

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
VOICES ORAL HISTORY ARCHIVES  
IN PARTNERSHIP WITH NOAA HERITAGE AND THE NATIONAL WEATHER  
SERVICE

AN INTERVIEW WITH ALBERT “SKIP” THEBERGE, JR.  
FOR THE  
NOAA 50<sup>TH</sup> ORAL HISTORY PROJECT

INTERVIEW CONDUCTED BY  
MOLLY GRAHAM

GAINESVILLE, VIRGINIA  
APRIL 8, 2020

TRANSCRIPT BY  
MOLLY GRAHAM

Molly Graham: This begins an oral history interview with Captain Albert “Skip” Theberge for the NOAA 50<sup>th</sup> Oral History Project. This is our second interview, and it’s taking place on April 8, 2020. The interviewer is Molly Graham. It’s a remote interview with Captain Theberge in Gainesville, Virginia. I’m in Scarborough, Maine. When we left off last week, we were talking about your time on the Pacific Coast and when you were at the Naval Postgraduate School. One thing we left out was when you had your Pacific baby. Your second child was born there.

Albert “Skip” Theberge: Oh, yes. I think I mentioned that I ended up in the hospital right towards the end of my stay. It would have been the last quarter, but then ended up in the hospital for a couple of weeks’ stay. My wife had just had, at that point in time, in late October, October 28, baby number two. That was a boy. So my poor wife was left taking care of two little ones, trying to visit me every day in the hospital, and then that all finally got straightened out. I don’t know if I mentioned this. When they finally kicked me out of the hospital – I’d been there close to four weeks – when they brought me my dinner, I looked at the dessert, and I said, “I want a different kind of dessert.” At that point, they said, “You’ve been here long enough; you’re out of here.” [laughter] Anyway, that got me out of Silas B. Hayes Army Hospital, which was at Fort Ord, California, right outside of Monterey. Anyway, we finished up at postgraduate school. My next assignment, as I mentioned, we went to Boulder, Colorado. We’ll get into this in a little bit. Boulder was quite close to where I’d gone to college, just twenty miles up the road, home of the University of Colorado, but also Boulder has numerous NOAA [National Oceanic and Atmospheric Administration] laboratories there. I can’t remember – there have been numerous name changes. It’s part of what is today the Office of Oceanic and Atmospheric Research Laboratories. It’s a major facility. They also had the National Geophysical Data Center, which now that’s been incorporated in what’s called the National Environmental Information Centers, I believe, or Center, one of three facilities. You had geophysics, oceanography, and meteorology that are all in different locations. Anyway, at the National Geophysical Data Center, I went to work for a fellow by the name of Paul Grimm, who was really into making maps. He was into alternative resources. The project that we were working on, and I’d applied for it because it was advertised in the NOAA Corps bulletin, was a position on the geothermal resource mapping team for the Western United States, primarily western U.S. There are geothermal resources elsewhere, but that’s the really hot stuff that generates power and that’s primarily in volcanic areas or in the Western States. Anyway, I started out. I was given the job initially of working on the Utah map. Utah has a number of sites, particularly west of the Wasatch Mountains in what’s called the Great Basin area. So I was working with them. I traveled a lot back and forth to Utah, but I wasn’t in the field doing mapping. We worked a three-legged project. The Department of Energy funded the project. State geologic agencies collected the data, provided it to NOAA. We incorporated it into maps of the various states. Anyway, Utah, then California, Idaho – I forget which map was the first. It doesn’t really matter. After a few months, this guy Paul Grimm decided he wanted to go into his own business. Looking back, he was a prophet of sorts concerning alternative resources. What he was mapping was the area’s best in the U.S. for both wind energy and solar energy. He was trying to sell these maps at the time. So he tried to go into business for himself doing this. He left the

government. At that time, I guess fortunately for me, I was selected as a chief of this particular group. The names of the people – Ron Smith was a contractor. He was really, more than anybody, the brains of the group; at least that's what I felt. It was sort of early GIS [geographic information system] in a way. He was computer-knowledgeable, but it was the old computers that you're sitting there with a node; you type into a mainframe that's somewhere else, and you have to write your own little programs and whatever. But he knew how to do all this. So we did some of the work via computer. The rest of it was classical work. We obtained negatives of the various states. By negatives, the map overlays, if you will, ~~from the~~ from the United States Geological Survey [USGS], their mapping group. Then we put most of these on – I guess the maps were one to a million for each of the states [Editor's note: actually, 1:500,000]. With that, we'd put on hot springs. We put in areas where they were already drilling for geothermal resources, areas that at least the state geologic agents people thought would be good for further exploration for geothermal resources. The other people in the group – Dave Clark, who ultimately became the deputy director of the National Geophysical Data Center, and then Joy Ikelman. Joy stayed with NGDC, as did Dave Clark, for thirty years or so. Afterward, they retired probably ten years or so back. But it was a good group. We traveled all over. By traveled, [we] had to fly to Idaho Falls [Idaho], where the Department of Energy had their headquarters for managing this project. Then University of Utah's Research Institute [Editor's note: subsequently renamed Energy & Geoscience Institute] somehow was their main technical expertise for overseeing the maps that we produced. Then each of the state geological agencies. So I could remember going to Las Cruces, New Mexico; Tucson, Arizona; Reno, Nevada; Sacramento, California; even Grand Forks, North Dakota because the deep wells there had hot brine, the deep oil wells and gas wells. Where else? Denver. We did a Colorado map. Basically anywhere in the Western U.S. we ended up going, even Kansas. The deep, deep oil wells in Kansas that were there, we were working on. That used up three years. I traveled about once a month out of Denver. Anybody who may listen to this, I recommend that in the summertime you only fly out of Denver in the morning and try to fly back in the morning because you always have big thunderstorms rolling off the Rockies, and it gets pretty bumpy coming into the International Airport there. That was about it at Boulder. [It was a] very nice town to live in, beautiful town. You have the Flatirons there, and your front range of the Rockies. So we made many day trips into the eastern Rocky Mountains – Rocky Mountain National Park, and some of the other locations there. So it was good. The kids, the two that we brought with us, of course, were growing. Then we had number three in Colorado, in Boulder. He was born in Boulder Hospital, which was actually – you could look out the window and you saw the toe of the mountains there. It was like two-hundred yards away. It was interesting. It was very close. So we ended up with an Atlantic baby, a Pacific baby, and a Rocky Mountain baby. About two and a half years into this, I was looking for another assignment. Actually, they'd asked me to – they wrote to NOAA Corps, asking [for] me to stay on to finish up the project. What happened in 1981, President [Ronald] Reagan was voted in, and alternate resources went out the window. So funding for those sorts of projects dried up. The project ended up just having a very short life after that, and we got back on the oil and natural gas routine that we're still pretty much – it's getting better. [laughter] At least, [that's] my opinion. I'm editorializing here a bit. Regardless, the head of the Marine Geology and Geophysics

[MGG] group – his name was Dr. Mike Loughridge. Well, I was looking for another assignment, continuing my quest for jobs that were out of the mainstream. I felt that with offshore oil drilling that NOAA should have some expertise in petroleum exploration and drilling so they could understand a little better what's going on when you have these well blowouts and offshore oil blowouts. So I thought to myself, "Well, okay. Maybe I'll try to get on with the deep ocean drilling project. That's a scientific project. NOAA, at the time – anyway, this deep ocean drilling project, I had talked this over with Mike Loughridge, who was tied into pretty much the marine geology and geophysics community. He said, "Well, I don't think that's too good. But I'd written my thesis with a group at Scripps Institution of Oceanography under Dr. Fred Spiess. Dr. Fred Spiess is one of the great oceanographers of the twentieth century. I think that you should try to get on with the Deep Tow group." This is early robotic vehicles. In fact, one of the firsts was the Scripps Deep Tow instrument package that they towed behind ships. They also had one of the first civil multibeam systems in the United States. Actually, NOAA had the first two civil multibeam systems. These are sounding systems that give us, as opposed to one depth looking straight down, you get a number of depths across a fan-shaped sonar pattern, if you will. Instead of one depth, today, you end up I think with as much as a hundred or maybe even more depths from one sweep or one acoustic emission. Anyway, this was an opportunity to then get on with what would be considered cutting-edge ocean mapping technology. Dr. Loughridge, basically took the bull by the horns. He contacted Scripps. Scripps issued an invitation to me to come and join their group, and this went through NOAA Corps. NOAA Corps agreed it would be good to have some expertise in this area. From Boulder, Colorado – this sounds almost like dream jobs. You go from Monterey to Boulder, then down to San Diego to Scripps in La Jolla, a beautiful area. So we next move to – this would have been 1982, mid 1982. Going to Scripps was sort of a revelation to me in a way. I'd always worked operationally, even the work at National Geophysical Data Center, although I was working with a number of fellows with doctorates and whatever. There was still only very highly technical data processing that went on there. Some of these guys were considered leaders in their various fields. It still wasn't a research environment. When I went to Scripps, that's basically what it was, and I came to know [Editor's note: world-class researchers] – I can't give myself credit too much. Most of what I was doing was learning as opposed to working with per se, but I was very fortunate that I was associating with world-class people in their respective fields. Dr. Spiess [is] well-known. He had invented the Deep Tow system, one of the first early remotely-operated undersea vehicles. He had invented a ship called FLIP [Floating Instrument Platform]. You can lookup FLIP. FLIP was like a great big spar buoy. It was about a three-hundred-foot long ship, but it wasn't self-propelled. They would tow it out to a given area, where they wanted to conduct studies, and then they would flood part of it so that it would go vertical. So the top, maybe seventy-five-feet of it, was out of the water, and the rest underwater. Then they use that for acoustic studies. Even in the roughest weather, it's only going to go up and down a couple of feet at most. It was a very quiet, what they call, acoustic platform, primarily used for defense purposes, but to understand the sort of noises and sort of noise propagation that went on underneath the surface of the ocean. The group he headed also had – I don't know if it was his group that had put the multibeam system, a system called SeaBeam on the Scripps vessel, *Thomas Washington*. Regardless, my two years spent

there, I worked a lot with that group. That was primarily the group I worked with I think four out of five cruises I went on were Deep Tow, one combined with SeaBeam, and one SeaBeam alone. I was introduced to these technologies, and started understanding how they could be used. The early multibeam systems were a step forward in our ability to visualize what the seafloor looked like. The technology prior to that was single beam, which would give you – as a ship went down a line, it followed its course, it would get one single depth per ping. So what you'd get is a string of soundings. But if you're mapping the ocean, maybe the next line at best would be ten miles away or so. You'd have these strings of soundings, and you have to guess what was in between when you went to contour the seafloor with these sorts of surveys. SeaBeam, on the other hand, it would totally – well, the term we used was – “insonify” a strip that was about a mile wide [Editor's note: depending on water depth]. With that system, if you were in, say four-thousand meters of water, it would insonify a strip that was probably about two-thousand meters across. In other words, it [Editor's note: the strip] was about a mile; you would see about a mile across beneath you. When you put these strips together, the actual mapping, you would get a topographic or bathymetric map of the seafloor, as they called it. Anyway, it really helped in the interpretation of the geology of areas, particularly areas that were very complicated. The mid-ocean ridge systems were major study areas, as were fracture zones. The continental borderland off of Southern California – SeaBeam wasn't used there; that was relatively shallow. SeaBeam was primarily used for deeper water as a rule because, if you can envision a fan; you're holding the fan at one end, and then as you get further and further from where you're holding it, it appears to get bigger and bigger as it spreads out. You can envision that for each ping of a sonar system. This is what it would look like. It would spread out perpendicular to the direction of the ship, and then you'd get a series of these pings, and that would produce the map for you. I was quite fortunate. I went on a forty-five day cruise led by Dr. Dick Hey, [from the] University of Hawaii, on what was called the Galapagos Spreading Center propagating rift cruise. On that cruise, they gave me the job of trying to figure out how to operate an early Global Positioning System unit, [which] was called Magnavox Y-Set. I didn't really understand what the software or anything was doing. We didn't have a manual or anything else. But it had been used by another institution for a number of years, but they'd never actually navigated with it. I sat there pushing buttons and watching what happened. This was 1982. There were only about four hours of GPS [Global Positioning System] satellite availability per day then. But during that window, I would sit there [Editor's note: pushing buttons] and see what would happen. Then, one day, I hit a combination of – actually, it was satellites, and the order that they came in. Magically, the positional error dropped from over a hundred-thousand feet to about a hundred and fifty. I said, “Whoa, this is doing now what it's supposed to do.” So we were able to do that a couple of days in a row, and they figured out how to integrate the GPS with their survey work that they were doing with the Deep Tow and the position of the ship on the surface as well. Accordingly, we surveyed. We were involved with the first actual survey lines that were run with a global positioning system unit on that particular survey. So that was - that was pretty cool. That was a fun thing. For the propagating rift cruise, I flew to Panama City, Panama, to join the Scripps ship from San Diego. Actually, there were a number of [Editor's note: prominent scientists on this cruise] – there was also Dr. Tanya Atwater, a very famous woman marine geologist and geophysicist. Dr. Roger

Searle of the British National Institute of Oceanographic Sciences and Dr. Bob Tyce, who went to the University of Rhode Island. I can't remember if there were any other – then a number of people who were affiliated with Scripps – survey technicians and computer people and whatever that were on that particular cruise. The next major cruise that I went on was to what's called the Garrett Fracture Zone, and that's in the tropical Pacific – if memory serves correct, it's at fourteen degrees north. I flew to Manzanillo, Mexico, for that cruise. Dr. Jeff Fox was from Lamont Doherty, which I think is called Earth Observatory these days. He was the chief scientist. Dave Gallo was a graduate student of Jeff Fox's that was on that cruise. He's gone on to be a major player at the Woods Hole Oceanographic Institution. If you've watched anything – I don't know if you remember a few years back; a French aircraft went down in the Mid-Atlantic. It was flying from, I believe, Brazil to Paris, but they had a very –they wanted to find that aircraft, to find out what had gone wrong with it, recover the black boxes. He led the expedition that actually found that aircraft using instruments that were much updated from the Deep Tow that I'd worked with. [inaudible] There was a group of people, obviously, who were operating this thing. Then there was a John. I believe his last name was Madsen. We called him "Mad Dog Madsen." That was sort of funny. He ended up at the University of Delaware. He's done a lot of work off of the East Coast. I saw some of his work a while back. Marty Kleinrock got a doctorate. I think he went to Woods Hole [Oceanographic Institution] afterward, [and] may still have a position there. It was quite a high-powered group. The Garrett Fracture Zone became a classic paper – I was told that later – at least in marine geophysical areas. Jeff Fox went on to head the Joint Oceanographic Institutions' [Ocean Drilling Program], or JOIDES [Joint Oceanographic Institutions for Deep Earth Sampling], whatever that was, a few years afterward. So these guys have ~~are~~ been major players in the earth science community, or a number them have been. I had one cruise that was actually a NOAA-supported cruise. The NOAA-supported cruise went to - went to an area that had been mined for manganese nodules a few years before, and they wanted to see what the environmental effects were ten, fifteen years after the mining had occurred. So we used the Deep Tow instrument to map that area. Doing that, they also put down what they called acoustic transponders, an array of these. They would figure out a best fit location for these each of these transponders, then they would navigate the Deep Tow instrument within these transponder arrays. So it was acoustic navigation under the water. It was a standard method – well, we didn't have global positioning system on that cruise or the Garrett Fracture Zone cruise, but used what's called transit satellite navigation to at least get a pretty good position for where we were [Editor's note: the ship's location on the surface from which the transponders locations were determined]. Two more cruises in the California Borderlands – short cruises that were doing a variety of studies, maybe a couple hundred miles out of San Diego. Anyway, over the course of the two years that I ended up at Scripps, I probably spent about six months of that time at sea and working with these guys. One of the projects that I got involved with was to compare the ability to define the seafloor with a surface-mounted multibeam system, the SeaBeam, with the Deep Tow single-beam sounding system that was down about fifty to a hundred meters above the seafloor. So came up with a pretty good concept of what we were actually seeing with the SeaBeam and presented that paper at what was called a FIG [International Federation of Surveyors] meeting. So then wrote a big report at the end of that for the Office of Ocean Minerals

and Energy – while I was actually working for them, my NOAA mentor was a Dr. Robert Dill. He was also a Scripps PhD, but he was working in Rockville, Maryland. So I'd contact him occasionally, and we talked a lot. He actually had his home in San Diego, California, out on Point Loma, a quite nice area. But he was back east for a year or two with NOAA. I'm trying to think here. It was Dill in [the NOAA Office of] Ocean Minerals and Energy that was then also responsible for law of the sea, and whatever NOAA had to do with law of the sea. I don't believe NOAA has ever signed off on that convention, or the United States Government I should say. But NOAA was working on it. One of the things that happened at Scripps that did engender, if that's the word, my interest in history of NOAA, and why I became as knowledgeable as I could become with that, is that I gave a talk to many of the "grand old men" of oceanography, who were at the Marine Physical Laboratory of Scripps Institution of Oceanography at the time. I was showing them stuff NOAA did and the sort of hydrography we're doing and the instruments we had and whatever. I ended up with a number of questions from them that I couldn't answer, and then some of them started letting me know what they had been doing and why they were number one on a number of things. I had no answer for them. I couldn't respond. I didn't have sufficient knowledge of the history of NOAA, the history of the Coast and Geodetic Survey, which was the primary ocean organization. Well, you had also the Fisheries folks in NOAA. I always consider myself an old Coast Surveyor. I apologize to Fisheries on that. Regardless, probably the Marine Physical Laboratory was more akin to the Coast and Geodetic Survey for the sort of work it did than Fisheries would have been, at least the group that I was working with. Anyway, I had no answer, and to some degree, was a little bit embarrassed. So, at that point in time, I said to myself, that's never going to happen again. I made it a point to learn all I could of NOAA history thereafter, I still do it to some degree. So I started reading all the old annual reports whenever I got access to them, and started trying to learn all I could about the history of NOAA, the history of NOAA Corps, the history of the old Coast and Geodetic Survey. So that's what engendered that interest. From Scripps, I learned two things. I wouldn't call myself a technocrat. What I did learn at Scripps from the standpoint of the instrumentation was its capabilities and how to use it, and what was the best way to go about using these instruments that could basically peer into the sea, if you will. So one of the things I did while I was there – I did write a letter off to NOAA headquarters at the time, suggesting – this was in 1983. President Ronald Reagan declared an exclusive economic zone [EEZ]. I found out that the United States Geological Survey was using a system called GLORIA [Geological Long Range Inclined Asdic], which was a large side-scan sonar system that gave a picture of the bottom similar to an aerial photograph. It could look out about fifteen miles on a side, so they were able to map large swaths, or at least get these quasi digital pictures of the bottom from this system. They were doing that. That was qualitative work. By that, a picture, if you will. And SeaBeam offered the quantitative end of things, where you get actually numbers associated with depth. I suggested to NOAA that they, at the time, see if there was any chance of partnering with USGS to somehow supply some depth information to USGS on this, and also to institute our own EEZ mapping program that I called EZ map. I wrote up a ~~one~~ plan for doing this, one way of doing it based on strips of data. Alexander Malahoff, who was the chief scientist of the National Ocean – I forget if it was "Service" or "Survey" at that time [Editor's Note: National Ocean Service at that time].

It changed names right around those years. He instead said that this is probably not the best way to do it, but instead to do a hundred percent bottom coverage. In other words, make sure that you insonify every square inch of an area that you're going to map. That, in truth, was probably the better way from the standpoint of interpreting the geology of an area or the geophysics. So NOAA did, in fact, start up EEZ mapping as the centerpiece of John Burns's "Year of the Ocean." I forget if this was '83 or '84 – announced that they were going to do an Exclusive Economic Zone mapping project. [laughter] I will state – this is not sour grapes. I'm glad that it all happened. But I was forgotten in this whole thing. I'm not even sure Alexander Malahoff was remembered as having done part of this. He headed a research group that had done mapping off the Oregon coast with a NOAA multibeam system on the NOAA ship *Surveyor*. They mapped a large swath of what's called the Juan de Fuca Ridge area. That was the basis of his experience with it and his knowledge that this would be better than just individual strips. Anyway, I even had people come up to me a couple of years later at various meetings, telling me that it had been their idea, "blah, blah, blah," and I just [said], "Okay, thank you." [laughter] It was really bizarre in a way. A lot of people ended up taking credit for that particular program. So I guess, in this respect, I'm at least saying I had a share of it. After two years, I left Scripps. I didn't leave Scripps. I was reassigned. I was reassigned to the NOAA ship *Peirce*, doing hydrographic surveys and some oceanographic work on the East Coast, working out of ~~in~~ Norfolk, Virginia. So we packed all the kids in the car, and took off and visited what relatives we could after leaving San Diego and headed to Norfolk, Virginia. I really couldn't even say how many times between geodesy and various assignments, I ended up crisscrossing the country. We saw a lot of the country, that's for sure. Anyway, I was on the *Peirce* for two years. During that time, I had a number of projects. I'm trying to think. We surveyed Delaware Bay. That was launch hydro work. I'm trying to remember the hydrographic survey projects we had. I know we did a little bit down in the Virgin Islands again, north shore of St. John Island. That's where the National Park is at. Boy, I'm just drawing a blank here right now.

MG: I have in my notes – Penobscot Bay and Delaware Bay

AT: Penobscot Bay. Good, good. Thank you. Spent about four months there. Actually, on the way to Penobscot Bay, we actually bypassed it initially. We went to a hydrographic conference that was in Halifax, Nova Scotia. We were an open house ship for all of the attendees from all over the world that were there. Then, from Halifax, that's when we went back down to Penobscot Bay and started work there. As a Mainer, you can probably appreciate this. I always jokingly said we had about four days of summer between July 1st and July 4th, and then the rest of the time was rain and fog and wind. Not really true, I know. In Penobscot Bay, that was a launch hydro project. Obviously, ships couldn't work in there. I think Deer [Isle] – I'm trying to remember if it was Vinalhaven or North Haven that was a little town on the island there. I think Rockland, Maine was our main in-port area up there. I finished that up in time for the Fourth of July and an open house in Baltimore. I think that's where it was – Baltimore, Maryland. So we went down. We were getting into a tropical storm period. So went down. Actually, I knew that there had been a storm brewing that was on the East Coast at the time, a tropical storm, not a hurricane. It ended up going just south of Long Island before



heading to the northeast. I knew that when I left the Penobscot Bay. In fact, I left Penobscot Bay a day early. I ended up anchoring on the north side of Cape Cod Canal because I figured the winds would be blowing out of the southwest at the time, big winds out of the southwest and big winds out of the west as far as that storm went and it's relative location. We ended up in like two, three-foot seas, even though we're getting forty, fifty-knot winds where we were anchored the next morning. It was seventeen, eighteen-foot seas on the other side. The crew, at that time, decided that I understood weather pretty good, so that gave them a little bit of faith because they thought I was crazy when I anchored there before going through the canal. They understood the next day. I don't know. That's ego speaking. [laughter] We still remember these things. Regardless, we went down to Baltimore. The best thing about that – I met two people, one of them who affected my later career, one who I was just pleased to meet. A fellow called Charlie Kearsse came aboard. I had no idea that was even his name. He was asking me all sorts of questions about the systems and how they operated and how we did all of this and what went on. He liked all my answers. I didn't know it; he was the head of electronic engineering at the Office of Fleet Operations at the time. He ended up requesting that after I finished up with the *Peirce* that I go to work for him. That's a sidelight of this Baltimore thing. I had no idea at the time. The other person that I met was Dr. Harris B. Stewart, and he had been the head of Atlantic Oceanographic and Meteorological Laboratories, [and was] retired at the time I met him. Also, he had been the first and only chief oceanographer of the Coast and Geodetic Survey before it was absorbed into, first of all, ESSA [Environmental Science Services Administration], and then NOAA. Dr. Stewart – very nice man. My family was there on that particular day that he was there. So he took a picture of all of us on the stern of the *Peirce*, which I still keep as a nice memento of that particular visit. We went down to Norfolk. I don't remember the order of business as far as what projects we had at that point in time. I think this was when we went to Puerto Rico after that. I did forget to mention that one of the earliest jobs that we had was in the Bahamas – not the United States, but it was a Navy-supported project on the east side of Eleuthera Island, which is one of the outer islands of the Bahamas, and also of San Salvador. San Salvador is believed by many to have been the landing place of [Christopher] Columbus. I don't remember if we surveyed the whole island, all the way around the island, or just a segment of it, one way or the other. We did have one tropical storm hit while we were there. Actually, it was sort of interesting. We saw the signs of it. We were in San Salvador. I knew we had something brewing, and it made up almost over the top of us. The ship headed south through Cat Island. It was sort of interesting. As we were going through this passage, the wind just shifted totally. It's like the eye of the hurricane thing. You're on one side. So yes, we went right through the center of the low-pressure system, but we ended up escaping the brunt of the storm. So felt pretty good about that one, too. I was lucky. Well, there's an old saying about sailors – “Are you lucky with treasure? Are you lucky with women? Are you lucky with weather?” A sailor always went with a guy that was lucky with weather. [laughter] The other stuff didn't matter so much. Anyway, that was probably the first project. I got this all scrambled up and backward. Then we had a trip down to Puerto Rico and the Virgin Islands. I remember the name of this one. This was tropical storm Isidore. We used to get updates on a telefax machine. Every six hours, we would get a satellite view of the area we were working in. There was a mass of clouds

that had been sitting just north of Puerto Rico for two or three days, and I kept saying [Editor's note: to watchstanders], "Watch that cloudy area, watch that." Finally, it made up into a tropical storm, and then it started moving north. It was headed right towards us. When we first got our first message on it, it was about three-hundred miles from us, headed directly our way, and we were headed directly towards the center of it. We watched that for a couple of hours as we're heading south, and it's headed north, just to make sure it didn't veer one way or the other. There is a classic way of going around tropical storms, and that's to turn your ship so that you have the wind on your stern. The wind is actually hitting what's called your starboard quarter. So, as the storm is moving north and we're headed south, the ship is moving with this angle where the wind is on its starboard quarter. This changes through time as the storm is moving with the wind directions changing and we're changing. We kept doing that all day long. The storm center passed about a hundred-and-fifty miles from us. We did have big seas – unfortunately, we rolled a lot that day. We had about eighteen-foot seas or so, but it wasn't real windy. It was about twenty-five, thirty knots was all. We went around that storm with a change in atmospheric pressure of only three millibars. So we basically went around on an isobar – that was pretty cool, too. I really liked doing that. [laughter] Anyway, weather was cool. I had made it a point, before going on the *Peirce* – actually, it was a publication from the National Climatological Center, [which] gave the tracks of hurricanes every year and the times, and months, and the weeks. Not that you can say for sure that this is going to be the true way that a storm is going to go, [but] you can get a pretty good idea. At least, you can start to understand what these things were capable of doing, and the tracks that they would probably follow. I'd studied that thing and color-coded all the various storms. So I'd done my homework with that stuff and then got lucky that I didn't get a wildcard storm. What else did we do? When we came back from Puerto Rico – that was the last project we were on. One crewman got very sick a day out of Puerto Rico, and I had to turn around and rendezvous with the Coast Guard helicopter to get a medevac [medical evacuation] off the ship. So we did have a medevac. That was sort of interesting because the *Peirce* is a small ship, but we figured out how to get positioned. You have to have the wind right for the helicopter and try to minimize the action of the sea. Other precautions had to be taken as the helicopter is doing the pickup. So we did this successfully; we medevaced a crewman from the ship.

MG: What happened? Why was he sick?

AT: He had some sort of heart palpitation. He was only about thirty-years-old at the time. I did hear, probably twenty years ago, that he died at that point. So he died fairly young. But at least we got him off the ship at that time. On the way back – this was in early December 1985. We got caught – you've heard of these bombogenesis – you have the big low-pressure centers off of Hatteras and that they develop quite quickly. Well, this was before bombogenesis became a word or at least a well-known word. We got caught in a bomb cyclone about two, three-hundred miles off Hatteras. We were headed towards Beaufort, North Carolina, to pick up a science crew at that point. We got caught in that. We had seventy-knot winds. That was the only time in my time at sea where I was actually – of course, being the captain, you can't show this, but yes, I was a little scared. You had the Gulf Stream headed north; you had these big winds coming out of

the northwest. This makes for a bad sea off of Hatteras. We were headed towards Beaufort. Not straight north, but regardless, the bow would get buried by waves. Then you'd sit there, looking at them. This is all at night, so that adds to the fun of all of this. The bow would just be buried. You're just hoping nothing rips off and lets in a bunch of water. The ship would be shaking as it came up out of the water. So every time you're wondering if it was going to make it back up. [laughter] I'm sitting there in the captain's chair, "Oh, this is all fine and dandy. No sweat, guys." That was a concerning evening. After, I'd say, twelve, fourteen hours of that, we made it into Beaufort, North Carolina. My wife was waiting for me there. The ship was twelve hours late. But we got in, and then [had] three days or so in Beaufort. We got resupplied. We put on a lot of science gear. We did a project with East Carolina University [ECU]. They were studying phosphate deposits on the North Carolina continental slope area. That was the last project the *Peirce* ever did. When we finished that, it was very successful. We did our job the way we were supposed to do, and the scientists were quite happy. We went back to Norfolk, and we were told that because of funding issues, they had to make a choice between us and the NOAA ship *Whiting*, the one that I had been operations officer on a few years before – and XO. The *Peirce* was going to be laid up. That's the way it goes. [laughter] It was a pretty little ship. There are two things I – well, the captain of the *Whiting* at that point was a friend of mine. His name was Marty Mulhern. They had official pictures of the ships – both ships underway, and making a nice bow wave, that sort of thing, as they were moving along. The *Whiting* had a little bit of rust that was running out of their scuppers and down the side of the ship, just a tiny little bit but you can see it in the picture. I said, "Marty, do you know how you tell the difference between these two ships?" He looked at the picture, and he said, "No, I can't tell any difference." I said, "Well, yours has rust on it." [laughter] He was annoyed by that. Anyway, no competition. Never any of that sort of thing. One other funny occurrence – and this was actually when we were working out of Delaware Bay, and we were working late in the year. I guess it must have been late 1984. We were headed down to Norfolk, Virginia. We'd been working for a couple of weeks, and we headed back down there to resupply, and to come in for a couple of days. It was a very rough night. There was a northeaster blowing, and the ship was rolling pretty good back and forth. One of the senior officers, name untold, stepped out on the bridge wing. I knew he was "feeding the fish [vomiting]." I said, "What's going on?" This guy was sort of an old sea dog. In fact, he ended up living on a sailboat after he retired. I said, "I've never seen you get sick like that." He said, "Well, I had some chocolate cheesecake. Must have been the chocolate cheesecake." So whenever I saw anybody seasick after that, I always said, "It must have been the chocolate cheesecake." [laughter] Anyway, that was amusing. There were a few other things, but this is getting a little tedious. One other thing that I always liked – the few times we were caught in bad weather, one of the sayings of the old boatswain – his name was Kemp Styron. I love this saying. He came from Harkers Island, North Carolina. We had a lot of Harkers Islanders. He said, "It blowed so hard, it blowed a rooster up a bottle." [laughter] Anyway, memorable people. Frank Gilliken could play the banjo, and occasionally he'd play for the crew. He was the chief engineer. A few other episodes that were funny. Johnny Van Willis was the chief steward. I liked him. A hard-working guy that kept things going. All these guys were career employees that you never see in the write-ups for the "great people of NOAA." The crews are the ones,

particularly the chiefs, that kept things going. Al Washington, one other guy. He was an African-American. The greatest guy in the world. Best natural boat handler you probably ever saw. One other thing I'll close out the *Peirce* with at the time – I always said that the boat crews – if there was a boat Olympics, they'd be hands-down winners. That was from the standpoint of operating the boat, staying on survey lines, but also – it actually takes a lot of skill, both letting a boat into the water from davits and the picking up with davits, particularly if it's a little bit rough at the time. These guys were all masters at that. They were really good. Anyway, that's the old *Peirce*, a ship that's probably razorblades somewhere now or has been. A good ship. The other thing I said about that crew was that without radios – if we were tying up or leaving port, the guys on the stern knew what the guys on the bow were doing without even talking to them. The crew understood what to do, when to do it, and it was a good crew.

MG: And it was named “NOAA Atlantic Ship of the Year” in 1985.

AT: Yes, we had done a lot of stuff that year. I guess the thing that we got that for, more than anything else – in spite of the fact that they laid us up – in the winter in-port, they slightly reconfigured the ship so that they could put on containers containing scientific equipment, and put on basically portable laboratories on the ship. It was designed, primarily, as a hydrographic ship. But as a test, to see if they could actually do oceanography off the ship. We had a couple of other projects as well that were oceanography-related. One of them – I think there was an atomic waste dump and ammunition dump that was somewhere off the New Jersey/Delaware coast that we went out and did studies on. There were various people from national laboratories. Once again, it's the crew; it's the officers that do all of this. We got their jobs done, and we got their equipment put in the water. Some of it, they'd put it down and leave it there for a week or two. Then we'd come back and figure out how to recover it no matter what the conditions were. All of the scientists we had during that particular year were pleased with what they got out of that ship. I think that was it more than the hydrographic work that we were doing. Everybody did hydro.

MG: I also wanted to ask about when you met Charlie Kears. What was the work he wanted you to do for him?

AT: Well, like I said, in 1985, they laid us up. Because I was superfluous, I was a captain without a ship. I was a commander at the time. Supposedly, the captain of a ship that was going to operate. Rear Admiral Wesley Hull was the head of the Atlantic Marine Center at the time. I got along with him very well. In fact, he was close to being a neighbor. He lived only a couple of blocks from where we lived. We lived in Virginia Beach when the ship was working out of Norfolk. He made me the management information systems officer for AMC for about a six-month period. I don't know if you talked to Charlie Kears or not, but Charlie Kears, in turn, had requested that I become the management information systems [MIS] officer for the Office of Fleet Operations. I will be blunt. I'm sure that anybody that I've ever talked to knows this about me. These were brutal jobs that I wasn't really psychologically fit for. You get the gist. I was a big project guy. That's the way I looked at it, at least from the standpoint of the work I did

and the work that I enjoyed for my own project. Regardless, after we left the Atlantic Marine Center, it would have been the spring of 1986, spring or early summer. Then we moved up to – NOAA headquarters was in Rockville, Maryland, at the time. Not NOAA – at least NOAA Corps headquarters was in Rockville, Maryland. I’m not sure where the – I guess NOAA headquarters was also there. All of those buildings have since been knocked down, and new buildings put in. NOAA headquarters moved to Silver Spring, Maryland. Anyway, Charlie Kearsse had requested me. I ended up becoming the fleet management information systems officer. This ended up being a thankless job, shall we say, because my job was to develop standards for early PC [personal computer] use if you will, and early software standards. A funny thing – and this is true of a lot of organizations – I will state this, from the standpoint of cooperation we got, that the Pacific Marine Center that was three-thousand miles away – anything that headquarters did was wrong and it was no good. The Atlantic Marine Center that was only two-hundred miles away, everything we did, they cooperated with. [laughter] For whatever reason. One of my jobs besides – yes, there was a big argument about what word processing system to use. PMC wanted one, and they refused to change. Headquarters and AMC [Atlantic Marine Center] used another one. Trying to sort this all out and transferring files back and forth, of course, sometimes there were problems. The other thing that was part of my responsibility was the equipment failure and reporting system. Supposedly, this was a job to make the management of the whole fleet easier, but the way that the system worked or that it was designed to work – it was also meant to help headquarters ostensibly make things more efficient and less costly. If a piece of equipment broke down on one ship and they didn’t have that spare part, but you knew that another ship did, you could get that and not spend that money at the time. But instead, what happened is most of the chief engineers basically hunkered down, and they wanted to protect their own stash of gear. This equipment failure and reporting system – myself and a Dr. Ron New, who was an adjunct professor at Johns Hopkins University, was like my technical aid on this. But it was our respective job between the two of us to try to introduce this to the fleet and try to work out all the bugs, basically, because of – I’d say part of the social attitudes – I don’t think it was so much the technology – folks just flat-out resisted this. Part of the problem at the time also – this is a personal opinion. I’m sure that some of the other folks involved would say differently. I don’t think Charlie Kearsse would. But the way that memo writing worked at the time – this was really ridiculous. I would write a memo. I would talk to a guy out in Seattle or down in Norfolk. We’d identify a problem. We’d come up with what we thought was a solution or [say], “This needs further looking into.” Okay. I would have to send this memo through Charlie Kearsse. He would have to send it through the deputy director of the then Office of Fleet Operations or whatever it was. He would then have to send it through the director of the Office of Fleet Operations, who was an admiral. Then he would send it back down through the same chain. I was the fourth guy in this chain. By the time it got back, it was all marked up. Everything had to be changed. Each guy that was in the loop wanted to change it his way. It would take six months sometimes to get a memo out that everybody could agree on. [laughter] It was ridiculous. You could put that in, too. It was the stupidest thing I ever saw, and I don’t care who hears that. [laughter] One of the things we had to do – this was a big deal, too. We were under orders [to take communications training]. I guess, for some reason, occasionally the government goes

through these things where you have to learn to talk plain talk to your constituents, and you have to write letters that are plain talk. Part of this plain talk was that when you write a letter, you don't say "we," or "the organization," or "the Office of Fleet Operations says." You say, "I say." It was a big deal. Everybody had to take this communication class. The first letter I wrote like that, it came back – "The Office of Fleet Operations promulgates the following policy." I said, "Okay." [laughter] No more "I" in any part of this. It was a lesson in headquarters-ese. Anyway, I'd spent seventeen years in the field, and so this was a revelation to me. So what happened next? I spent about a year on that project. The head of NOAA Corps – not the head of the Office of Fleet Operations – the head of NOAA Corps was senior to the head of the Office of Fleet Operations. He thought, and probably for the best that NOAA Corps officers [should identify more with the armed services], a lot of them [Editor's note: NOAA Corps officers] were pretty slack. I've probably never been the most militaristic guy in the world. But he thought that we should become more aligned with the other services. As a consequence, one of the first things he did – they started these NOAA Corps parties, so to speak, called "Dining-Ins" and "Dining-Outs." These are where you get dressed up in your dress uniforms, tuxedo-type affairs with the gold sashes around your waist, and everybody goes and admires themselves. This is good. It builds esprit de corps. Well, I'd mentioned, I think early on to you, that even in high school, I only went to two proms, and that was it. I decided I didn't like that too much. I didn't go to this first one. Admiral [Francis D.] Moran wasn't one to take such slights sitting down. So he called me into his office and asked me why I didn't go. Well, this was the truth. I honestly believed at the time that this was going in the wrong direction. I believed, as opposed to becoming more like our military compatriots, that we were a technical organization, and what we should be doing is honing our technical skills and building more technocrats as opposed to making ourselves more like the other services. I expressed this to him. I honestly believed that the next thing I'd hear from him was a letter asking for my resignation. Instead, what he offered me was to be head of the Exclusive Economic Zone Mapping Project. I'm eternally thankful to the man for that. [laughter] That was exactly what I wanted to do and had for a couple of years. The EEZ project at the time – it had been going for three years, past the time when I had been at Scripps and had been introduced to a lot of this technology and the stuff it could do. Actually, one of the admirals – the head of Charting and Geodetic Services – had asked that I be the head of EEZ when it first started up. But the powers that be decided I needed to have another sea tour, which was okay; that's good. That's what we do. We're a sea-going service, primarily. He'd asked a couple of years before, [and it] hadn't happened. Well, in that time, for whatever reason, they'd been through about four or five heads of the program. They either didn't understand the technology or they didn't understand the geology or policy reasons for the program– or even have an inkling. I won't say I understood all of either, but did know how to integrate the technology with where are the high priorities areas for mapping. What should you be mapping, early on, at least? So they'd been through these number of people, and they put me in there. Perhaps hubris, but I did see the big picture with the project. Accordingly, when they put me in, things did start happening quicker and better than they had in the past. As the old boatswain also said on the *Peirce*, "No brag, just fact." I had a group of people – a very smart group of people. The three biggies that made my life much easier were Alan Greenberg, who wrote a lot of

the processing software for SeaBeam data, integrating with the navigation; Steve Matula, who did a lot of the software and built new products. Steve is now the head of – I'm not sure the right word. He's with the National Geodetic Survey and the head of their digital people, whatever that involves. Alan Greenberg ended up with the Office of Coast Survey's Coast Survey Development Lab as a programmer. Then, Dan Herlihey, who was a NOAA Corps officer, who had been on a SeaBeam ship, and he understood all of the processing and a lot of the problems that went on, on the ships. Then a couple of other junior officers. I'm trying to remember. And two other civil service people that were involved with the project. The junior officers – I remember Bruce Hillard and Patty Lynch. Then Paul Grimm, the fellow that had been my boss initially in Boulder, Colorado. He didn't make a million dollars making alternate energy maps at the time, and he ended up coming back to work for the government. We advertised for another scientist, maybe as a programmer; I'm not sure which, but we needed one more person in there. Paul was working for the Census Bureau. His wife worked for the USGS in the Washington, D.C. area. He saw the advertisement, and he applied. Then, to my surprise, I ended up being [his boss] – well, I hired him because he was ocean-knowledgeable. He ended up doing a lot of stuff for us. He wrote the first – this won't mean a lot to a lot of people – ray-bending programs for the SeaBeam. By that, when sound goes through the water, at different layers of water, there are different temperatures and different densities. The waves will be bent, like a prism with glass, if you will, or a prism with light. So the rays are bent. This would slightly change the position of the soundings that we were mapping and acquiring and making contour maps from. So he wrote that. Early use of a program called SURFER, which was early three-dimensional – you take a bunch of data and make three-dimensional imagery. He started doing that for us. By the same token, Steve Matula was doing the same with another larger program. Paul was working on PCs. Steve was working with what we called mainframes. He was taking huge amounts of data. Anyway, the first map that we made was the Monterey Canyon map – a pretty map. If you're interested, I can show you some of these. They're online at what is no longer the National Geophysical Center, but still the Boulder part of the new organization [NCEI]. So Monterey Canyon was the first map. Dr. John Knauss was the head of NOAA at the time. He was the administrator of NOAA. He was a Scripps PhD, and he absolutely loved that map. He showed that map off everywhere. It was a beautiful map. We have the maps for – you can see a lot more detail than any maps that had ever been produced before of the continental slope and shelf. Actually, these maps were so good that the Navy classified us for a number of years. [laughter] That wasn't my fight. That was my superior's fight – Captain Chris Andreasen, who was head of charting at the time. Probably during my tenure there, which was a little over three years, we probably surveyed over 125,000 square nautical miles of our exclusive economic zone. That's an area [the EEZ] that goes out to two-hundred miles off the coast of the United States. So we surveyed a lot of the West Coast – California Coast, Oregon Coast, a little bit of Alaska, a little bit of Hawaii – probably two-thirds of the petroleum and gas area of the Gulf Coast – Texas-Louisiana slope, as it's called. We made a lot of discoveries during the time – stuff that had never been seen before. Some of the biggest salt domes in the Gulf of Mexico we discovered. We named them for the NOAA ship *Mount Mitchell*. That's Mitchell Salt Dome. We didn't want to have Mount Mitchell Dome. We thought that would sound sort of silly. Whiting Dome. Then there was a USGS ship called the

*Farnella*; there's a Farnella Dome. We discovered a lot of basins. We probably named a least a hundred features that went through the U.S. Board and Geographic Names between the Gulf of Mexico and other parts of the coastline. So a lot of the names that went offshore, we were responsible for at that time. What else transpired? We called that the skunkworks where we were. When they classified us, this was silly – well, I don't know if it was silly or not, but they had to do it. We were working in the basement of a small building behind the main buildings that were the NOAA headquarters then, or the National Ocean Service headquarters. They were back behind, out of sight of the main drag. We were down low, but they decided that for our processing so that nobody could pick up the electromagnetic emanations that came from our processing, they had to build a big steel cage around our computers. I don't mean a cage around the computer itself. I mean a room that was probably twenty by thirty feet in its dimensions, the computer stuff in there, all of our magnetic tapes. It had to be on the ceiling – everywhere that somebody thought they could pick up these emanations. That was a four-hundred-thousand-dollar job. We always jokingly said that we should just let it be. If the Russians are out there trying to get this, let them get it, let them learn to process it, and then we'll steal the data back from them. But that's not the way it was. Regardless, the government built this big cage, and that's where all of our processing went on. We had a little factory going, and a little skunkworks, where the smart guys did their stuff. They were all smart. It was a good team. We had people that were processing surveys. We had people that were doing quality control on the surveys, people writing new programs and dreaming up new ideas, what we could do with this data. It was a really fun job.

MG: Can you define what “skunkworks” means? I'm not familiar with that term.

AT: That means a research group, a bunch of people developing new stuff. It's used a lot in industry as well, that this is where you have these research people doing weird stuff relative to the rest of the organization. There is one thing about that that I will state. The old line Coast Survey folks – at that time, everything was still pretty much manual hydrography and manual hydrography and manual processing. We did everything start to finish digitally. We did not generate – at least during the survey acquisition – a piece of paper. This was just totally out of their realm of experience. They were used to having rolls of fathograms. I don't know if you ever saw paper fathograms, where, as the ship is going along, there's a roll of fathometer paper that was sensitive to a stylus that would basically show the profile of the bottom as the ship moved along on a line. During surveys, you would generate tens of rolls of fathometer paper that would then be reviewed, looking for high points, low points, something that may have been missed during the survey. This was something at the processing facilities both at headquarters and the Atlantic and Pacific Marine Center would be looking at for the surveys coming from their respective areas. You also had reams of paper that would come out that had printouts of the navigation information, print out the depths every twenty seconds or ten seconds, whatever you told it to do. The tide correctors – all of this. Each survey would have boxes of paper that would be associated with it. Then everything would be printed out on a – well, the final smooth sheet would be a mylar sheet that was printed out. In the old days, it was a linen-backed paper that didn't stretch or shrink much. In the old days,



it was all hand-plotted. In fact, I believe the earliest machine plotting that was done for surveys was a big flatbed plotter at the Pacific Marine Center in Seattle that was called the “Iron Ensign.” The reason it was called the “Iron Ensign” is because ensigns on the ship did all the hand-plotting of the old surveys. So as opposed to a human being, a very low-ranking officer doing all of this very tedious manual work, the “Iron Ensign” could be programmed to do this. Anyway, still, you had all this paper and all of this other material to go with these surveys. In turn, everything was being done digitally [with EEZ mapping], even the making of negatives. That’s when the print maps – in the manual days, you would be making your negatives. Each sounding would be hand-stamped. The coastline would be all etched in by hand. All of the names of cities, all of the notes that were on the chart, all of this would be stuck on there by hand before you – somebody was an expert with the old printing methods. They’d have to tell you how many overlays you’d have to have that would go into the final printing of the chart. All of this was manual work. We were actually the first ones that virtually eliminated much of this manual work. I forgot to mention another fellow who was very instrumental in the success of the EEZ program, the mapping program, that was a NOAA Corps Officer, Tim Rulon. Tim was a go-between between us and – once again, I’ll mention this name – Charlie Kears, with the electronic engineering division over in the Office of Fleet Operations. The electronics people in Fleet Operations were responsible for installing multi-beam systems on ships. They ultimately installed five multi-beam systems during that period. They also were responsible [for] co-software development for the processing or the shipboard acquisition of the data. But we basically worked hand-in-glove with the electronics people over in Fleet Operations. But Tim was the guy that worked with both groups – a brilliant electronics engineer. I was fortunate that my next assignment, he actually ended up being operations officer with me and then, ultimately, executive officer. That was on the NOAA Ship *Mount Mitchell*. That was the next job afterward. Tim also oversaw a contract – one of these small business something-or-other contracts to exploit the global positioning system – I’m trying to think of another word – to be used for hydrographic survey purposes. So he was involved with the early development of GPS, such that it just was automatically integrated with hydrographic surveys. What this did – when GPS became available twenty-four hours a day – in the old days – well, not even the old days. For the forty years before that, NOAA Corps, the Coast and Geodetic Survey, they had to install their own electronic navigation systems that were sufficiently accurate for hydrographic surveying. That absorbed generally probably thirty percent of survey time associated with a given survey. With automatic GPS, this was basically thirty-percent more time that was available for surveying. So it was a major leap forward in efficiency in hydrographic surveying. The same way that, ultimately, the introduction of shallow water multi-beam was revolutionary– all of our stuff was deep water, but shallow water multi-beam and side-scan sonar units, they were able to look between the lines – by look, obtain data between the lines that the old single beam survey work wasn’t able to. You sort of had to guess. A lot of times, the rocks and other obstructions would be missed. With this, they could also get one hundred percent bottom coverage. So he was the one initially responsible for getting GPS as a standard survey tool for what today is the Office of Coast Survey. He should be remembered as such. So, three years – fun time. During my home time during this, I got to do a little bit of coaching of Little League baseball and a little soccer here and there – baseball for the boys, soccer for my

daughter. So I had about a three year time that I was doing that. Well, more than that – ‘86 to early ‘91. ‘91, that full year, I was on the NOAA Ship *Mount Mitchell*, primarily surveying in the Gulf of Mexico. Basically, ship hydro. I had a pretty good crew there. A few problems I’m not sure I want to [get into]. I had some personnel problems on that ship, and that was primarily it, that sometimes made life a little uncomfortable. Basically, we got a lot of work done, and that was the main thing. One other thing – I didn’t expect this, but it did occur. In the Western Gulf of Mexico, there are a lot of – actually, the bottom looks like a moonscape, if you will. There are a lot of very large basins that are relatively deep. By deep, five hundred meters deep or so. I don’t know the exact numbers. I can’t remember. We’d actually named a lot of these basins before. The ship surveyed a couple of these while we were in the Gulf of Mexico. One of those, a fellow – it would have been about twenty years later, a fellow at Texas A&M, who had been a NOAA employee – myself, I’d surveyed one of those basins. Three other captains had surveyed basins that had gone unnamed. We didn’t have names for. So I ended up with a basin in the Gulf of Mexico named Theberge Basin. I like that. [laughter] So one of these undersea features, I ended up getting named after myself, but there were three other captains that did also. That was standard. The ship’s captains, sometimes scientists that had worked in various areas – these are some of the names that are acceptable by the U.S. Board of Geographic Names for naming undersea features. Land features, before you can get something named for you – and this is not a recommended method – you have to be dead for five years, generally dead for five years. [laughter] So that’s not good. The *Mount Mitchell*, we in-ported during that time out of Pensacola. Some of the in-ports at the Navy base there. We hit New Orleans at least once, and then Galveston. Those were the three main ports for us during that time. Ship-handling going into some of these was interesting. The *Mitchell* was a little bigger ship than – well, it was two [hundred and] twenty [feet] or something like that. The *Peirce* was only one-sixty-five. Some of the ship-handling problems – Pensacola was interesting one day with a big wind blowing and a strong current going across the pier face. We backed into the space between the piers and laid the ship right in next to the pier. The Navy line-handlers on the pier were impressed. Then New Orleans was interesting. The Mississippi River was actually at a flood stage when we went in there, and currents were really strong. It was funny. The pier face had the current going up-river. Then the current out in the river was going about seven knots, a really fast current downstream. When you cross that current, all sorts of weird things happen with ships. Actually, we had a pilot on board. I can attest that he did most of that. He was suggesting very emphatically what to do. He knew what to do. He’d been there a lot, a Mississippi River pilot. Regardless, it was very pretty the way the ship came in. It was heading straight in at the dock at about four or five knots, which is very fast. Then, just as you cross that point of the current, you shift the wheel very hard. At that point, it was a very hard left. You get the bow thruster going full blast. Then you reverse the engine and pull the stern in. The ship just laid in there, and then it stopped right next to the dock. [laughter] I almost chickened out and backed out about halfway through that. When I saw the ship turning parallel to the dock, I said, “Yes, this is good.” Going in pretty fast, I wasn’t too pleased. That was a memorable landing coming in. That’s what they call it with ships also when they sometimes dock. A few good things – went to the [Audubon] Aquarium of the Americas. I think that’s the one in New Orleans. I went to that. That doesn’t matter – some of the

touristy stuff. I got off the ship in November or December after the year. The ship ended up going on a project, which I thought was a total boondoggle. It was the end of EEZ mapping, too. It was sort of sad. They decided it was too expensive and they were going to start using the ships otherwise. Almost twenty-five years later, President Donald Trump declared in November of this year [2019] – I just happened to see this – that they want to start mapping the EEZ again. [laughter] A couple of reasons for that. Where did I go from there?

MG: You started to say that the ship was being diverted to a different project.

AT: “One Hundred Days for the Environment,” is what they called it. The “One Hundred Days for the Environment” was during the Kuwait-Iraqi-Gulf War that Saddam Hussein dumped about five-hundred million gallons of oil in the Persian Gulf. So some of the folks in NOAA decided they wanted to go study this oil spill. So they took the *Mitchell* off EEZ mapping. I had no desire to be part of that, to be blunt. They went to the Persian Gulf for a hundred days on a diplomatic mission and a science mission – part-diplomacy, part-science with our good friends that we have in the Persian Gulf. We all know how that ended. [laughter] Never mind. I guess one guy I should mention on the *Mount Mitchell* was the old [boatswain] – well, at the time he was seventy-one or seventy-two. He kept working. His name was Joe Dimartino. I guess this is just putting in a plug for some of the people we had working for us, but he’d been one of the original underwater demolition team people, which was sort of the forerunners of the Navy SEALs [Sea, Air, and Land] during the Second World War. He actually was involved with blowing up some of the obstructions that were on the D-Day beaches. This is sort of interesting. I know that after I left – maybe it was while I was there or just before I was there. I’m trying to think. The fiftieth anniversary of D-Day – what would that have been? That would have been ‘94. It would have been afterward. He was invited to the SEAL headquarters in Little Creek, Virginia. I think that’s where they are. Regardless, he was the guest of honor. He was a legend. If you look at the guy, you wouldn’t have any idea that was the case, but he was a legend with the Navy SEALs. I thought that was pretty cool.

MG: What was the next thing you did after the *Mount Mitchell*? And remind me what year this is.

AT: Yes. Late ‘91, early ‘92 to [when] I retired in ‘95, I was on staff to the director of NOAA Corps. Most of that time, it was Rear Admiral [Sigmund] Petersen, a fine gentleman, very compassionate. He cared for the corps. It was, in a way, a boring time. There wasn’t a lot going on from the standpoint of big projects. I ended up being a somewhat gofer. I would occasionally be asked to write position papers or speeches. One of the things I ended up doing at that time, and that Admiral Petersen allowed me to devote a lot of time to was writing the history of the NOAA Corps, which started with the old Coast Survey. I wrote the equivalent of a – well, it was an online book, about six-hundred pages, *The Coast Survey, 1807-1867*. I wrote a good part of it and did a good part of the research during those couple of years that I was on staff at NOAA headquarters.

MG: That's something I want to hear a lot more about – what you learned and the resources you used. Can you talk me through that process?

AT: I'd actually started looking at the history of the NOAA Corps when I was on the *Mount Mitchell*. Actually, even before that. When I was in MIS and EEZ – spare time, I'd be reading annual reports, talking to some of the old-timers. I didn't have the technology we have today and really floundered around, but I tried to call as many as I could of living officers who'd been in the Second World War, who had come into the old Coast and Geodetic Survey, even in the 1920s and 1930s. I did catch a few of them. A lot of them were pretty old. I had one – I don't know if this will happen to you; I hope it doesn't – in the week between calling him the first time and the second time, he passed away.

MG: I had reached out to Rear Admiral Harley Nygren shortly before he passed away, and so didn't have the opportunity to interview him.

AT: You start to get to know a guy, and then whoops, gone. Harley is one of the greats. Actually, I found online somewhere – I'm going to have to look this up. I know that he had an interview with Arctic and Antarctic polar people. That's online somewhere. I don't know if you'd want it to give a little fill-in.

MG: Sure.

AT: I'll see if I can track that down. I don't guarantee I can find it. I may have extracted it and actually have it sitting in some folder that I lost long ago. But we'll see if I can track it down. Anyway, I started looking at the history of the Corps, probably when I got off the *Peirce*. The NOAA Library was next door, and I spent a lot of time, at that time when headquarters was on what was called Executive Boulevard. That's where I did a lot of the EEZ mapping work initially as well. Anyway, the NOAA library was right next door at a building of its own. I mentioned I always loved old books. I spent a lot of time rooting around in the library there. The library extended - actually, there were books that went back as far as – I guess the oldest book in the library – I'm not sure I saw it at that time – was [from] 1485. I was looking primarily through old Coast Survey stuff, just rooting around through the library. Most of their stacks were in the basement, it seems, or at least the part of it that I was looking at. So I became quite familiar with the Coast and Geodetic Survey collection, and, to some degree, just because – I recognized valuable old books when I saw them - I knew that they had this treasure sitting down there. Anyway, I spent a lot of time down there, did a lot of research. Even when I was on the *Mount Mitchell*, I asked for them to send me copies of the annual reports of the Coast Survey, which I would study and take notes and transcribe portions of it that I thought were interesting, and keep all of that information in various files. I don't know if I had any idea that I was going to ultimately end up writing a history of the Coast Survey or NOAA Corps at that point in time. I guess I was doing it more as a hobby or as a – what do you call it?

MG: Avocation?

AT: Yes, an avocation. Yes, there you go. Do it as an avocation. Anyway, I was studying this stuff. Then, when I was on staff to the director of the NOAA Corps – I think even before this - I know I'd written a number of articles for the Association of Commissioned Officers at NOAA Corps. I'd written a number of articles. I'd interviewed a number of the old-timers if you will. Among them, a Rear Admiral [Robert] Knox, Harry Garber – he was a retired C&GS captain, Francis Popper. I'm trying to remember. Then I found some of the families, and they would send me stuff. During this time, they'd be sending me stuff. I'd get family albums that they had, pictures of what these guys did. I ended up somehow getting these things done by commercial people – getting slides made of the photographs, so ended up with a fairly large collection of historic photos relative to the work from I'd say about 1920-on, through the 1970s. I was studying this stuff, still interviewing people. People would send me artifacts. I ended up with two ship bells, one from the *Hydrographer*, the Old Coast and Geodetic Survey ship, and another from the Coast and Geodetic Survey ship *Explorer*. I had one painting of the – not the War World II *Pathfinder*, but the first *Pathfinder*, which was built in 1899. I had a very nice painting of that, but did have some problems with that, but managed to keep it with me. What else did I get during that period? A D-Day map of Omaha Beach, a printing of that that was framed. By “got,” I don't have any of this stuff. I didn't keep it. It ended up with the government. Regardless, I had been contacting a number of families, talking to everybody that I could, and trying to [Editor's note: collect as much historical information as possible] – and going through the library. The library ended up getting shut down at that point for about four years. I don't remember the exact years that it was shut down, but it turned out that it had asbestos in that building. So they basically closed the library off as they removed all of the asbestos. So there was a time in there when I couldn't play as much as I wanted to, study, acquire information. Anyway, I ended up retiring from NOAA Corps in 1995.

MG: When you were doing your research, did you work with Bill Stanley?

AT: I know you talked to Bob Hansen. I don't know if you've interviewed Bill Stanley.

MG: No, I haven't. Is there anything I'm missing before your retirement?

AT: I don't think so. What's sort of funny – usually, you think it'd be Republicans that are downsizing everything, but during the Clinton Administration, you had Al Gore with “Reinventing Government.” They wanted to get rid of NOAA Corps. Actually, the administrator of NOAA at that point in time also wasn't a fan of NOAA Corps per se. He'd come out of the academic community. Anyway, NOAA Corps ended up getting downsized from about four-hundred to about two-hundred. I don't know if anybody else brought that up with you. Regardless, I was a superfluous O6 [captain rank] that was never going to make Admiral for a variety of reasons. One, career choices. I probably did express opinions that were counter to current beliefs. I was really pissed off when they shut down EEZ mapping. [laughter] They downsized to two-hundred. Like many of my other colleagues, I was asked to politely leave, which I did. It was time to move on

anyway. I wasn't accomplishing all that I would have liked at that point in time. After retirement, the first thing that I ended up doing was I got a job as a teaching assistant at a local high school. I was teaching computer science. Actually, it was pretty basic computer science. I ended up teaching kids how to use a word processing program, database program, and spreadsheet sort of stuff. I did that for a little over a year. During that time, the NOAA Central Library had called me and asked me if I would come in because I was familiar with the collection, and there were people there that knew that I'd spent a lot of time in the library looking through stuff – asked me to cull their C&GS collection. I had to look for redundancies, books that weren't necessarily related to either the history or the science of the organization, or books that were semi-redundant, this sort of thing. So, I had a small contract with them to do this. After I finished that contract, I guess there was a lull of a month or two, but for some reason – I don't know if somebody resigned or quit, but they contacted me and asked me if I wanted to work on the reference staff as a contractor. That was twenty-dollars an hour [and] forty-hours a week, versus eleven dollars an hour for thirty hours a week and three-months off with the school. Having kids in college at the time – I did have retirement from NOAA Corps, but that didn't cover all of my expenses, to say the least – I jumped at the chance. I said, "That's great." A year and a half later – actually, this is a little morbid. I don't know if you want to put this in here. One of the permanent federal employees, her name was Betty Petersen, developed a rare lung disease and had to resign. She ended up passing away shortly after her resignation. One of our satellite NOAA libraries is named for her, the one that's in College [Park], the Betty Petersen Memorial Library. At least, that's the nonofficial name of it. I'm not sure if the government building they built over there that they're leasing – there are rules for naming rooms. When she passed away, they had a federal position open up. I'd been working for the library for close to a year and a half at that point. I applied, and I obtained the position. Instrumental to me working in a library was a lady by the name of Janice Beattie. She was then the chief of reference. She later became the director of the NOAA Central Library. I was very fortunate. I don't know if you've gathered from some of the earlier stuff, I haven't always done what everybody in the universe has done as far as their way of approaching work. She was very amenable to me producing new products in the library. I came to the library at a time when the internet was really just taking off as far as for the exchange of information and the acquisition of information. The library didn't even have an online catalog at that point in time. I forget the exact timing of this. It was probably while I was still a contractor that the library had got its initial library catalog online. At the same time, I'd been transcribing – not just transcribing, some of it was tracking it down from book to book or from annual report to annual report – a bibliography – I'm not sure that's quite the right term – of all of the appendices of the Coast and Geodetic Survey annual reports to make it easier for researchers to track down information out of those reports. That bibliography ended up going up as the first subsidiary adjunct product of the NOAA Central Library a few weeks after the catalog went up. About the same time, I think I was still a contractor at the time, before I became a fed, I had when I retired from NOAA Corps – well, all of these artifacts I told you ended up in my basement. NOAA Corps didn't want them. They'd all moved over to Silver Spring. We were in a building in Rockville at the time when I was writing the history. They'd moved. They didn't care about any of this stuff. I had a couple of ship's bells. I had the painting. I had the D-Day map. All of that stuff

was residing in my basement. I also had about four-thousand historic slides that I had taken that I had with me that nobody wanted besides me. Nobody even knew what they were. I had these with me. I had a woman come to me. She was the webmaster for NOAA at the time, the head webmaster. Her name was Janet Ward. Janet Ward came to me and said, "I'm trying to jazz up the home page, and I heard you have some historic photos." I said, "Yeah, I do." She said, "Well, I'm trying to get some pictures on the homepage." Well, I brought in my albums of C&GS slides and said, "Here they are. Take the ones you want and do what you can with them." She had a lightbulb come on and said, "I can make a photo library." She was very competent digitally and able to – she understood the internet. She understood the software that went with it. She was a good coder, if you will, as well. She started digitizing these photos. At the time, she said, "Do you mind if I do these?" I said, "Well, I can break your back with these." Well, she was smarter than me. So I ended up doing most of the digitizing over the next twenty years with the NOAA Photo Library, what digitizing there was, and also building the database that went with it. That was the start of it. I guess that first year, we put up a Coast and Geodetic Survey catalog that was very crude by comparison with what it is now. Then year by year, we ended up – we never did get it perfect the way we wanted to. She was the webmaster, and she would do this in her spare time. Then she went to the Office of High Performance Computing and Communication. She was able to keep working on it there pretty well. She ultimately went downtown to the Office of Communications, where her immediate boss didn't care for her working on that project, so we did this clandestinely. She set it up so that I would be able to add photos to the photo library ultimately from my end, but she still had to do some processing at her end. So I would hand her a – I don't know how many gigabytes – disk with a bunch of photos and the database that all had to be integrated together. She would take it home and process it. She'd take it home, process it, give it back to me so that I could then load the processed images and the integration of the database and the photos together on the photo library. That went on for – actually, even after she retired, she kept doing it. [Editor's note: This partnership lasted for nearly twenty years and also resulted in the former NOAA History website.] Ultimately, we ended up with, I'd say, over eighty-thousand pictures that we ended up together putting on the photo library. We ended up trying to cover as much of NOAA as we could. From my NOAA Corps days and Office of Fleet Operations, I knew lots and lots of people at NOAA in different places throughout NOAA. Still a lot of NOAA Corps officers that had been junior officers under my command, but I'd contact them to see if they had anything they could provide, or conversely, if they knew anybody who was a good photographer that was interested in sharing. Virtually all of the photos in the photo library were donated by NOAA people. There were a few outside people that would contact me occasionally and say, "Hey, look, I've got some nice weather pictures or whatever, and I'd like to have them be part of the photo library." [Editor's Note: Some dialogue is lost here due to a poor internet connection.] The people I remember – Sam DeBow, Cheryl Oliver. I think Cheryl was in on that at that time. [inaudible].

MG: Skip, we're losing our connection. You're freezing up.

[TAPE PAUSED]

AT: What was the last thing you heard?

MG: You were talking about the preparations for the 200<sup>th</sup> anniversary.

AT: In 2003, I called a few people – friends, acquaintances, people I knew who would be sympathetic to the concept of a 200<sup>th</sup> anniversary. Sam Debow, a former head of NOAA Corps, was one of these people. Bob Hansen showed up at some of these meetings. I don't remember who else.

MG: Cheryl Oliver?

AT: Cheryl Oliver. Yes, I mentioned Cheryl before. Once again, Janet Ward if I haven't mentioned her before. She supported most things that I did there at NOAA. It was good. Actually, her daughter, sometime around then – I don't remember the year that she came to the library as a – her daughter came to the library when she was fourteen. She asked if she could have her working at the library there during the summer, a summer intern. Actually, it was unofficially done. Janice Beattie, once again, the library director, said that was great. Now there's laws that you're supposed to have kids that are sixteen. I don't know what the exact thing is – and go through a bunch of paperwork. But (Kristen?) Ward started working at the library at fourteen. It turned out that she was an savant with Eastern European languages. We had a number of books written in Russian and a couple of others – she taught herself how to read this stuff when she was at the library.

MG: Wow.

AT: For the next ten years, she worked at the library during the summer and through college even. She studied, among other things, far Eastern languages. She was quite competent with that. Even in high school, she'd sit listening to Farsi broadcasts at home. She could understand it. Regardless, she was with us for a long time in the library, or at least, her summer work and occasionally Easter or Christmas vacation time. Actually, it was one of the things – I was able to return the favor of her work. She asked me for a recommendation. She wanted to get into Air Force intelligence. When she graduated from college, I wrote her a recommendation. I don't know if I was the only one. I'm sure she had others. She ended up becoming an Air Force officer and actually went to Afghanistan doing Air Force intelligence. She got out of the Air Force two or three years back. I keep up through email with them, what's going on. That was good. It was a family affair, at least for the Ward Family. Anyway, we tried to get this thing off the ground, get some interest in the 200<sup>th</sup> Anniversary. Well, tried for about two years, maybe two and a half years, I'm not sure what it was. We couldn't get any traction with anybody. There may have been a few senior people at NOAA talking about it, but still nothing happening. I finally gave up. Then, just out of the blue, maybe a couple of months after we said, "We can't get anybody involved" – the reason we wanted to start so early was that we wanted to get other organizations involved, like the American Geophysical Union. Their most prestigious medal is named the [William] Bowie Medal



for the head of geodesy during the 1930s and early '40s, William Bowie. Very famous in the geophysical world. There were a number of others that were very prestigious – cutting-edge technology at the time – Coast and Geodetic Survey people that were associated with it. So we thought that was a natural – maybe American Fisheries Society. Well, nothing happened. We gave it a shot, and that didn't transpire. But about a year and a half before 2007, I received a call that whoops, they were all hot to do a 200<sup>th</sup>-anniversary celebration, "Can you help us out?" [laughter] We ended up doing that. A NOAA Corps officer, Michele Bullock – once again, a minor family story. She had been commanding officer of the NOAA Ship *McArthur* at the time when my son Michael graduated from high school. He didn't know what he wanted to do. I said, "Well, do you want to go to college? Do you want to go to sea? Do you want to go to work somewhere?" I said, "I'd like to go to sea." I knew enough people still at NOAA Corps that I managed to steer him to a job on a NOAA ship as an ordinary seaman. She happened to be the commanding officer. She was given the job of trying to sell this to the NOAA Corps administrator and other higher-up people. So we built a PowerPoint presentation together, went through it a few times, and she ended up presenting this. I sat in the wings, in case some questions came up. They bought off on it. Then serious planning started for the 200<sup>th</sup> anniversary. During that, a retired NOAA Corps officer Dave MacFarland became the executive director, if you will, of getting everything put together on the 200<sup>th</sup>. I was given a few tasks to go with this. We have the NOAA Top Tens. Do you ever look at the NOAA 200<sup>th</sup> site?

MG: Yes.

AT: I was chairman of the Top Tens Committee. We went through probably – all total – I guess there were four categories – about a hundred-and-seventy different submissions for top tens. Then we had a representative from each line office. We went through and discussed these and voted on them. That's how the top tens ultimately resulted. Some of those top tens are still top tens. I suggested that they should probably do this every ten or twenty years. I think at the present time, things that didn't show up – I think there are certainly two for sure. I think ocean acidification – I think that should be included or at least given strong consideration. The other is the plastics in the ocean. But those were in their infancy at the time. In fact, a book that I edited later – the one associated with the Smithsonian Institution, that hardly had a mention, I think of either of those questions. They didn't even ask to get any information for the write-up. I think now those are really major issues that have occurred since. The other thing that was going on at the time – I think 2005 was the first Treasures of NOAA's Ark, which is Cheryl Oliver's traveling exhibits. The first one I actually thought was the most fun. Because I was a wandering librarian, I wandered all through – I'd go to people's offices, talk to them, and try to twist their arm either to give a talk or to give me pictures. I knew where most – I don't want to say "most" – a lot of NOAA's artifacts were from people who have historic stuff sitting in their office as decoration or whatever. So we went and rounded all this stuff up for the beginning of Treasures of NOAA's Ark and then built an exhibit pretty much around it. I will mention – I can't remember all the stuff he did with it, but Cheryl's husband, John Oliver, was the deputy assistant administrator of Fisheries at the time. I think that's what the title would have been. He always helped all this stuff, too. I forget what year he

retired. I represented the library by giving thanks to him. He was always ready for supporting these types of projects, both monetarily and moral support, should we say? We got our first Treasures of NOAA's Ark going. That was really fun putting that together.

MG: Can you tell me about some of the treasures that stand out to you?

AT: Stuff like old theodolites, which are angle-measuring instruments, [and] old current meters. Fisheries had nets, and I don't know what all else. The NOAA Science Center also had one of the original manned habitats that was brought in there. We had that. I think that first one – I'd worked with an artist by the name of Taylor Morrison, and we got him to come and show his stuff. Cheryl, I guess, paid his way out there. He came from Oregon. We worked with him on a number of books. He had a display of some of his artwork that was relative to NOAA. I couldn't tell you everything that was there. There were some issues with it. I and others knew what everything was, but some of the people going through that were new to NOAA or were part of the administrative staff weren't really familiar with the science. For them, it was like looking at a bunch of brass and metal occasionally. The stuff wasn't labeled as good as it could have been. Regardless, it was still pretty cool. Cheryl and David Hall dreamed up – I don't know if there were other people involved – making it like – not the lost Ark of the Covenant, but Indiana Jones stuff. The big warehouse at the end, where the Ark's in there somewhere in ten billion boxes. That was the point of the theme. Anyway, that was fun, and that's something that Cheryl's continued. I was probably involved with three or four of those before I retired from being more than a spectator. Those were always fun things. I brought kids and grandkids there. One year, this was NOAA's kids week. I don't know if you've ever seen their buoy-making exercise for small kids. Basically, polyethylene pipe that's in sections where you put them together, and you see how many golf balls you can put on your supposed buoy. We made the mistake of having that one time in the library and filling up a kid's wading ~~waiting~~ pool with water in a section of the library, then let the kids go at it. Only three kids fell in the water. [laughter] There was water all over the floor. The rug was drying out for the next three weeks. They had that in the Treasures of NOAA's Ark, also, I believe. I can't remember everything that was there, but we tried to have every office represented that was part of NOAA. The Weather Service had an old-timey Weather Service office with some of the equipment they had. Actually, like I say, that's been continued. I just had a request the other day from Cheryl and David to provide them with information for Navy/Coast and Geodetic Survey interaction through the years, which I did provide to them. They're going to have a – I don't know if it's a permanent exhibit, but certainly a year-exhibit at the Navy museum, which is at the Washington Navy Yard here in Washington, D.C. So, yes, it continues. She's had it at a number of places all around the country. Going on with the 200<sup>th</sup> anniversary, that year, there were twelve major events around the country. Janet Ward dreamed up "Postcards from the Field," where people would take pictures of their offices and send them in and write a bunch of stuff. All total, there were probably over a thousand NOAA people that ended up taking part in it. This is more hubris, but there are three things I'm really proud of. [inaudible]. Frankly, I've gotten all kinds of awards,

probably more than I deserve, but there are three that I really like. You can't read this – I don't believe you can read it.

MG: No.

AT: What it is, is it's a letter from the administrator of NOAA [from] December 14, 2007 – it mentioned the Postcards from the Field. He didn't give Janet's name on that. She was the one who dreamed that up. "I want to thank all of you for your contributions... I also want to extend a special thanks to Albert "Skip" Theberge, who conceived the idea of celebrating the establishment of the Survey of the Coast four years ago. Skip has served NOAA with great distinction for many years, and our agency owes him a debt of gratitude for ensuring that it's vision came to fruition." This was an all-NOAA letter, so I liked that. [laughter] I'll temper this with one other thing. This was one from the Mount Mitchell. This is just a letter. That's the ship that's on it. "The officers and crew of the NOAA ship *Mount Mitchell* would like to express their appreciation for your interest in broadening our knowledge of NOAA's history and its contribution to the scientific world. Knowing our past helps us to chart our future. Observing the accomplishments of scientists in our organization from the Coast Survey to the present NOAA fleet, lets us know that what we do out here is truly worth our best effort." This was signed by the whole crew.

MG: Wow.

AT: I appreciated that also.

MG: I bet.

AT: This is from guys – the lower crew, they were just temporary personnel, just there for the summer. There are chiefs; there are officers on this. I guess that's what I strove for. There are guys – and this is off the record.

MG: Hold on one second.

[TAPE PAUSED]

MG: We're back on.

AT: So the 200<sup>th</sup> anniversary year, that was a great celebration that was going on. A lot of people, like I say, took part in it. I think it did a little bit of esprit de corps for all of NOAA. So that was a nice thing. The other thing that I got involved with concurrently was I was asked to serve on the science team that designed and vetted the science for the Smithsonian [National] Museum of Natural History Sant Ocean Hall. At the same time that this was going on, I was also involved with that particular project. There were two parts to that. One was to review all of the design documents that came through. The first thing that came up – the original package put together by contractors – I think it was Michael Vecchione of the NOAA Systematics Lab, which is based in the Smithsonian

Institution. It's in the basement of the Smithsonian. I think he dreamed up this idea. Primarily, he came up with it, to have an ocean hall. He was a biologist. The first plan that they had had been written by him and a contractor or a number of people associated with Mike. It was totally biology. There was nothing else there. The concept of the Sant Ocean Hall was supposed to be an overarching concept of the whole ocean, all of its systems – the physical systems, the geological systems, and the biological systems, and also its interaction with the atmosphere. Myself, I read that, and I became an advocate for, once again, the total system, which I believe myself – I'd say that initially the person that came up with this initially – I was the NESDIS representative, the National Environmental Satellite, Data, and Information Service, which the library was under. I guess it still is. No, it's not. It's under Oceanic and Atmospheric Research [OAR]. That probably makes more sense. Myself, the National Ocean Service representative Tom LaPointe, and Joanne Flanders of the Office of Ocean Exploration and Research [the primary NOAA representative in interactions with the Smithsonian] were the first to start espousing this view that there should be more in this besides the biology. Ultimately, this view prevailed. Tom LaPointe put together a big presentation. He was a good salesman sort. He put it together for the powers that be. Everybody came to one mind with the exhibit, and that's its present configuration. That was fun. It was another fun thing because we were doing a lot of good work. At the same time – this is job number three that was all going on at this time – they asked me to edit a NOAA companion volume to the opening of the Sant Ocean Hall. By edit, that also meant finding authors for chapters. They had a publishing company already. I never really liked this cover. I don't know if you can see that or not.

MG: Yes, I can.

AT: I don't know if you've ever seen *Hidden Depths: Atlas of the Oceans* or not. This is a companion volume to the opening of the Sant Ocean Hall. If you go through it, there's all sorts of – there are a number of chapter authors, and at the end, there are acknowledgments. Basically, I had to twist a whole bunch of people's arms to contribute. [laughter] Some were glad to do it. Some were reticent. Once you got them to do it, then you had to keep them on a schedule. I called it a – I really don't know how many emails were involved with this, but I called it a two-thousand-email effort, which I don't really know; I just jokingly said that. A lot of interaction. There were scientists from Atlantic Oceanographic Meteorological Laboratory, scientists from the Pacific Laboratories, particularly the NOAA VENTS program. Actually, it was a friend of mine. I'd met him a few times, but we communicated quite often – Dr. Robert Embley. I had Fisheries people, Coast Survey people. What we tried to do with that book was put together a volume that represented virtually all of NOAA's involvement with the ocean. That's almost impossible in itself. Regardless, it was still a pretty good overview. Actually, if anybody ever looks at this that has any influence, I recommend that they do this for both the oceanic sciences again for an internal NOAA document, if nothing else, and also their atmospheric sciences as I think these were really good communications documents for the general public. That's what this was made for. Actually, there was a Korean scientist who was working at OAR at the time. He took that book back to South Korea, and they translated it into Korean and made it an oceanography textbook. I

thought that was pretty cool. I didn't teach the Korean language volume. [laughter] Obviously, I couldn't read it. But once again, nice interplay. A lot of the photos in there came out of the photo library. A lot of the people I worked with in the past, if I didn't have photos, I could beg something from them. There were a few pictures that the publisher, which was actually a British company, put in there. One was of a big saltwater crocodile. I don't know what all else. But most of the pictures came out of NOAA. It was virtually an all-NOAA effort, which was good. I'll give you the two most surprising awards I ever received. Going back to the NOAA Heritage week, Treasures of NOAA's Ark, the first one that was put together, all of us that were involved with that got a NOAA Diversity Spectrum Award. There was an assemblage of folks that came from various ethnic backgrounds, all working together to showcase NOAA's heritage. With *Hidden Depths*, this was the first book that was ever published privately that a NOAA logo was put on legally. The NOAA legal team – Roxie Allison did most of the work with this, but I guess because I did the editing, they gave me a NOAA General Counsel Award, [laughter] which I thought was quite unearned. But take what you can get. There was no ceremony associated with this - it just showed up in an internal mail envelope one day. I thought that was strange. Maybe you'll be able to see these. [Editor's note: holding up copy of *Hidden Depths*] This is the NOAA logo. You can see it up there on the corner. By the time we finished this – that was 2008 when they opened the Sant Ocean Hall. Then it was just a lot of standard library stuff that I was involved with, but there were – I'm trying to remember if there were – one other major issue that I got involved with was the discovery and identification of the Coast Survey steamer *Robert J. Walker*. This was a ship that sank on June 21, 1860. Twenty personnel from the ship lost their life. This was something that was bureaucratically buried for some reason. I'm not sure why because there were other disasters that were well-documented within the old Coast Survey. Well, a couple of reasons – it was on the advent of the Civil War – I don't know if there was any hanky-panky involved, as far as who knew who from the ship that had hit the steamer that ended up sinking because that ship got away basically. The ship they thought it was, a guy claimed it couldn't have been him even though there was a mashed up bow on the vessel. So that's something that's hard to say what really transpired there. I uncovered the story [while] writing the history of the *Coast Survey, 1807 to 1867*. I'd initially found a reference to losing a steamship. That was on page one or two of the annual report. About seven pages later, it said something like, "Yeah, we lost some equipment and a few personnel." About page forty-four, it said, "Yeah, we lost twenty-people." I go, "Huh?" There were no names mentioned, no names of who the commanding officer was, or even any of the personnel on the ship. In the course of research for the *Coast Survey, 1807 to 1867*, at the National Archives, I went through all of the communications of the then-superintendent of the Coast Survey, Alexander Dallas Bache. By the way, it's B-A-C-H-E, but I've always been told that, as opposed to "Bach," it's always pronounced [with a long "a"] – there was a Bache or a son-of-a-Bache in the Coast Survey. So Bache, as opposed to Bach, which a lot of people try to pronounce it as. Anyway, going through that, I did discover that there was a fairly voluminous correspondence. It had some newspaper clippings associated with it. This was all on microfilm. Also, a listing of names of the people that were killed when the ship sunk. Also, some of the people who survived. But it had all the people that had passed away. There was also a general location – [Telephone rings.]

MG: We'll pause.

AT: Hang on.

[TAPE PAUSED]

AT: Anyway, because of that, I started to try to generate some interest at NOAA. This was while I was still a NOAA Corps officer, actually, before I left NOAA Corps. In the Office of Ocean Exploration and Research, that's another office that I really had a lot of interaction with for a number of years, even though I was in the library. They had a young NOAA Corps officer in it who was a marine archaeologist as well, had a degree in marine archaeology. He, at least, designed an initial search pattern for the vessel, but nothing ever came of that because he couldn't get any ship time, there was never any ship that was close by that might have been able to find and identify this wreck. A few years after that would have been 2001, 2002. A few years after that, NOAA established a maritime heritage program. Dr. Tim Runyan, who had come from East Carolina University, was the head of that. He was interested, but still had no funds or no ship time for looking for it. About two or three years after that, I was at a conference. I forget what the exact title of it was, but some kind of oceanic history, be it shipping or naval or science conference. I had given a talk. But I also heard a talk by a woman from East Carolina, a Joyce Steinmetz. I made it a point to meet her because Joyce Steinmetz had done research on all of the, what are called net hangs [Editor's note: net hangs are underwater obstructions, oftentimes sunken vessels, on which commercial fishermen's nets are caught and lost.] on the New Jersey Coast, where this vessel was located. She knew where most of these net hangs were from – she'd been diving up there with local divers and fishermen. She didn't want to give the exact location because this was proprietary information. These guys catch a lot of fish around these wrecks. Regardless, we made contact on this. We'll move ahead a couple more years. I think it was 2013, finally. A couple of things had happened. Dr. Jim Delgado, who is a world-famous marine archaeologist, had taken over the Maritime Heritage program. Tim Runyan had gone back to ECU. Joyce Steinmetz had become further interested in helping identify this wreck, and she gave some coordinates. I forget if she was on the initial dive team. Hurricane Sandy occurred, believe it or not, [causing NOAA to deploy ships to the area for survey work]. NOAA had a ship that, at the time, was working close to the entrance of Delaware Bay, but I guess it was going to work further up. A boat from the marine sanctuaries was going up to New York because there was a lot of damage done in New York Harbor. Stuff sunk, and they were going up there to do some dive work. This all came together as a result of the communication specialist in the Office of Coast Survey, a lady by the name of Dawn Forsythe. Dawn Forsythe had called me earlier in the year. June 21st happened to be World Hydrography Day. And the Director of the Office of Coast Survey is also the national hydrographer and our international representative. They were looking for a theme for World Hydrography Day. When I told her that the ship had sunk on June 21<sup>st</sup> that we were looking for, her eyes lit up, and she said, "That's it." She knew that a ship was working off the Delaware Capes. We didn't know that this dive boat from the marine sanctuary was going to be going up there. I forget which boat it

was. It was going up to New York to be working in the harbor. All of the planets aligned, and they were able to get the ship to do the survey work to find this thing initially. Joyce Steinmetz had graciously provided the information. A team of New Jersey, both commercial and sport, divers had been put together by people that Jim Delgado knew. The Coast Survey provided the side-scan and multibeam expert to get up there, had the ship with the information, and they found the wreck, and they sent the divers down, took measurements, and established that, in fact, they had found the final resting place of the *Robert J. Walker*. As a consequence, there were official memorials at which various, at least, NOAA dignitaries spoke. There's a book that's coming out about this, that should be published, I hope, this winter. [Editor's note: Preliminary copies were sent out in early June.] It's been going on for quite a while. It will be published through the University of Florida Press, I believe. One of the lead authors on it is Steve Nagiewicz, one of the sport divers up in New Jersey that was involved with [diving on the *Walker*.] Sport and scholastic – they help with local schools up there that have any marine programs. So there will be a book on the finding – I don't know what the title will be – the finding and identification of the *Robert J. Walker*. [Editor's Note: *Robert J. Walker: The History and Archaeology of a U.S. Coast Survey Steamship*, written by James Delgado and Steve Nagiewicz, was released and published on July 14, 2020.] I provided some help with that. I don't know if I wrote a chapter. There's a host of people that are coauthors of the book. I think Nagiewicz and Delgado are the primary authors, but then there are a number of other folks that have written chapters for this particular book. What they want to use it for and rightfully so is an example of government-private cooperation. The sport divers, when they go out there from now on, as opposed to just – “Gee whiz, I can find something pretty on the seafloor.” They'll help map more of the stuff, the artifact field; if they find artifacts that look like they have some historic importance, to identify them and bring them back and get them in a proper location, as opposed to in an antique seller's shop. So it's a cooperative program. They actually have mentioned the ship on the NOAA nautical chart off the New Jersey Coast at this point. I think it's a registered historic – one of the few oceanic registered historic places within the United States. Well, there are few in the water. There are a lot of them on the land. Anyway, that was a good thing. One other memorial that I was involved with – in going through Weather Service history, although I never wrote anything with that – what I was looking for – on the NOAA History website, there's a memorial page [the NOAA Hall of Honor]. These were a number of people who lost their lives working with the Coast Survey. I forget if there's a page associated with the Second World War, but there were four Weather Service people that were assigned to a Coast Guard cutter – actually, it was an old freighter that had been refurbished, the U.S. Coast Guard cutter *Muskeget*. I think in early 1943 – actually, I think it was June. I forget the exact dates. It was torpedoed and sunk. Nobody survived the sinking of the ship. The Coast Guard had commemorated all of their personnel that they were aware of that were on the ship, but they didn't include the Weather Service people. All of these people ended up with – all of the Coast Guard people had gotten Purple Hearts for their families if nothing else. So I brought this to the attention of NOAA's Coast Guard liaison officer, at the time, Captain Amilynn Adams. She took this through the Coast Guard and helped coordinate with NOAA Corps. Ultimately, it ended up being a memorial service for this group that was attended by, once again, upper echelons of NOAA and upper echelons of the Coast Guard

in which surviving family members, those that were still around or relatives, were presented with Purple Hearts for the people. I won't say that I never went into this with the idea that – I did feel that I was helping commemorate all of these people with stuff I'd written, but the official commemorations, particularly that for the Robert J. Walker personnel, I felt that it closed a fairly, if not immoral, certainly nasty chapter in NOAA history that these people, for whatever reason, weren't commemorated or even acknowledged. It was just like, "Oh, yeah. Too bad. Twenty guys got killed. Well, back to work tomorrow." Anyway, that was a little more stuff I did in the library. I guess there are a couple of requests for information that I recall. The only one that I thought was particularly bizarre – I actually had a guy send an email. He said, "If I explode an atomic weapon off the coast of Oregon, and it dissociates the sodium and the chlorine and forms a chlorine cloud that goes inland, how many people will it kill in Portland?" I shipped that one to the FBI [Federal Bureau of Investigation].

MG: Yikes.

AT: [laughter] I only hope the guy didn't have an atomic weapon or doesn't. There are crazy people out there, but I suspect that it's hard to tell what sort of maniac was asking that question. That was one. I'd never considered myself a public librarian. I considered myself a librarian in the service of the federal government. This was post-9/11 as well. I thought if I was asked questions – I had another guy in Pakistan that kept asking about all of these various poisonous chemicals that were used to kill marine growths on the bottom of ships. That one I quit answering. In fact, I instructed people to quit answering them. Fisheries guys said that you could find all this stuff in various journals if you really wanted to. I didn't see any reason to make it easier for the guy or whoever it was. So occasionally, myself as a – not coming at it from what I'll say is a true librarian. I think, to some degree, librarians have it imbued in them that whatever somebody asks, you help them find it, and this is all okay, but I had the attitude that I was also somewhat responsible for my fellow man with this or fellow taxpayer. Using a federal facility, I don't think you're guaranteed privacy as well. That's my feeling. Somebody may sue me for that, or at least they could have a while back. I just didn't think it was – these sorts of things were disturbing to me. Anyway, I'm trying to think. I can't really think of any – I'm sure that occasionally I had some misheard questions that I gave very strange answers to. As a librarian, I always said, "There are no stupid questions, just stupid answers." Well, I ended up retiring in 2018 from the library. That closed out forty-nine years of service with the federal government. Actually, I guess I pointed out early on, I never thought that would happen, that I would be a federal [employee] for almost fifty years. I never thought I would end up – well, for many years, I was acting chief of reference at the library. I never thought I would be chief of reference in a library, having gone to an engineering school. In one interview I had, if somebody asked me fifty years ago, I would have told them they were nuts. But things just move on. You don't know what's going to come your way. I think that ninety-five percent of what I did at NOAA I enjoyed, I appreciated. I think that one thing that I feel is that nothing that any individual accomplishes, at least within NOAA, is attributable to that one person. There are key people in numerous areas, but I think most of NOAA is teamwork, working with teams. It didn't matter if it was shipboard survey work, or even



working with research people. That's about it. I enjoyed my time at NOAA. I appreciated it. I traveled a lot, saw a lot. Raised a family within NOAA. Even one of my younger children, when he was in first or second grade, he called his daddy a "NOAA man." And that's what I was, a NOAA man. So with that, we will finish this up.

MG: Sure. Well, I have a number of follow-up questions, and then I want to ask you about your family life and the people you mentioned in the notes you sent me before our interview. Do you want to take a break for lunch or for today, before we continue?

AT: Let's take a break for the day. You can get a bunch of questions together. I gave you this whole replay of my career over about six or seven hours.

MG: I think it's more than that. [laughter]

AT: [laughter] If I would have worked through one laboratory my whole life, maybe things would have been a little bit different as far as this interview, but each one [assignment] was different. Each one was enjoyable in its own way. Each one -- learned something from each of these assignments. Most of the people you interact with -- I interacted with literally hundreds of people, if not more -- every one you pick up a little bit.

MG: This has been a treat so far. I'll listen back to what we've recorded, and see what we're missing. We can plan to pick up here next time.

AT: Okay. Very good. Thank you.

MG: Thank you, Skip. Talk to you soon.

AT: Okay, have a good day.

MG: You too. Bye-bye.

AT: Okay, bye.

-----END OF INTERVIEW-----

Reviewed by Molly Graham 6/9/2020

Reviewed by Albert "Skip" Theberge, Jr. 6/15/2020

Reviewed by Molly Graham 6/16/2020