourselves? You worked in the Bathythermograph Unit? That was your position?
- Schultz:** That’s our—well, they called us engineering aides.
- Harkewicz:** Okay. *[Laugh]* Engineering aides. Well, that sounds official, doesn’t it?
- Schultz:** Sounds important.
- Harkewicz:** Before we started recording you mentioned that you had a dog that went to work with you because you worked at night. So how often did that happen?
- Schultz:** There was a time when all of this data was being put on computer tapes. And I would go in, usually it was much easier to get computer time at the university at night. So I would go in at night and do this, and I didn’t feel comfortable always. There were always a lot of people roaming around, and I had a bulldog that was very protective and so I’d take her in with me when I went at night.¹⁶
- Harkewicz:** Okay. Well, that’s understandable. That’s understandable.
- Schultz:** And, they’d see her and make a wide *[laugh]* path around me.
- Harkewicz:** But you were usually working by yourself, then, at that time?
- Schultz:** Yes. Uh huh. I’d go in at night and gather up all the stuff and take it up to the computer to be recorded.

¹⁶ The bulldog’s name was Brenda.

- Harkewicz:** Okay. So it sounds like everybody, at least you were pretty self-sufficient, if that's the correct word? I mean, did you have much supervisory oversight or anything like that or was everybody pretty . . .
- Schultz:** We were supposed to do our job and we did it.
- Harkewicz:** Okay.
- Schultz:** I think that's probably the reason that there wasn't a big turnaround, because most of the people were very responsible, and very attuned to their work.
- Harkewicz:** But you think you had to have a certain personality to be in that job?
- Schultz:** Yeah. I think so.
- Harkewicz:** Okay. So, you mentioned the university time on the computer, throughout the whole twenty years that you did this job, the calculations always were for the Navy, then, is that correct?
- Schultz:** As far as I know, yes.
- Harkewicz:** Okay.
- Schultz:** Now, all of the slides were not taken by the Navy. There were a lot of what we called "ships of opportunity," which might have been merchant ships, cargo ships, Navy ships, Coast Guard. We got data from light ships. So . . .
- Harkewicz:** Were there other units throughout the country, do you know, that were doing this, too?
- Schultz:** There was one at Woods Hole, and one in Nanaimo, in British Columbia.
- Harkewicz:** Okay. But it all went to the same location, as far as you know? All the information?
- Schultz:** I don't know what happened to Nanaimo's, although we worked with them at various times. But as far as I know, Woods Hole sent all of their stuff to the same place we did. They were Atlantic and we were Pacific and Indian Ocean, primarily.
- Harkewicz:** I see. So did you feel like the work that you were doing was defense related or do you think it had something to do with basic science, or something else?
- Schultz:** It had to do with science, but it also was definitely defense related. The Navy needs it. They needed it in conjunction with their sonar. Because, not only was the temperature important, in itself, but the depth at which there is very

rapid change in temperature, and that change in temperature is the point at which sonar has to be aware.

Harkewicz: Right. Adjusted for different temperature changes. Okay.

Schultz: Because that controls the direction of the sound echoes.

Harkewicz: Okay. Were you trained with this information in mind, like from the very beginning, as to what was happening to all this data that you were collecting? Or, I mean . . .

Schultz: No, that was something you just gradually learned. *[Laugh]*

Harkewicz: Okay. So it wasn't like somebody said, "This is why you're doing this job." It was sort of like you just learned it over time from other people or something like that?

Schultz: Yeah. Uhm-hmm.

Harkewicz: Okay.

Schultz: And we were given a slight, a small overview when I hired on, but it was very limited.

Harkewicz: Was any of this information classified, this work?

Schultz: Not to my knowledge, but I did have to have a security clearance.

Harkewicz: You did? Okay. So you had your family and everything else in that time frame?

Schultz: I already had the family.

Harkewicz: You had your family when you started working there? Okay. So, *[laugh]* how did that work out?

Schultz: Well, at least I had part of it.

Harkewicz: Okay. That worked out? It was fine?

Schultz: There was no, there was no problem.

Harkewicz: I see. Okay.

Schultz: They were very good about allowing time off. We were allowed to use our sick leave for our children, if we needed to.

- Harkewicz:** Uhm-hmm. Did you notice any difference in your job at all when, when the university opened?
- Schultz:** No.
- Harkewicz:** Just kept going on the same way? *[Laugh]* Okay.
- Schultz:** Except nobody else had to pay our salary when the state didn't come through.
- Harkewicz:** Okay. *[Laughter]* I see. That overcame Roger Revelle having to pay out of his pocket.
- Schultz:** That, I think, is something to leave out of it.
- Harkewicz:** I see. Okay. All right. *[Laugh]* So, but as far as you can, over the years it didn't matter who was in charge at Scripps, your job was pretty much the same?
- Schultz:** Well, until 1976 when I went into the . . .
- Harkewicz:** Climatology Group?
- Schultz:** Climatology.
- Harkewicz:** Okay. So again, let me just, I just want to clarify. The only reason that you switched jobs was because the job went somewhere else, the BT Unit went somewhere else?
- Schultz:** That's right.
- Harkewicz:** Okay. So was there a problem, then, getting this job with Climatology—I mean, did other people get jobs elsewhere from the Unit? Were they able to?
- Schultz:** Uhm-hmm. They were absorbed.
- Harkewicz:** Okay, they were?
- Schultz:** I think everybody that wanted to continue to work had a job.
- Harkewicz:** Did you apply for the position in the Climate Research Group?
- Schultz:** I had to be interviewed. *[Laugh]*
- Harkewicz:** What I mean is, did you choose the job that you ended up with then, that you moved to?

- Schultz:** Somebody asked, and I don't remember how it happened. I was asked if I'd like to go into climatology doing data work. I said it didn't matter to me. And it was, basically it was the same thing. It was transcribing data onto maps and doing the contours, and essentially it became different because I was drafting.
- Harkewicz:** Do you want to take a . . .
- Schultz:** I don't think so.
- Harkewicz:** Okay. So, we were talking about when you moved into climatology.
- Schultz:** I was interviewed by Tim Barnett, Dr. Barnett,¹⁷ and he sent me then down to—*[laugh]*. Oh, I'm terrible with names. And that's . . .
- Harkewicz:** That's okay. Don't worry about it.
- Schultz:** And they hired me on. There was no break in work or anything. And it was just a lateral transfer.
- Harkewicz:** Did you start working with Jerome Namias at that point?¹⁸
- Schultz:** That's who Tim sent me to. Jerome, right. *[Laugh]* Yeah. And he's the one that I worked for, until he retired. And then Dr. Somerville came in.¹⁹
- Harkewicz:** And so you—oh. We have a photograph here.²⁰ Oh, I see Richard Somerville here. So.
- Schultz:** This is the Climatology Group.
- Harkewicz:** How many years ago do you think this is from? Oh, there's Jerome Namias. When did he— isn't it? When did he . . .
- Schultz:** That's Jerome, Carolyn Baxter,²¹ Dr. Somerville, and I don't remember her name. That's Tim Barnett. Tony Tubbs.²² And Art.

¹⁷ Tim Palmer Barnett (1938-), principal scientist and co-originator of the first US Experimental Climate Forecaster Center at Scripps.

¹⁸ Jerome Namias (1910-1997) was trained as a meteorologist by Carl-Gustaf Rossby at MIT and worked at the US Weather Bureau for many years. He first came to Scripps in 1957 to participate in the Rancho Santa Fe Conference and eventually retired from the Weather Bureau and worked full time at Scripps

¹⁹ Richard C. J. Somerville (1941-) got a PhD in Meteorology from New York University in 1966. He came to the Scripps Institution of Oceanography as a professor of meteorology in the Climate Research Group in 1979.

²⁰ See photo of Climate Research Group on page 26.

²¹ Carolyn Ann Heintskill Baxter came to Scripps in 1974 as secretary to Jerome Namias and retired as administrative specialist for the Climate Research Division in 2006. She was recalled to service and continues to work at Scripps today.

- Harkewicz:** So are you in this picture?
- Schultz:** Right there.
- Harkewicz:** Oh. There you are. So this is probably the eighties, maybe?
- Schultz:** About eighties, might even be early nineties. This is Mary Ray.²³ John . . .²⁴ I don't remember his name.
- Harkewicz:** As far as you know, are most of those people still in the group?
- Schultz:** He's still there. She's gone. She retired. I think Tim's pretty much retired. This guy I don't know of. He's still there. John Roads.²⁵
- Harkewicz:** John Roads. All right.
- Schultz:** This guy.
- Harkewicz:** Okay. Yeah.
- Schultz:** And he's still there somewhere. Tony's retired. He's still there. This is Beth,²⁶ and I don't remember her last name at all. She's gone, long gone.
- Harkewicz:** Are most of those people scientists in the group?
- Schultz:** Yeah. Most of them. Carolyn's the secretary. Or . . .
- Harkewicz:** Administrative assistant?
- Schultz:** I don't think they call her that.
- Harkewicz:** Okay.
- Schultz:** Administrative assistant.
- Harkewicz:** All right. So, was your job pretty much the same then throughout the time period that you worked for . . .
- Schultz:** It was the same, but different. *[Laugh]*

²² Anthony M. Tubbs, programmer/analyst in the Climate Research Division from 1968-2000.

²³ Mary M. Ray, secretary in the Ocean Research Division at Scripps.

²⁴ John Horel, assistant research professor at Scripps Institution of Oceanography 1982-1986.

²⁵ John Owen Roads (1950-2008), research meteorologist at the Scripps Experimental Climate Forecast Center.

²⁶ Beth Chertock (1960-), PhD in oceanography 1989 at Scripps Institution of Oceanography.

Harkewicz: How so?

Schultz: It was very similar to the BT section except that it was done all by hand, and paperwork. No photography involved with it. I took world maps and recorded surface layer pressures and temperatures, air temperatures rather than water temperature and then, at geographic points all over the world, and then draw contours.



Climate Research Group (left to right, standing): Leo Volfson, Sam Iacobellis, Tony Tubbs, John Horel, Tim Barnett, Mary Ray, Marguerette Schultz, John Roads, Geoff Vallis, Catherine Gautier; left to right (seated): Dan Cayan, Beth Chertock, Richard Somerville, Carolyn Baxter, Hans Panofsky, Jerome Namias, 1985. Scripps Institution of Oceanography Archives, UC San Diego Libraries.

- Harkewicz:** So you said it was drafting now. Did you have to be trained in drafting in some way?
- Schultz:** Nope.
- Harkewicz:** It was sort of on-the-job type?
- Schultz:** It just went along with all the rest of it. You follow the numbers. *[Laughter]*
- Harkewicz:** Okay. All right. What was different working with the people in the Climate Group than it was with the—I mean, now here you have men and women that you're working for?
- Schultz:** There were more of them, and there were men involved. Most of the scientists were men.
- Harkewicz:** Now here, the work you were doing was strictly for Scripps then, correct, in the Climate Group? Or was it . . .
- Schultz:** Uhm . . . no. It was for the Navy, also.
- Harkewicz:** It was? Okay.
- Schultz:** Yeah. Because they do all sorts of things with climatology.
- Harkewicz:** Right. Okay.
- Schultz:** Not the Navy, specifically, but government. So most of it, I think, was government contract work.
- Harkewicz:** Okay. You didn't . . .
- Schultz:** They put out atlases. And this is what I was drawing the contours for, was the atlases, and eventually the computer started drawing it. The only problem with the computer was it couldn't recognize absolute zero. It didn't know what to do with an absolute zero. So I would have, have to go through there after the computer got through with it and redraw some of it, so to speak.
- Harkewicz:** Hmm. Do you know if they ever corrected that problem?
- Schultz:** I don't know whether they did or not.

- Harkewicz:** Hmm. That's interesting. So did you notice any difference in your experience working in this, with this group? Scripps versus—well, you were always working at Scripps. That's not the way I want to say this.
- Schultz:** Working with men as well as women? No.
- Harkewicz:** No?
- Schultz:** We were all employees and we were employment friends. There wasn't a whole lot of interaction personally, as far as me going to your house, your coming to my house. It was pretty much, you've got business life and you've got a home life, and they don't mix that much.
- Harkewicz:** I see. Did they still have these beach party type things?
- Schultz:** I think that kind of died out. I don't know when it did. I know that I wasn't involved with it anymore. One person that was sort of the prime mover on this was Ben . . .
- Cunningham:** Ben? Ben Cox.²⁷ Yeah.
- Schultz:** Yeah. Ben Cox. He was chairman of, he started the credit union. And that was about, I think he was a maintenance of some sort and I don't really know what he did. But he started the credit union and he was the one that started these beach parties, and he was sort of a prime mover on that kind of thing. And eventually, the credit union was taken over by I don't know who, but it's a lot bigger now than it was.
- Harkewicz:** Right.
- Schultz:** In fact, I was [about] the 200th person to join. *[Laughter]*
- Harkewicz:** That's interesting. Did you get a special certificate?
- Schultz:** No. I just happened, that was my account number.
- Harkewicz:** Really?
- Schultz:** Yeah.
- Harkewicz:** Well, that's kind of nice. Yeah. That's interesting.
- Schultz:** So, there's so much that has happened over the years. Have you ever seen a fifty-year pin?²⁸

²⁷ Ben T. Cox (d.1982), aquarist at the Aquarium-Museum from 1951-1975. He founded the Oceanographer's Credit Union and served as its business manager from 1953-1970.

- Harkewicz:** No, I haven't.
- Schultz:** I've got one. *[Laugh]*
- Harkewicz:** Okay, you'll have to show that to me.
- Schultz:** See, when I retired I'd been there thirty-eight years, but I went back to work.
- Harkewicz:** Yeah, I had read that somewhere. Yes.
- Schultz:** And I was working more than half time, so I was continuing to build years of service.
- Harkewicz:** Uhm-hmm. So you didn't really retire, then? You just sort of cut your hours back? *[Laugh]*
- Schultz:** That's right.
- Harkewicz:** And you still worked for the Climate Group, then?
- Schultz:** Still worked with the Climate Group, and they loaned me out hither, thither, and yon. *[Laughter]*
- Harkewicz:** I see.
- Schultz:** When the group that's still doing temperatures and whatnot, the person in charge of that is over at the Fisheries, and I went over there to work for a couple two or three years, again doing quality control work on temperatures.
- Harkewicz:** Uh huh. Correcting computers? *[Laugh]*
- Schultz:** Uhm-hmm. Correcting computers. It's just one of those things that I've done for so long that I'm about the only one left. *[Laugh]*
- Harkewicz:** You said in the BT Unit people stayed there. Did you have that same experience in the Climate Group, or did people come and go all the time?
- Schultz:** Oh, there were always people that came and went, retired, and new hires. But it's a very stable place to work.
- Harkewicz:** Scripps in general?

²⁸ UCSD awards service pins to employees for every ten years of qualified service. The fifty-year pin has three small diamonds, and very few of these have been issued.

- Schultz:** I would say so, yes. There's a lot of things about it that are a nuisance. It's hard to get to. *[Laugh]*
- Harkewicz:** Yeah, definitely.
- Schultz:** But as far as being a pleasant place to work, it is. And it's real nice that you can go swimming at noon in the summertime.
- Harkewicz:** Yeah. *[Laugh]* That is for sure. Did you have, like, any interactions with graduate students in the Climate Group?
- Schultz:** Oh yeah. They had graduate students come and go. That was the coming and going.
- Harkewicz:** The coming and going? I see.
- Schultz:** But . . .
- Harkewicz:** So when Jerome Namias was working there, or before he retired, or, was he actually your supervisor?
- Schultz:** Yes.
- Harkewicz:** Okay.
- Schultz:** He was actually the supervisor. Actually, I think Carolyn was. *[Laugh]*
- Harkewicz:** He was technically, but she actually was.
- Schultz:** He was technically.
- Harkewicz:** Yeah. I see.
- Schultz:** You know, Carolyn is a very dynamic person, very organized, and she was a nice person to be, *is* a nice person to be around.
- Harkewicz:** She's still working there, isn't she, or semi-working there?
- Schultz:** I think she's semi-working. She was administrative assistant to Dr. Namias, and then to Dr. Somerville, then to Dan Cayan.²⁹ But she always had her finger on everything. She knew what was going on, why it was going on, and when it was going to . . .
- Harkewicz:** Most good administrative assistants are like that, I think. So, yeah.

²⁹ Daniel Richard Cayan (1949-), researcher in the Climate Research Division at Scripps Institution of Oceanography.

- Schultz:** And she was excellent at her job. For a long time I worked in the same office with her.
- Harkewicz:** So when did you finally actually stop working, then, or are you still going in there?
- Cunningham:** Last year.
- Schultz:** I think last year was the last.
- Harkewicz:** What made you finally decide to . . .
- Schultz:** I didn't. It just, *[laugh]* they don't need me right now.
- Harkewicz:** I see. Okay. So if they called you up tomorrow and said, "Hey, we could use you to come in," would you?
- Schultz:** I don't think I would, *[laugh]* because I've developed a medical problem that isn't conducive to going to work.
- Harkewicz:** Well, you deserve to take a break though, too.
- Schultz:** Yeah.
- Harkewicz:** It's been a long, long time.
- Schultz:** I figure after all this time—let's see, how long is it? Fifty, fifty-five, fifty-six years, I'm entitled to rest on my laurels and my duff. *[Laugh]*
- Harkewicz:** So how many years did you say you actually worked full-time then, thirty-six?
- Schultz:** Thirty-eight years, full-time.
- Harkewicz:** So, you must have seen a lot of changes go on at Scripps. Is there anything, *[laugh]* anything that stands out?
- Schultz:** Even buildings have come and gone. *[Laugh]*
- Harkewicz:** Yeah.
- Schultz:** Where the patio is between Sverdrup Hall and Ritter Hall there used to be a building. The Aquarium used to be attached to the Scripps building where the snack bar is now. And all that stuff down there is practically new.
- Harkewicz:** I'm sure you've seen a lot of changes in San Diego, for that matter?

- Schultz:** Yeah. It used to be a sleepy little village. Now it's a sleepy big one.
[Laughter] They haven't gotten beyond some of the village thinking, in a lot of stuff.
- Harkewicz:** Okay. You want to elaborate on that? *[Laughter]* So you said you were hired out occasionally to go wherever you were needed but basically all the positions you've had have been similar as far as data analysis and things like that?
- Schultz:** Yeah. They have, yes.
- Harkewicz:** And you enjoyed it the whole time you were there, I guess?
- Schultz:** I've enjoyed it. Because, well each time I was put into a different place I had to learn a different skill of one kind or another. One was operating a computer.
- Cunningham:** She fought it. *[Laugh]*
- Schultz:** And I fought it all the way. I . . . *[Laugh]*
- Harkewicz:** Well, tell me about that a little bit, then.
- Schultz:** I don't like computers. That's why we don't have one. And we've both had to work with them in our jobs. My daughter worked at Scripps for a year.
- Cunningham:** Almost. Ten months.
- Schultz:** And then she went to the telephone company. She was there for thirty years.
[Laugh]
- Harkewicz:** You're long-term, steadfast employees.
- Schultz:** Well, just like we've lived here for twenty-nine years, and the house we were before was from . . .
- Cunningham:** Twenty-seven.
- Schultz:** Twenty-seven years. The family just sort of, you get a hold of a good thing, you stick with it.
- Harkewicz:** Uhm-hmm. So, you were living here when you were still working at Scripps, then?

- Schultz:** Yes. When we first moved up here it was a nice commute. It was a pleasant commute. The traffic has gotten so horrendous since then that I'm glad that I finally don't have to work anymore.
- Cunningham:** Me too, because my office got moved to North Park. That's where I retired from. Eighty-two miles round trip a day. *[Laugh]*
- Harkewicz:** Wow. That's fun.
- Cunningham:** That's why I'm driving a car with 305,000 miles on it. *[Laughter]*
- Schultz:** Even our cars last forever. *[Laugh]*
- Harkewicz:** Yeah. You're right.
- Schultz:** Because, like she says, hers has . . .
- Harkewicz:** Three hundred thousand miles on it.
- Schultz:** Three hundred and five thousand miles on it. Still the original engine.
- Harkewicz:** Wow. Is there any, any particular stories or memories that you would like to put down for posterity from your time at Scripps?
- Schultz:** Only that all the people that I worked with I enjoyed, even the ones that were not very pleasant sometimes. But most of the time the people in that type of work all seemed to be happy people and I think it's probably because they don't stay in that line of work if they aren't happy with it. Because it can be tedious at times. And being like that tends to make you very compatible with the people you work with. But I think the thing that really impressed me when I first started there was Roger, and his compassion for the people who worked under him.
- Harkewicz:** Okay. Did he visit the unit or anything like that, and on a regular basis?
- Schultz:** No. But he always had a smile, and a "Hello," and a "How ya doing?" whenever you met him.
- Harkewicz:** Uhm-hmm. Did you feel like he knew who you were?
- Schultz:** Yeah.
- Harkewicz:** Okay.
- Schultz:** He recognized us as fellow employees and he cared. And there's been others over the years. I did work for Walter Munk for a while, when he had a special

data project that needed to be done. *[Laugh]* And I was loaned out to him. Even though he hadn't hired me, he was instrumental in my being hired. And we didn't have any problem.

Harkewicz: And you didn't mind being loaned out wherever you were?

Schultz: No. Because I had a skill, or a talent, I don't know which it would be, and therefore I felt rather proud to be the one to be loaned out.

Harkewicz: So, that was unusual? You were one person, maybe, that they did and not everybody with a similar background as you were spread around like that?

Schultz: No, they weren't, now that I think about it. But I never had any problem with it. I didn't mind. In fact, I'm kind of proud.

Harkewicz: Yeah well, it sounds like you should be. Now, I'm not expecting you to name any names or anything like that, but you said some of the people you found were difficult people. You still liked them, you had said. Were there particular people, types of people? I mean I just wonder if it was . . .

Schultz: There were some people, and I wouldn't name names, who had problems with ego.

Harkewicz: I guess what I'm trying to ask is it was more of the scientific staff, you think, than the technical staff?

Schultz: No. Not the scientific. Not the truly scientific ones. The ones, the pseudoscientific ones. People, they didn't have degrees. They hadn't had the level of knowledge that some of the scientific people had, but they thought they did.

Harkewicz: I see. Now, would these people tend to stay in the work that . . .

Schultz: Yeah.

Harkewicz: So they would sit there, and they would . . .

Schultz: Yeah. But, there was very little of that.

Harkewicz: Would that have made it difficult for the rest of you then?

Schultz: No. No. Not really. It's just that you knew that they didn't have what it took to be the top dog, but they liked to think they did. They liked other people to think they did. *[Laugh]*

Harkewicz: I see. Okay.

- Schultz:** But it didn't interfere with anything.
- Harkewicz:** Anybody else's work?
- Schultz:** We just went ahead and worked around them.
- Harkewicz:** Okay. *[Laugh]*
- Schultz:** Worked around their eccentricities.
- Harkewicz:** Now, you mentioned before that there were times when payroll didn't go through and Roger paid out of his pocket. Were you ever worried at any time about funding or losing your job because of lack of finances, or anything like that?
- Schultz:** No. Well, a few times, yeah, but it always seemed to come through. The contracts were renewed, finally. A state budget was finally approved.
- Harkewicz:** Did your husband stay at his job at Convair for a long period, too?
- Schultz:** He went to work there in 1936 and he died, well he retired in 1973.
- Harkewicz:** Okay.
- Schultz:** Yeah. We're very, stick-in-the-muds.
- Harkewicz:** No, you're just happy doing what you're doing. That's fine. Have most of your children stayed around here or have they spread out all over?
- Schultz:** My son is retired from the Navy.
- Harkewicz:** So he stayed with the Navy?
- Schultz:** He stayed with the Navy for . . .
- Cunningham:** Twenty years.
- Schultz:** It was more than twenty years, but at least twenty years.
- Cunningham:** He made Master Chief, young. *[Laugh]*
- Harkewicz:** So you mentioned before, you felt that what you were doing in the BT Unit was really important, especially when he was in the military. Do you feel like that contributed to your knowledge about what you were doing at the time?

- Schultz:** Oh, not at that time. It did later. But what I was doing contributed to the work that he went into. And at one time there was a certain job that a lot of the sailors got. It was almost a punishment detail. It really wasn't, but it was having to take BTs at night, things of that sort, and he was able to instill the necessity for this in the young men who worked under him when he became Chief. And they didn't consider it punishment detail, *[laugh]* or disciplinary detail.
- Harkewicz:** Well, that's nice. *[Laugh]*
- Schultz:** Yeah.
- Harkewicz:** No, I mean, that's cool have you can have this, you know . . .
- Schultz:** Yeah. There
- Harkewicz:** Consistency between you and your son?
- Schultz:** He made
- Harkewicz:** And encouraging future generations?
- Schultz:** Chief at twenty-six, which is a pretty young age for a Chief, in the Navy. And for a while he was sent as a training person to train officers in the South Korean Navy, in sonar.
- Harkewicz:** Oh.
- Schultz:** He was there
- Harkewicz:** He was always sort of directly related, with the kind of work you were doing then, your son? Well, that's really neat. I mean, do you think you had any influence on that, or it just turned out that way?
- Schultz:** Oh, I'm sure it did. You know.
- Harkewicz:** Well, I want to ask you, because, I don't know if this is related. There was this quotation in the *Evening Tribune* from Margaret Robinson in 1962 and she said that "Data processing is a wonderful field for women. Men like to go to sea or design instruments, which leaves data processing and analysis for women."³⁰ And you're here talking about your son going to sea. Did you, I mean, what do you think of what she said and did you ever want to go out to sea?

³⁰ Virginia Bell, "La Jollan to Help Thais." *San Diego Evening Tribune* (11 September 1962). Margaret Robinson, Biographical Information Files, Scripps Institution of Oceanography Archives, UC San Diego Libraries.

- Schultz:** Oh, I did. I went out on the boats, on the Scripps boats. We took BTs.
- Harkewicz:** You did? Okay.
- Schultz:** And I also took them off the pier. *[Laugh]*
- Harkewicz:** Okay. Did that happen often or . . .
- Schultz:** No. But, it did happen.
- Harkewicz:** Hmm. And how did you happen to be doing that?
- Schultz:** They needed it done and *[laugh]* there was nobody to do it except the ones that worked with it. But, oh, as far as going out on the ship is concerned that was kind of a not training cruise, more of an informational cruise for us to see how the things were done and what it was like out on the ship, or the boat. And the conditions that they had to work under, to get the BTs.
- Harkewicz:** Did anybody from the ships ever come and see how, the work that you guys did?
- Schultz:** No. *[Laugh]* In fact, my son worked on the *Argo* one summer when he was sixteen. He worked as a cook's helper.
- Harkewicz:** Oh, I was going to say, did he take BTs later?
- Schultz:** And you should have heard *[laugh]* him calling up at home to find out how to fix this in the kitchen and how to fix that. "How do you make this, Mother?" *[Laughter]*
- Harkewicz:** Well, it must have been different onboard ship though than in your own kitchen, somehow or other?
- Schultz:** Well, I imagine it was. *[Laughter]* But, I thought it was kind of funny. He wanted to know how to make a certain kind of pie, because he was going to serve it to the guys that were on duty. *[Laugh]*
- Harkewicz:** I see. So, this time that you went out on ship, that was not a recurring event? It was just
- Schultz:** I went out twice.
- Harkewicz:** Okay. And was it for other BT Unit people that you were training, you were training people to take the readings onboard ship, then?
- Schultz:** It was more to, for our information, for us to know

- Harkewicz:** What they did?
- Schultz:** The trials and tribulations that they might have in taking the BTs, how it was done. It was just a sort of informational thing to acquaint us with another phase of the work we were doing.
- Harkewicz:** I see. Okay.
- Schultz:** And as far as what Margaret had to say, I agree with her. She was easy to work for. I know a lot of people thought she was a tough old bird, but I enjoyed her. She was one person that I did have outside.
- Harkewicz:** You did? You socialized with her then some?
- Schultz:** Some. Yeah. She always had a Christmas party during working hours.
- Cunningham:** She was, what, two days shy of her 100th birthday when she died last year?
- Schultz:** Yeah.
- Cunningham:** We went to the memorial at her house.
- Schultz:** Uh . . .
- Harkewicz:** So, you said . . .
- Schultz:** A celebration of her life.
- Harkewicz:** Yeah. But you said, “during working hours,” and then you looked down, now. Was that against the rules to do it during the work?
- Schultz:** No, it wasn’t, it was just an aside.
- Harkewicz:** I see. Okay. I don’t want to, I don’t want to stir up any bad memories or any troubles here.
- Schultz:** No. We’d all go over to her house and we’d sing Christmas carols and exchange gifts, little gifts, and have a drink or two. *[Laugh]*
- Harkewicz:** Well, okay. Did she ever, like, complain about her position or anything like that? I’ve read some things where there were some barriers put in her, or obstacles put in her way, when she was trying to go to graduate school. That, you know, Harald Sverdrup didn’t think that women should be trained in

oceanography, or something to that effect?³¹ Did you ever get that, any kind of feelings about that from her?

Schultz: No. She was happy with her work and she felt that it was important. I don't know anything more that I could—she never complained about other scientists.

Harkewicz: Okay.

Schultz: So. Just one of those things that . . .

Harkewicz: So, I have a few final questions that I ask everybody. I just want to make sure if there's anything that you feel like you wanted to say about your experience. You've been there for over fifty years. If there is anything?

Schultz: I think the university is a great place to work. But you need to be on your toes. You can't just go out there and say, "I want a job," unless you want to clean toilets. *[Laugh]* But you have to be able to be flexible. You can't go into a job and say, "Okay, this is what I'm going to do and this is all I'm going to do," because there are always side jobs, side chores that have to be addressed. I started out just to do data work. One of the things we did have to know, or have a skill, was good penmanship, when I started, because all the transcription was done by hand and it had to be legible.

Harkewicz: I would have been in trouble then. My handwriting is terrible. *[Laughter]*

Cunningham: Everything's done on computers nowadays.

Schultz: And numbers, particularly, because there are certain numbers that if you're not careful look funny.

Harkewicz: They can look like something else? Yeah.

Schultz: Look like something else. Yeah. And when you're recording data like latitudes, longitudes, and times it has to be legible.

Harkewicz: Uhm-hmm. I have to ask this, though, this flexibility that you're talking about, do you think that women might be considered more flexible than men, from your experience? I mean, you've been a woman for eighty-some years. *[Laugh]*

Schultz: I think in tedious work, yes, they are more flexible.

³¹ Harald Ulrik Sverdrup (1888-1957), a Norwegian polar scientist and oceanographer, was director of Scripps Institution of Oceanography from 1936-1948.

- Harkewicz:** Uhm-hmm. Well, okay, what do you think about that then, though? I mean, you've seen a lot of changes just in your life, you know, over eighty years.
- Schultz:** Men don't like tedious jobs. And that's all right, too. That's part of the difference between men and women. And there are differences. I don't care what the women's lib—women do better at certain things. Men do better at certain things.
- Harkewicz:** But you never felt cheated in your experience?
- Schultz:** I never felt cheated, no.
- Harkewicz:** Okay. So the . . .
- Schultz:** I had my talents. They had theirs.
- Harkewicz:** All right. And you felt like you were able to use your talents?
- Schultz:** And they meshed.
- Harkewicz:** Okay. Well, that's good. As long as you're happy, and you were happy throughout your . . .
- Schultz:** Women's lib is fine in its place but I think they carry it too far, in many instances.
- Harkewicz:** Well, we don't have to get into an analysis [*laughter*] of that. But I just was curious. I mean, you've seen, like you've seen a lot of life. So I'm sure you have your opinions about certain things.
- Schultz:** Uhm-hmm.
- Harkewicz:** So the questions that I like to ask everybody at the end here is basically three basic questions. One is, what do you think made Scripps successful?
- Schultz:** Its willingness to change with the times and with developments, incorporate them into the jobs, and use them.
- Harkewicz:** It sounds like you could use that description for yourself, too. That sounds like you, willingness to change made you successful, too?
- Schultz:** Probably.
- Harkewicz:** So, you could be like the image of Scripps? [*Laugh*]
- Schultz:** I tried.

- Harkewicz:** So then, alternatively what do you think may have threatened its success?
- Cunningham:** Budgets.
- Schultz:** Budget. Yeah.
- Harkewicz:** Budget. Yeah, okay. *[Laugh]*
- Schultz:** Lack of politicians to recognize the importance of science and to fund it adequately. That is one of the biggest problems going.
- Harkewicz:** Well, do you think that is part of the director's job, to make people understand that?
- Schultz:** They try. They submit the budgets, their needs and the reasons, and the politicians have more fun things to do with the money.
- Harkewicz:** So were there times when you felt that there was some sort of extra stress to your job, or stress to other people's jobs because of that?
- Schultz:** There probably was, but I wasn't particularly aware of it.
- Harkewicz:** Okay.
- Schultz:** Between my job and my home—I had two children, but I raised five while I was working.
- Harkewicz:** So you had enough to worry about, then?
- Schultz:** More than my share of problems.
- Harkewicz:** Okay. I understand. So then, finally, what would you say Scripps meant to you?
- Schultz:** It was a lifeline.
- Harkewicz:** So what do you mean by that?
- Schultz:** It kept me on my toes. It kept me interested in the things that were going on around me. It gave me time to be with my kids. Because, being an educational institution, they were aware of the needs, somebody along the line was aware of the needs of children growing up and going to school, needing to, certain occasions have their family there and let us have the time off without penalizing us, or making us feel like we were falling down on the job. It was just a good experience all the way around.

- Harkewicz:** So you have no regrets or you don't wish your job had been different in any way at that time?
- Schultz:** No. It was adequate at the time and for all the times.
- Harkewicz:** Okay. So now that you're not going in and having a two-hour commute, *[laugh]* what kind of things are you doing nowadays for fun?
- Schultz:** My daughter and I are both involved with the Senior Citizen Club. We have been enjoying playing cribbage. We've been going to tournaments. We enjoy playing Bingo once a week at the Senior Citizen's Group. And there's her retirement group that we go to a luncheon once a month, socialize there.
- Harkewicz:** Do you see anybody from Scripps anymore?
- Schultz:** I get invited to the Christmas party. Both of us.
- Cunningham:** Except last year's was probably the last one.
- Schultz:** Yeah. That's another thing Carolyn always organized was the Christmas party.
- Harkewicz:** The Climate Group Christmas party?
- Schultz:** Uhm-hmm. Yeah.
- Harkewicz:** So what do you mean, "that was probably the last one?" They won't have another one.
- Schultz:** Well, we don't know. Again, the last two or three years there's been budget problems again. So.
- Harkewicz:** No Christmas party? *[Laugh]*
- Schultz:** No Christmas party? What's the world coming to? How could we possibly have no Christmas party? *[Laughter]* Just don't have it. But you know, I'm still friends. I go in once in a while, stick my nose in and see what's going on.
- Cunningham:** We hand-deliver Christmas cards every year. *[Laugh]*
- Harkewicz:** I have found a tremendous loyalty about Scripps, from the people I've talked to. I don't know whether that's going to continue into the future. But at least from people that have worked in the past.

Schultz: Well, when people have worked together for ten, twelve, fifteen, twenty, thirty years you can't do that without having some kind of loyalty. You can't do it without having some common interests, even though you don't necessarily culturally interact with them. You talk. I think Scripps people kind of separate themselves from the rest of the university. *[Laugh]*

Harkewicz: Yeah.

Schultz: I don't know why, and I've always felt like I worked for Scripps. I didn't work for UCSD. I worked for Scripps, because for years Scripps was all there was. So that may have something to do with it. They feel, they're a little bit apart. *[Laugh]*

Harkewicz: That was very diplomatic. "Apart." You didn't say "better," you said "apart."

Schultz: Different.

Harkewicz: Yes. I see. I understand. So, any final comments that you would like to make?

Schultz: No. I hope I was of some help.

Harkewicz: Oh, definitely. I thank you for your time and it was a pleasure to speak with you.

Schultz: Okay.