

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 50TH ORAL HISTORY PROJECT

INTERVIEW CONDUCTED BY
MOLLY GRAHAM

GAINESVILLE, VIRGINIA
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TRANSCRIPT BY
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Molly Graham: This begins an oral history interview with Captain Albert “Skip” Theberge for the NOAA 50th Oral History Project. The interview is taking place on April 3, 2020. The interviewer is Molly Graham. It’s a remote interview with Captain Theberge in Gainesville, Virginia. I’m in Scarborough, Maine. I’m going to start at the beginning. Could you say when and where you were born?

Albert Theberge: I was born September 16, 1946 at Coquille, Oregon.

MG: I should say that’s something else we have in common. I have the same birthday.

AT: September 16th?

MG: Yes.

AT: Okay, that portends well. Very good. I don’t think you were born in 1946.

MG: Not quite. Tell me a little bit about your family history, starting on your father’s side.

AT: Father’s side? His parents immigrated to the United States just prior to the First World War. They were French immigrants, but they were from the French Islands, which are in the Gulf of St. Lawrence, Saint-Pierre and Miquelon. They were a fishing family, Grand Banks fishermen. Also, when they came to the United States, I don’t know what the connection was exactly, but my grandfather, who I never met, was the American ~~French~~ manager of a French cable company’s American operations. They were living in New York. Those were the undersea telegraph cables. So retained a maritime background in that respect. My father and his two brothers were both associated with the maritime industry. My father was a captain for American President Lines for a number of years. He sailed for forty-five years. He came up through the hawse pipe, so to speak, starting on deck and then working up through mates, and then making it up to captain of container ships, and sailing out of San Francisco primarily. My Uncle Henry was a chief engineer. The last I knew, he was sailing for Pacific Far East Lines. This is a defunct shipping line out of the West Coast, also. Then my Uncle Gus, who I never met, was the deputy, the number two guy in what was the Boston Navy Shipyard. He was in ship repair and ship construction. Strangely – this is not pertinent – but they all died at sixty-two. When I hit sixty-two, I was a little bit puckered up for a little bit. But I passed that, and seem to still be going strong.

MG: What else do you know about your grandfather’s fishing experience?

AT: Really, not a thing. I have very little knowledge of family history in that respect. On my mother’s side, they were Danish mariners. After her grandfather sailed for, I guess, a number of years – he was captain of a bark, which is – you’re probably aware of that – a sailing-type vessel in the 1870s. Then he went ashore, and I guess he was a building engineer, i.e., big buildings, keeping everything going for a number of years before his death in Seattle prior to the First World War. My mother was born in Los

Angeles, Long Beach. My father was born in New York. I was born in Coquille, Oregon. We actually lived – I don't remember much of this – up until I was three years old, in a little town called Bridge. The closest town to Bridge, Oregon, is a town that is really called Remote. Remote, Oregon, is the closest town to Bridge, Oregon. That gives you an idea of the relative population in the area. Why two people from a large metropolitan area came there, I have no idea. My father sailed for about half the year out of Portland, Oregon, at that time of his life. My mother basically ran an angora rabbit ranch. She had about five-hundred rabbits that she was raising. This was obviously for the skin and fur, for coats and whatever, but also sold the meat. Unfortunately, some sort of disease killed all the rabbits. Then they, for whatever reason, left Oregon in 1949 and moved to what was then a small town, Santa Cruz, California. The only reason I think they would have lived there was that my Uncle Henry was living there also at the time. I really have no idea why they chose that location, about seventy miles south of San Francisco. At that point, my father started sailing out of San Francisco. Ultimately, about ten years later – well, not even ten – this sort of life – my father was basically married to the sea. I hate to say it. My mother decided that she couldn't tolerate that. So they ended up getting divorced when I was probably about eleven-years-old. My mother remarried, and we moved to a part of Santa Cruz called Pleasure Point. On the charts, it's called Soquel Point, but all the locals still call it Pleasure Point. I grew up in that area until I graduated from high school and going off to college.

MG: Can I ask you more about your father's work and what he was doing on the shipping vessels?

AT: Well, like I said, he started when he was young on deck, and then worked his way up, got his mate's license. Then ultimately, he went to work for American President Lines, which was the biggest West Coast shipping line and worked his way up to captain. When he started as captain, it was during the – his first command was during the Vietnam War. Actually, they were victory ships that were taken out of mothballs basically and running supplies and ammunition into Vietnam. My father wasn't such a – I wouldn't call him a great patriot, but he was a great mercenary because if there was a war, he was the first one in line to sign up to bring a ship in there. This wasn't necessarily altruistic. It was a hundred percent pay bonus for going into war zones. After the war, I always thought of him as – this sounds funny because these were obviously mechanically-propelled vessels if you will, but I still thought of him as one of the last clipper ship captains because American President Lines had around-the-world routes that they took. I think he ended up with the – well, he didn't get the record, but he had the second shortest around-the-world trip, I think eighty-nine days. They would stop in ten, fifteen ports going around the world. During one of the wars, actually, I received this – my father never told me this, but I had a fellow who was a captain on the Great Lakes. This was a few years before I retired from NOAA [National Oceanic and Atmospheric Administration]. He sent me an email that he'd come across my name – I'm Albert Theberge, Jr. I go by "Skip." He sent me an email saying he'd been on the last around-the-world cruise with my father. During one of the endless Mideast wars, they closed the Suez Canal. So from Karachi, Pakistan, usually what they did – they went through the Red Sea up through the Suez Canal and into the Mediterranean. But instead, because it

was closed, they had to sail around Africa, then through the South Atlantic, and up to New York. Because of that and fuel constraints, they were sailing at not quite half-speed, but pretty close. It was a very long trip. He was a deck cadet at the time. He did tell me – it was very nice – that he really respected my father and that my father did all he could to help him learn all that he could. That was a nice thing. I liked that. In the early days, the container ships –American President Lines, it got the contract. It saw the handwriting on the walls – containerization – and it got the contract that most of the railroads for cross-country container transports – instead of a ship taking the containers around, even if it was going to Europe from Asia, they would ship them cross-country on railroads. So they were early into the container ship business. My father is one of the early container ship captains. Actually, he passed away on a container ship, the *SS President Kennedy*, in 1980. He was in Kaohsiung, Formosa – well, Taiwan, if you will. He died in the saddle. Sort of interesting, but he probably would have preferred that. On the way back, like a true mariner, buried at sea about a hundred miles off the Golden Gate. That was a fitting place to be buried, a fitting way to end.

MG: Can I ask what happened? How did he pass away?

AT: He had a heart attack.

MG: Were you notified before he was buried at sea?

AT: We knew he passed away, and we knew that he was going to be buried at sea off the ship. He'd requested that. He wanted to be buried at sea, not that he knew he was going to have a heart attack at the time, but he had specified that. What should I say here? He had remarried, also, and had a family. He was raised Catholic. There was a Catholic Mass. The family went to Muir Beach, which is north of San Francisco, to, I guess, just ponder and gaze out to sea and to say a final farewell on Muir Beach. I think it's a state park now in California.

MG: Do you have any memories of your time in Oregon?

AT: I don't know if these memories were generated from a few pictures that we had. I got some family stories that Mother told me. But the few memories – I had an older sister. One time, when it snowed, I think I remember us making a snowman in the front yard, rolling big snowballs to make a snowman. The other thing, we had a dog, that for whatever reason, went nutty and became very violent. He wasn't rabid. I remember my sister and I approaching this dog. I forget what my mother said his name was. Actually, you had to keep him chained. He was, at the time, lunging at us. I don't remember this, but my mother said she had to ultimately shoot him. We were out in the sticks. This is the sort of thing you did at that time. I remember those two things. My mother told me a couple of stories. I had a charmed existence at that time. We lived on the north bank of the Coquille River. Well, I was a fair to middling baseball player when I got a little older, but I liked throwing rocks. I was throwing rocks over the bank, and she said I actually fell about twenty-five feet and landed in a bush. [laughter] But survived that one. Another time, a neighbor had a big Brahman bull of some sort – she said it was a

Brahman bull; I don't know if it was or not. Another time, he was in his corral, and I climbed into the corral. He was lying down, and I was sitting between his front feet. [laughter] My mother got me out of there, promising me candy. Fortunately, the bull wasn't very violent. The dog was. Those were about the only real stories I remember of Oregon.

MG: I was also curious about how your parents met.

AT: My father was an all-Navy swimmer. This was in the 1930s. My mother was very athletic also. She would swim about a mile a day. They somehow met at a swimming pool. I really don't have any idea what the particulars were. They were both, in their younger days, quite athletic. That's how they met.

MG: Can you tell me more about your mother? She sounds like a hearty, resilient woman.

AT: Well, this was part of the problem also. This gets into social politics today. When my sister and I got old enough, and particularly with my father at sea most of the time – that was in the days before three months on, three months off. He'd sometimes be gone eleven months out of the year – she wanted to go to work, do something reasonable. Ultimately, first of all, she went to work – you probably heard of redevelopment agencies. They're under the Department of Housing and Urban Development these days. But the city of Santa Cruz had a great flood in – it could have been '56 or '57, and the downtown was flooded, and a lot of destruction. As a consequence – I don't know how they applied for grants for a redevelopment agency, but she started out as the secretary of the redevelopment agency. I'm not sure why the fellow that was the initial executive director left, but my mother had been working there for a few years and knew the ins and outs of it, so she was appointed the director of the redevelopment agency in Santa Cruz. There were numerous redevelopment projects going on in the United States, but the Santa Cruz one, I believe at the time, was the third one finished. I forget the years. It was probably up to about 1970 or so before they completed the project – new businesses, levees along the San Lorenzo River. I don't know what all went into it exactly. She was the executive director. She kept that thing going. Ultimately, this was unfortunate for her – she was not a federal employee. She was employed by the city of Santa Cruz, so she had no retirement with that. If she would have been a federal employee, she would have gotten the credit for her time as executive director of the city redevelopment. She did go to work for the federal government afterward because she was considered a relative expert in many parts of these programs. She ended up going to work, but at that time, she had to go down to – she worked out of Los Angeles at the time. By that time, I was in college and away. We all brag about our children and parents, to some degree. She's a very intelligent woman, very knowledgeable, and to some degree, pretty tough. She basically survived in a man's world. So, I've always been sympathetic to women professionals as a result ever thereafter.

MG: How did she get into the rabbit fur business in Oregon?

AT: I have no idea. Like I say, she was raised in Los Angeles – I don't know if it was just looking around for how do we survive up here. My father worked logging six months out of the year and worked shipping the other six months. My mother did the farm. I recall two other stories from Oregon – one, picking blackberries. She was picking blackberries, and picking blackberries on the other side of the bushes was a bear. So she decided it was time to hit the road out of there at that time. A second one, hearing noise – you're out in the middle of nowhere, and you're hearing noises against the house. She got the rifle and looked out there. There were elk that were scratching themselves against the house. [laughter] They experienced quite a bit of different stuff. It wasn't the Wild West, but it was close.

MG: I read that in 1940, Bridge had a population of forty people.

AT: You just looked?

MG: I saw that when I was researching for this interview.

AT: Yes, it was in the middle of nowhere. Our closest neighbor was about a quarter-mile away. Her name was Goldie Huff for all that's worth. I called her "Grandma." Well, you're getting the whole thing here. This is really not pertinent to NOAA. Regardless, as you know, I'm Albert Emil Theberge, Jr. So they wanted something to call me – not Al, Bert, or Bertie. Old Goldie Huff, who I don't remember, called me Dugan for some reason. Somebody else called me Michael for a bit. Then they all decided on Skip, and that's what it's been. It had nothing to do with going to sea or being a skipper on a ship or anything on that order. That's what they started calling me when I was about one-year-old. That's where that came from, and that's the way it's been for seventy-two years now past that point.

MG: Did you get to know any of your grandparents on either side?

AT: No. I never met either one of them. They both had passed away before. During the Second World War – my sister was born in 1942 – my mother, for part of that time, lived in the New Jersey area with my father's parents. My sister, up until the time she was four years old, could only speak French. That's what they spoke in the household. I never learned to speak French myself. My mother was working in the shipyards, and she was a Rosie-the-Riveter sort of thing. [Editor's Note: Rosie the Riveter was a figure used to represent women in the war effort.] My sister was being raised by a grandmother and grandfather.

MG: What do you remember about the move to Santa Cruz?

AT: Not a thing. [laughter] I've seen pictures of the old car we had going down there. I do remember we lived in a number of – it's sort of strange. For a number of years, we lived on rental properties and would seem to change every year or so, all in the Santa Cruz area. I do remember when we lived on a street called National Street. We were living in a duplex, two on one side, and then a place to park and two on the other side.

On the other side, my Uncle Henry and – we called her – Aunt “Nette,” but it was Antionette, sort of like Marie Antionette. They lived over on the other side. That’s when we got a dog. My father loved Doberman Pinschers. He had them when he was growing up. So we had a Doberman Pinscher; his name was Rex. Rex loved Antionette. He knew the sound of their car when it was driving up, and he’d get all excited all the time. They went on a vacation, and he knew probably five minutes before they got there that they were coming. [laughter] It was very interesting. I remember him getting all excited. Then Rex stayed with us. I lived in Santa Cruz-proper if you will. It was a small town then. It was before they put the university [University of California, Santa Cruz] in there and before Silicon Valley took off and started spilling over the hill, which we called the Santa Cruz Mountains. We ended up on a street called Laurel Street. We bought that house and lived in that house for a few years. My parents divorced when they were in that particular house. After Laurel Street, that was relatively steady. I went to Catholic School for five years, fourth grade through eighth grade. Then my mother remarried. That’s when we moved to the Pleasure Point area. You probably are not familiar with that name. If you look up Pleasure Point, you’ll see it’s a big surfing area.

MG: And you became a surfer.

AT: Yes, I surfed from the time I was probably twelve or so until, at least, when I left high school. I was a reasonably good surfer at that time. That was in the era still of big boards. [laughter] Pleasure Point is one of the major surf spots on the northern California coast.

MG: Is this where you developed an interest and love of the sea? I read you were interested in studying marine life. Tell me more about that.

AT: Well, the house we lived at – my stepfather was a fairly creative fellow. He had built a house – you can look it up. These days it’s called the O’Neill House, [named after] Jack O’Neill, the surfer guy. You may have heard something about O’Neill surfboards and wetsuits – fairly famous. He had built this house in 1957 or ’58; I forget which year it was. Actually, it hangs over a cliff with the water right below. My mother loved to fish. She could fish off the upper deck. So grew up – well, maybe not grew up, but twelve to seventeen and when I’d come home from school. That was our house. You look out, you see Monterey Bay, the lights around the bay, just watching the ocean the whole time. I had a good friend who was a mentor later on. His name was Dr. Robert Dill. He had grown up in Rancho Palos Verdes, California, which is in Los Angeles County. That’s on the coast in Los Angeles. He became one of the first scientific divers in the U.S. He said the only people that understand waves are surfers. Even if I wasn’t in the water, I would be sitting there watching the ocean. If somebody else was out there surfing, I’d be watching them and commenting on their various maneuvers and – “Wipeout. Oh, no.” [laughter] Living there with the tides going in and out, I became quite familiar – not in a scientific way – but I guess in an empirical way with a lot of the little creatures you could find on the reef. I’d go down and go tidepooling whenever I had the opportunity, and also digging up as many clams as I could find. Don’t tell anybody; I never had a license. [laughter] Actually, that was a talent. In that particular

area, you had to recognize where they were at. It wasn't like some beaches where you see the whole mudflats, and they're sort of random. These things tended to accumulate in certain locations, and you learned to recognize what those locations were. That was part of the love affair of the sea if you will.

MG: Yes, something you put in your survey was that you learned to swim before you learned to walk.

AT: Yes, that's what my mother told me. I actually have a granddaughter that's similar to this. We don't quite have her swimming yet, so not the same situation. But there was a swimming hole in the Coquille River, where my mother would go down, and my father was there also. She said even though I couldn't swim, I would crawl into the river and go in right over my head. Then she'd pull me back out, put me on the bank, and I'd crawl back in. I always was quite happy in the water. This sounds stupid. I never really liked flying, but I said I didn't mind going to sea because I could swim, but I couldn't fly. [laughter] I always felt a little happier whenever the plane was over water instead of over land, just the opposite of most people. I got over most of that and don't mind it so much anymore.

MG: Can you tell me a little more what Santa Cruz was like during the years you lived there? I'm sure it's changed quite a bit.

AT: Santa Cruz was a classic tourist town. We had the boardwalk then. If you look at Santa Cruz, there's a big boardwalk in Santa Cruz. The roller coaster – I'm sure they've done a lot to modify it, make it a little safer. The roller coaster has been there since I can remember. A lot of the rides have changed, of course. They had a big boardwalk. You had the San Lorenzo River, which went through the center of town, split the east side from the west side. The north side of Monterey Bay, the coastline is east-west. Santa Cruz is on the north side. So the San Lorenzo River, the west side – well, now there's a yacht harbor there. Then, as you keep going, that's when you get to the Pleasure Point area further east, and a little town called Capitola. It was a basic small town. Ethnographically, it was still an agricultural town as well. Other than what we called the *braceros*, when it was time to pick the crops, came in, it was pretty much a Caucasian town, if you will, growing up – not much diversity. Most of the kids there – I would say it was a middle-class to upper-middle-class town. There were people that worked at the various concessions at the beach and this sort of thing during the summer. The population during the winter was somewhere around twenty-thousand. But in summertime, that swelled to about 250,000. That's what I believe. I don't know the exact numbers. You had the summertime gigantic influx of tourists just like other tourist towns, probably like Mt. Desert Island, Maine. You've got Acadia National Park, whatever the entrance to that is. Probably the same thing in a lot of Maine towns these days. It was growing up, to some degree, living there on the beach with friends. It was relatively idyllic, if you will, relative to a lot of areas. I won't say it was sheltered. Kids did the same thing they do in every other town to get in trouble when they get old enough to do these sorts of things. Other than that, it was relatively warm. I always said a cold day in the winter was fifty-eight [degrees], and a warm day in the summer was sixty-two.

It would be a little warmer than that, but not often. We had the Santa Cruz Mountains behind the bay, so you could go up in the mountains. If you didn't like the fog and the little bit of coolness in the summer, you could just go over the mountain, and it'd be ninety, a hundred degrees in the Santa Clara Valley, but it would be probably seventy or so in Santa Cruz with the sea breezes and the fog.

MG: Were you aware of the Pleasure Point Night Fighters? They were a do-good gang that operated in the 1950s and '60.

AT: Pleasure Point Night Fighters in the 1960s?

MG: And the 1950s.

AT: No, I never heard of them too much. Maybe I was too young for part of that. There were three groups within the social makeup of local schools. You had the "Greasers." These were the car people, not an ethnic thing. These were guys that liked working on fast cars. You had the "Socias" [meaning social people]. They were the ones that were the class leaders, the cool people. Then you had the surfers. I was part of the surfers at that time. I never heard the term Night Fighter, per se. The closest it ever came to that was one evening down in Capitola – that was the closest town. There was a place down there called The Lagoon. The Lagoon was a local place for teenagers to have dances, this sort of thing. For some reason, there was some kind of trouble there one evening. Everybody was clearing out, and the cops were running around. So we were pretending we were Sharks and Jets from the old *West Side Story*. The police actually believed we were fighting. [laughter] We see a cop car coming, and so we'd run down between houses, so they wouldn't see us. They were flashing their spotlight around, trying to see what was going on. That was probably the closest that I ever saw anything that would be remotely related to the Pleasure Point Night Fighters.

MG: Well, tell me a little bit more about the schools you attended. What was high school like for you?

AT: High school? I wasn't overly social in high school. I had a couple of teachers that I liked. I went from Catholic school in eighth grade – no brag, just fact – where I was getting straight A's and head of the class to the public school during my freshman year of high school. That was at Santa Cruz High School. This is before they built the school that I graduated from. In my first year, I didn't do too well in public school. I actually flunked general science. It was culture, though, to some degree. In Catholic School, you get called on, and you stand up. In public school, when you get called on, and you stand up, all the kids laugh at you. [laughter] It was the way it was. I guess psychologically, I was a little bit messed up at the time, so I didn't do the best I could have. They gave me an IQ test at the time to see – I won't tell you what the result was, but it said that I could have done much better than I was doing. For whatever reason, I got my head screwed on right the next year and then started doing quite well in high school. In high school, I wasn't really an outsider, but surfing absorbed my spare time more than anything else. I didn't really participate too much in school activities. I just did my thing academically

and did fairly well. I had my buddies that I hung out with and friends, even from the standpoint of – I guess this doesn't matter. I went to only two proms during high school; I didn't like either one of them. [laughter] I just decided. I'm still a little bit that way, not overly social. I worked as well as surfing. I worked as a busboy for most of my high school years as well. One of these prom nights, I was working at the restaurant. It was funny. I was sitting there, cleaning a table. It was a very busy restaurant that I worked at. It was one of the bigger ones in the Santa Cruz area. The guy next to me kept saying, "Hey boy, I need something here." I turn around, and it's one of my friends, and he's with his date. [laughter] It was funny at the time. So I worked at restaurants. I had one stint working during the summer. My stepfather also dabbled in mining interests. There was a diatomaceous earth mine that was used for all kinds of stuff – fertilizer and I don't know what all else – that he had an interest in. I guess it was the summer I was fourteen that I went over there. This would qualify as abuse these days, but it didn't hurt me at all. They made me the night watchman at this place. This was really out in the middle of nowhere. You can look on a map. The closest town was Los Banos, which you've never heard of. We were on the east side of the Coast Ranges at that point. Los Banos was fourteen miles away. I was south of Los Banos. I forget the name of it, but there was a big ranch that was a couple of miles across the road. I went down there a couple of times. Actually, it was big enough that they had people living on it, their workers. Anyway, I was a night watchman for about a month or so out there. Then, during the day, I worked at the end of the bagging machine. The bagging machine, you sit there, and you open this lever. You let out diatomaceous earth, fill the bag with eighty pounds worth of stuff, and throw it on a pallet. I did that for, I'd say, a good part of that summer. Then I came back. That's probably the time when I started doing busboy work most of the time. Fairly ambitious. I wanted money. I tried one time working as a strawberry picker during the summer. I went out, and I said, "Okay, I'll try to make a little money during the day, too." So lots of various agricultural things. I went to a strawberry ranch or a farm with the *braceros*, and had a Caucasian overseer, if you will, that watched the work. I was picking strawberries. One of the things they had us doing was picking weeds that were in the rows of strawberries. So I was just right down with my head right down in the dirt, trying to get every little weed, trying to do a good job. I missed the forest for the trees. The supervisor came up. I left a weed that was about two feet tall because I had my head down on the ground. He said something in Spanish, which caused a big chuckle from the rest of the workers. That didn't last long. It wasn't necessarily because of the embarrassment. I was working late at night and then trying to work during the day. It just didn't work. It was too physically tiring. Regardless I learned that strawberries are *las fresas*; that I know. That is Spanish that I know. I don't remember any other Spanish from that episode.

MG: What was your stepfather's relationship with the mine you mentioned?

AT: He was an investor, if you will. He and another friend of his – a few other mine workers would come during the day.

MG: I also wanted to ask you about something you wrote in your pre-interview survey, which was that you “grew up in an environment that placed high value on books and their relation to learning.” Where did that influence come from?

AT: I guess both my mother and father, but my father wasn't around enough to really matter. It was probably more my mother than father. In fact, the earliest clear memory that I have is of my mother reading to me and my sister. I don't know why this mattress was on the floor, but my sister and I were sleeping – my sister on one side, me on the other. The two books that I remember her reading to us at the time were the original *Bambi*. I don't know if you're familiar with that – Felix Salten. I still have that book, actually. I scribbled my name in it when I was probably three, four years old. I still have that particular book. And a book called *The Otter Story* and it was a story about an otter and all the travails that they went through – traps and members of his family getting caught, and him successfully – what would you call it? Well, ultimately, he prevailed, this particular otter. Anyway, those two stories. Those are the earliest clear memories that I have. I guess I always, for whatever reason loved books – probably my mother's influence. She was also very creative. I do my little poems now too. She wrote a lot. She could write poems. She played the violin and a few other things. I'm sure that that is what influenced me more than anything. Regardless, even third grade, I had a teacher, Mrs. Fairchild. She had married a local bookstore owner. His name was Don Fairchild. I remember this. I would go down and peruse the books down there. I bought a whole collection of books. I think they were two dollars each. You might be able to find these somewhere still. They were Signature books. These were history books. I probably ended up with about thirty of those that I bought through time. Then another series that was quite good, although I confess I haven't read all of them that I bought – Illustrated Classics, very nice books. I still have a few that I'm hoping that my grandchildren will read someday. The other thing that was nice at that time, which I don't know if you could find them now, but they have comic books that were – I remember reading *Two Years Before the Mast* as a comic book. The artwork is actually fairly good in it. It followed the story, obviously, not the whole dialogue. Regardless, it was a whole series of classics comic books at that time. I also did *Archie* and *Donald Duck* and whatever, just like any other kid. You can probably tell looking behind me here.

MG: Lots of books.

AT: Yes, I'm a book guy. I still have boxes of books, too. We've downsized a little bit here. I tell my grandkids – and you having an MLS [Master of Library Science] can appreciate this – books are your friends. They will always be your friends.

MG: I agree. Tell me now about what you were hoping to do after you graduated from high school?

AT: Even to this day, I probably really have no particular ambition to be anything. [laughter] That sounds strange. After high school, I went to a mining college. The reason I did that was my stepfather had invested in another mine. He was always on the wrong side of the environmental movement. It was a mercury mine in northern

California, mercury, and roofing rock. Fortunately, I worked in the roofing rock end of things driving a front end loader the summer after I graduated from high school. He suggested strongly – and my mother concurred – to apply to Colorado School of Mines. No brag, just fact again – that’s considered one of the best, at least, mineral engineering schools in the world. So I applied. That’s the only school I applied to. I had one teacher at school get mad at me when I told her I only applied to one school because – “What happens if you’re rejected?” It never occurred to me that I’d get rejected, and I really didn’t. It didn’t happen, so I went to the Colorado School of Mines because of this mining interest. Part of going to Mines also, having the strong seafaring influence in the family, actually trying to get away from going to sea. [laughter] It didn’t work. Colorado School of Mines is a fairly difficult school, and it’s straight engineering. Not much in the way of humanities, to say the least. It was four and a half years there. Something else I sent you earlier – probably the one class that has influenced me the most, at least in the last half of my NOAA career, was a communications class. Once again, the reason I took it, it was the easiest humanities course I thought I could take. I liked taking pictures, and I had a number of pictures. Mainly, the wilds of Colorado or hiking in the mountains, stuff like that. I discussed that it’s very difficult verbally or, in fact, in any way, to really describe reality. But a photograph is a record of reality. That led to other discussions. Well, is the color the same? What’s behind that rock? What was there one second before? It led to discussions of what was reality and what was truth. I’m not sure that we came up with any answer, but it led to very interesting discussions. I think, to some degree, it led to what became ultimately the NOAA Photo Library and my part of it, and probably, to some degree, trying to also capture the history of NOAA, particularly the part of it that I was associated with more than anything, [which] was the Coast Survey and maritime side of the house. That particular class, in retrospect – the professor was a young guy. I never had the opportunity – I don’t even remember his name. It’s too bad I didn’t thank him for that class. I don’t even know what the guy’s name was at this point. Anyway, the Colorado School of Mines, geological engineering, pretty much a minor in mining engineering. I never liked the electrical stuff of electronics, unfortunately for me, because I would have been a little smarter in some areas of work. Because I didn’t like electrical engineering, that was a course I really didn’t like, or I probably would have a dual degree in mining engineering as well. Regardless, geology got me out. Between my senior year and senior year I called it, I had a semester left at the Mines. After four straight years of it, I worked in the Canadian Arctic for a mining company. The Santa Cruz draft board called my mother during the summer and asked where I was. She said, “Oh, he’s working in Canada.” This was 1969 and the draft board didn’t like that. I should have asked permission to leave the country. They wouldn’t have let me, I know, so probably all for the best. In the meantime, the draft board declared me I-A, which meant you’re draftable. They took away my II-S rating at the time, which was my student deferment. In about November, I was interviewing with companies, seeing about getting work, I had an offer from an ex-professor who worked in Windhoek, Southwest Africa. That’s now Namibia. I’d actually accepted that and was thinking that I was going to go to Southwest Africa. So I wrote the draft board and told them what a great geologist I’d become and all the great experience, and I’d find critical minerals for the U.S. and the free world. And they sent me back my induction notice. [laughter] So I

graduated from Colorado School of Mines on January 20, 1969. On January 23, 1969, I was in basic training at Fort Lewis, Washington, so three days thereafter.

MG: Can I stop you here? There are a couple of work experiences I wanted to ask you about first.

AT: Sure.

MG: When you were eighteen, you did a plane surveying field course.

AT: Oh, yes. Field course. After my freshman year of college, plane surveying was a six-week summer field course. They called it the “man-maker.” They introduce you to operating various survey instruments. They had a very large – I don’t know how many acres, probably close to a square mile or so – survey area that they’d had various monuments that we ran various problems on during this course. I learned to use the surveyor’s transit, a level to determine elevations, and a plane table, which is now a pretty much defunct instrument. Very few people could either operate one now or ever have a need to. Regardless, we used all these instruments to learn to survey various areas. Pretty much classical surveying by today’s standards. Six-week course. Some guys really didn’t make it through. It was both mentally and physically demanding. You were out all day long, carting this stuff around. By the same token, it actually prepared me for the NOAA Corps, particularly hydro-ships, and then working half the night to reduce all your observations you made and try to make some sense out of it or, conversely, to find out you screwed up and have to do it again. Regardless, it was a good course. There were guys that dropped out of school that had done just fine up to that point after that course. That was part of the Mines’ philosophy; you’re not going to get by just on brainpower alone. You have to have some perseverance and some ability, some stamina, or something on that order. I couldn’t tell you what the philosophy is this day. They have a number of additional – we had nine main areas that you could go into at that time. I know they had stuff like mining engineering, petroleum engineering, metallurgic engineering, this sort of stuff. These days, I know they also have environmental engineering. I don’t know what else they may have there. One of the things they did – when I was there, the degree that I have is a professional degree, which is basically a master’s without a thesis, about a hundred-and-sixty-two semester hours of serious stuff. By serious, I mean math, chemistry, physics, and then the follow-on stuff later on. These days, they’ve reverted to a bachelor’s degree with, I believe, the standard hundred-and-twenty-eight semester hours, or whatever it takes to graduate. I don’t know this for a fact. I haven’t really looked for quite a while what the requirements are. So that may or may not be correct, what the exact numbers are, but I’m pretty sure they’re offering bachelor’s degrees now. One of the interesting things about the degree is the degree they did give, the diploma, is engraved on sterling silver. [laughter] It’s not the standard paper or sheepskin, as they say. I discovered this later as part of history stuff that I was doing: A fellow by the name of Robert White, who was the first administrator of NOAA. I don’t know if he’s been mentioned in conversations. Just before he passed away, his widow had called the library to have some of his effects brought to the NOAA Central Library for keeping. This was a function that we, at that time, had absorbed.

Going through the stuff, he actually had an honorary degree from the Colorado School of Mines on, once again, a sterling silver certificate. I thought that was pretty cool when I saw that. I said, "Holy cow, that's really neat." [laughter] Anyway, Robert White, the first administrator of NOAA, also had a sterling silver degree from Colorado School of Mines. That's neither here nor there. I diverged there. I apologize. I was drafted in the Army. About six weeks after – I had also interviewed [with] the Coast and Geodetic Survey. Actually, the interviewer was a fellow from NOAA Corps. His name was Dick O'Connell. He was getting a geophysics masters degree. Dick O'Connell interviewed me, and I guess he put in a good recommendation.

MG: Did he come to your campus?

AT: Yes, on the campus. He was at Mines, also. I knew him. He wanted me to interview for what was then ESSA Corps [Environmental Science Services Administration Corps], but still called it Coast and Geodetic Survey. The ships were still Coast and Geodetic Survey Ships, but the corps was ESSA Corps, Environmental Science Services Administration Corps. He interviewed me. About six weeks into basic training, I received a letter saying I'd been accepted for a commission in the ESSA Corps, at that point in time. This was early March 1969. I took it to my company commander. Fortunately, he was sympathetic to my getting out – not losing a commission would be better terminology. He was a fourteen-year guy in the Army. He started out enlisted and was what they called a Mustang. He'd come up through the ranks and gone to OCS [Officer Candidate School] and got his commission. He was an Army captain at the time. His name was Wayne Glover. He took me to the base adjutant general. There's an obscure Army regulation, AR-200, that says that if you're enlisted in one service and offered a commission in another service that you can be released at the discretion of the releasing service. Amazingly enough, that's what happened to me. Probably about April 5th or so – I don't know the exact day because I don't remember – I was sworn in as an ensign in ESSA Corps by the commanding general of Fort Lewis, Washington. [laughter] I really don't know that it happened to anybody else. So that happened to me. So released from the Army and went into ESSA Corps.

MG: I want to ask you a few follow-up questions. First, were you following along with the events of the Vietnam War?

AT: Well, I don't know the history of the war as well as I should. I will say that. But on the other hand, I knew as a young male that I was subject to going to Vietnam and being drafted. I thought I was going to be going to South Vietnam in fairly short time. We were quite familiar with the social turmoil. Colorado School of Mines was somewhat exempt from that. It was a very conservative school, politically-speaking. The average school that teaches you to blow up mountains isn't part of the liberal social movement, shall we say? [laughter] In the 1964 straw elections, we went two-to-one for Barry Goldwater, which shows you how conservative the school was. Regardless, all I knew was that North Vietnam was encroaching on South Vietnam. The United States was in there. It was having a troop buildup. Chances are, I was going to end up being there at that point in time. From that point of view, I was vaguely aware of what was going on.

From the standpoint of getting much news, even while I was in basic training – no. After the war, I looked to see a few people that I knew – I did look for their names on the Vietnam Memorial, but never found anybody, out of the few people's names that I remembered, that had been killed in Vietnam. They were fortunate in that respect. So I'll just say I was vaguely aware. It was in everybody's consciousness at the time.

MG: Can you tell me a little more about your experience in the Canadian Arctic? What were you doing there? How long were you there?

AT: It was a three-month period. I worked in what's called the Coppermine River area of what was then Canada's Northwest Territories. I know we were above the Arctic Circle. I don't remember the exact latitude. I thought it was seventy north, but I don't think it was quite that far north. This was on tundra. It was above the tree line. It wasn't flat. It was rolling hills. In a way, it was like the Appalachians, although the hills weren't quite as high as the Appalachian Mountains. But they were long parallel ridges with valleys in between. Then long finger lakes that would sometimes be filling some of the valleys. Millions of mosquitos. We had one bear – a barren lands grizzly – that's what we think it was, not a polar bear as we were fairly far inland – that we saw on the other side of a fairly steep ravine one day. My partner was smarter than I. All we had were rock hammers; we were banging on rocks. We were looking for copper up there. We were basically mapping and doing exploration geology. My partner knew to yell as he came – he was a Newfie; he came from St. John's, Newfoundland. He'd been around a lot of bears up there. If you yell at them, you stand a better chance than trying to run away. When that bear went down in the ravine, I decided it was time to hit the road. We ran. The bear could have caught us if it wanted to, I'm sure. The next day, we went down the ravine that he'd gone down. I wasn't going to go down it that day. There were a bunch of bushes that had been broken. So I think the bear was just as scared as we were, which was fortunate. Another time, there were osprey, maybe eagles – I don't know what they were. They were pretty big birds. They nested up there in some of the cliffs. I got underneath one's nest inadvertently. This thing swooped down on my head. That did scare me. [laughter] It made me jump, I'll tell you that. The bird decided it wasn't going to continue that, though. So I was pleased by that. We didn't carry weapons with us. Actually, that summer, I had another friend who worked for another mining company in Alaska. The only thing that I heard ever got shot was a guy getting off a helicopter. He had a .357 Magnum that fell out of its holster, which discharged and killed the guy. I don't know which is worse sometimes. Unless you're really familiar with firearms or very careful with them, it's silly to have one, I probably would have felt less safe carrying a weapon on my holster than taking my chance with the wildlife. That's a personal opinion. Other people dispute that certainly. Yes, from what I knew from that summer, that worked a little better. Once again, it wasn't a good feeling to just have a rock hammer and seeing a bear pretty close. [laughter] Anyway, we never found any good copper. I will confess – the people I worked for knew I did this because I was stupid. That area, obviously, had been glaciated. You find showings of copper in places that looked like they were in place, but probably a good part of the copper had been scraped off by glaciation from the main part of the ore body. We did find a pretty good surface showing at one point. I didn't really think about it. I wanted to fill up the bag

with the good stuff that we sent in for assay. So they send in the bag for assay. Of course, this is the place to send the drillers. The drillers came and didn't find anything. My immediate boss did chew me out on that one. I learned about sampling then, much better than I had in what was called an ore deposit or ore sampling course that I'd had in – I think I had it the next semester, actually – taking samples and how to at least try to figure out from those samples what percentage of ore or whatever. It's the same principle used by doctors if they have invasive procedures where they used needles to go in and get little samples, take biopsies. They'll go in and shoot around an area. Same thing, just that one's skin, and the other is rock. Anyway, a few funny things from that summer. When we first got up there, we flew through Edmonton, Alberta. From Edmonton, flew up to Yellowknife, Northwest Territories. Then, where we were working was another three-hundred miles north of Yellowknife. So they flew us in in an old DC-3. This thing had seen better days. They actually wired the cargo door shut. It only flew at five-thousand feet because they couldn't pressurize the thing. When we got up there, there was still a lot of snow on the ground, so we stayed in the camp for a week or two. The camp tent that I was in, they put three or four guys in. The tent I was in, the head driller, his name was Frederic Bouchon. He was a French-Canadian. Frederic Bouchon²⁾ saw my name stenciled on my sleeping bag, and he said, "Oh, Skippy. Where are you from?" with a heavy French accent. I said, "California." [laughter] He thought I was from Quebec somewhere. He laughed. I laughed. That was pretty funny. He and I, we had some good talks after that. It was funny. He was able to pronounce my name properly, which very few people can. Then, when he did, for me to come back that I was not from somewhere in Canada was a revelation to him. I don't know. I had a partner, and the partner was another geology student. I know I'm probably talking too much here. This partner, we would be flown into various lakes. Floatplanes are how we got around. With this, one of the flights we were on – it was a pilot who had literally crashed and had been in the hospital. They said it had been two years since he'd flown and come back. This was one of his first jobs. They sent this guy out. He lands on the lake, and he picks us up. We knew a little bit about his personal history already. We'd gossip over the radio with other folks. He takes off from the lake, and we startup. This guy, all of a sudden, he looks around frantically – to get an idea of these planes, my partner was sitting up next to him on a seat, and then the rest of the plane was stuffed with our camp gear, and I was laying on top of this. He said, "I smell gas. Do you guys smell gas?" We said, "No, no. We don't smell anything. Everything's okay." [laughter] We go, I don't know how many miles, probably another fifty miles or so to the next lake that he's going to land on. The lake was funny; it had a big shoal in the middle, so he had to really plan his landing. These things don't have runways. On one side of the lake, there was a big high cliff. This guy puts it in the airplane equivalent of neutral. We're dropping like a rock, and he's circling, looking around. We're coming up, and we got this cliff coming up right ahead of us. My partner and I – he looks up, and he guns the engine, and we get up above it. When he finally lands, he bounces three times and says, "Made it again." [laughter] Any time I've ever had a rough landing on a commercial aircraft where the plane seems to bounce a little bit, I always say, "Made it again." Anyway, those are some of the stories from that time. There are others, but this isn't what we're here to talk about.

MG: I also want to hear about your experience at sea, two years before your time in the Arctic.

AT: At sea, I was an ordinary seaman. I had three primary jobs: cleaning toilets, chipping paint, and standing both wheel watch and lookout. That's pretty standard for an ordinary seaman everywhere. It was what's called a C2 freighter, a World War II-era victory ship, I believe, called the *Pacific Bear*. I mentioned my uncle was on Far East Lines. This also was a Pacific Far East Lines ship. Admittedly, through my father's connections, I got into the Sailor's Union of the Pacific. I still have that card from being a then-card-carrying member of that particular union. I ended up getting this freighter out of San Francisco, the port of San Francisco. Both the trips had two main stops – Kwajalein, which is in the Marshall Islands. That's where they have – the Pacific Missile Range is in Kwajalein Lagoon. So we went to Kwajalein and then we went to Guam. Our main cargo, I always jokingly said was beer and cigarettes. That was the main part of it. I didn't encounter much weather. One trip, we were on the outskirts of a tropical storm, but nothing too serious. Let's see. I don't know if you want to put this in or not. Being young and stupid – I was nineteen – I had three lost days on Kwajalein. As a result – I haven't been back to check this – I was kicked out of every bar on Kwajalein Island for life. [laughter] I did some other stupid stuff during that period. Probably leave it at that.

MG: That's fine.

AT: Unfortunately, because of the humidity – I had a fairly cheap camera, and I think humidity got to the film so a lot of the film was ruined. These were the old freighters with sticks and booms and hatch covers, nothing like what container ships look like today. We had taken a bunch of hatch covers and secured them together and put canvas over them, and then made a swimming pool. It wasn't so you could really swim. You could lay in it when it's ninety-five degrees out and ninety-percent humidity. So we made that. The guys would break some of the cargo out of the hold and sit there. You could drink on ships in those days. That was before the Exxon Valdez. So we had a pool party on a rusty old freighter. That was fun, looking back on it. Another thing, on Guam, I rented motorcycles with a couple of friends and toured the island. We went on a great search for Talofofa Falls. Talofofa Falls is now a park that you can drive to. We couldn't go any further on our bikes. We actually took a hand ferry across a river, going hand over hand on a wire, to get us where we were going. We went as far as we could on the motorbikes. We started walking. We still had about a mile to go, and it was fairly heavy jungle. We knew there were snakes. These aren't deadly snakes, but they can make things really uncomfortable. I don't know the exact name, but they're moderately poisonous. We just got out of there. We never saw the falls. We stopped at a little hamburger joint, a roadside shack. I swear to god, I took one bite; I thought it was a rat-burger. [laughter] It was horrible. I didn't finish that hamburger. I didn't get sick, so it was okay. Anyway, I had nice memories. I slept in a room with two able-bodied seamen. One was a union goon squad guy. I think they shipped him out every time he beat up somebody. His name was Charlie Tucker, a great big guy. He had a very snarly panther tattoo on one arm and a big scar down his neck – I don't know what that came

from – and other threatening tattoos. He was also an alcoholic that, on more than one occasion, would be in DTs [delirium tremens] screaming in his bed. It was a little lesson on life. The other guy was a guy that, for some reason, had gone to sea when he was younger. Unfortunately, like many of these guys – I don't know if he ever did this – always the big plan is to get a mate's license so he can make the "real" money. I have no idea what happened to either one of them. That's the only time I ever saw them or sailed with them. So I spent the summer on the ship and survived it. I had various adventures and came back. That was another reason why I was a prime candidate for NOAA Corps. I'd worked in fairly remote areas. I worked on ships. One thing about remote areas – one fellow that came from Mines that was working up there with us in the Canadian Arctic, he actually did have a breakdown. He was in a camp with others. He just got on the radio one day, stayed there for about twelve-hours, screaming to get a helicopter to come pick him up and get him out of there. There are people that don't do well in remote, isolated situations. Well, in NOAA Corps, we see it, too. It does take a certain type to spend time on ships in sometimes very remote areas for extended periods of time. I had those qualifications behind me, not necessarily academic, but you learn a lot from that kind of stuff.

MG: Tell me now about your interview for the ESSA Corps. Was that a position you were hoping to get when you graduated? What did you know about ESSA at the time?

AT: In thinking about it, to be perfectly honest, I may have thought of it as a stopgap measure, as a safety valve for not getting drafted. It didn't work, initially at least. So to be perfectly honest, I had considered that as a possibility. On the other hand, the fellow that interviewed me thought I was a prime candidate for that sort of work, also. I don't know if this story is worth telling or not, but one of the things that they did with this – in the Army, they tried to get everybody to buy a savings bond. At that point, a private in the Army was making a hundred and eight dollars a month. I was the only guy – I forget if it was battalion or brigade. I forget which order it goes – of about a thousand guys that hadn't bought a bond. So they took me in this room, a couple of young officers. It was like being interrogated. I'm surprised they let me out of the Army relative to this. They took me into this room. There was one single lightbulb hanging down, sort of like you see in these weird movies. They put me in a chair, walking around me, demanding that I buy a bond, and asking me why I wasn't buying one. Well, I said, "Look, I just graduated from one of the best engineering schools in the nation. My first job, I'm making a hundred and eight dollars a month. And I'll be goddamned if I'm going to give you any part of that." [laughter] They sent me back.

MG: How did they respond?

AT: I don't know. I really don't know. It didn't seem to hurt me. They didn't haze me out of the Army or have a blanket party and beat me up.

MG: What was your basic training experience like?

AT: This was sort of weird. It was funny. The drill sergeant we had – I mentioned there was a company commander. Then you have drill sergeants. The company has a number of platoons, so you have the drill sergeant, and he's in charge of the platoon. One of the first things I learned, and this wasn't a killer to me, is to put your stuff away and lock up your locker. Coming from a somewhat upper-middle-class background, it didn't occur to me that there are people out there that would actually steal their colleagues' stuff. So I did leave out my wallet one day. I had some money stolen. That, of course, led to the perfunctory have everything dumped out of my locker and put back in. That was another learning experience. That was one thing; working on the ships, working with those guys, I never had to worry about a thing. They were shipmates. Getting back to that, out of forty, fifty guys in a platoon, there were some that had come from worse circumstances in life and didn't have the same moral strictures. The rest of it was standard stuff. You're marching, and you're running – it was in the wintertime – camping out when you're freezing, which didn't make a lot of sense for Vietnam. Regardless, that's what we were preparing for. Rifle range. A lot of running. I guess you had to be able to run three miles. Actually, I was in pretty good physical condition then. That wasn't an issue. What else? There were a few other things – crawling through the mud, live-fire exercises where you're crawling under machinegun fire – a little bit of that. It was funny. I shouldn't really say this, I guess. After I received an offer of a commission, for whatever reason, as opposed to being blacklisted, the drill sergeant – his name was Sergeant Bill Story – took me under his wing. He seemed to be proud that he had a budding officer in his platoon. There were days where he'd take me for coffee and donuts. It's sort of horrible in a way that other guys are out there slogging through the mud. We'd sit there and exchange stories. He'd tell me stories about Vietnam when he was there. I'd tell him stories about being on a ship and working in the Arctic. He was probably ten years older than me. Not what you would call your – even though he was career-Army, he was still very open-minded, funny guy. He was a somewhat compassionate individual, too, with what he had been through and what he had seen. So, yes, good people.

MG: How were you transferred to ESSA? Did you get to go home first? Did you go straight to ESSA training?

AT: All I had was my Army uniform. They have you send home everything. So I still was wearing my Army uniform. After I was commissioned, I packed my stuff in a bag and went to Sea-Tac [Seattle-Tacoma International] Airport, which is the Seattle airport, and flying standby the flight home. I'm sitting there and tell the folks there I'm flying standby. They say, "Okay, you're flying standby. Go behind this screen, and we'll call you when we're ready." So, I'm sitting there and sitting there. Barely anybody got on this first flight. Then I watched the plane pull away from the gate. I said, "Wait a second, I'm flying standby. There's hardly anybody on the flight." They said, "Oh, we forgot you." You get so used to being told what to do. They tell you to sit in a place; you sit in a place. It doesn't even occur to you. So, it took that short of time to brainwash me, at least from the standpoint of following orders. I got on the next flight to San Francisco and then had some friends pick me up there. I forget if it was my friends or my mother and stepfather. I forget how that worked out. I only got home for a couple of

days because I had to then fly to Norfolk, Virginia, for NOAA Corps training class – ESSA Corps at that time. I think April 8th or 9th is when I made it to Norfolk. I'm not sure if that's when training class started. I don't remember the date — we started training class. So, two months of training, which was just learning which end of the ship is which, and a little bit of trying to get used to the ESSA uniform at the time, which is very similar to, as you know, Navy uniforms – so getting that kind of stuff. At the time, I lived in Virginia Beach. I had two roommates, one of which stayed NOAA Corps. The other got out after his three years. I'm trying to think. Out of the twelve guys in our training class, I think four of us made it a career. One made it to commander, two of us to captain, and the other – because of a physical problem – retired as a lieutenant commander. All these guys who get into NOAA Corps or ESSA Corps, they're all pretty smart people. They all have various skills. They're quite confident. It was a little change from being in – I did make good friends in the Army. I'll get back to that in a second. This is one of the funny things for me. It struck me as very funny. Probably my best buddy was a guy by the name of Mike Stanosheck. Mike Stanosheck came from Osmond, Nebraska. His family owned the Stanosheck Hardware & Mortuary. [laughter] Whoever heard of a hardware and mortuary?

MG: Quite the combo.

AT: He was a great guy. Then another guy, Ralph Thomas, had come from Monterey, California. So, we at least had that little bit of stuff to talk about, similar backgrounds. Anyway, those were the two guys. I guess one other guy, Jerry Van Meter – I think that was his name. He wasn't really good friends with them, but he was a pretty smart kid. He'd actually signed up to – actually, he volunteered, and he volunteered to go to Germany. He was learning to fix various electronic and optical instruments. He was going to have a semi-scientific role within the Army. Those are the three guys. I don't remember the names of any of the rest of them. It was a long time ago.

MG: Can you tell me about ESSA as an agency? What did you know about its history? Who was leading the agency at this time?

AT: Well, I can address who was leading it. I know that Robert White, prior to the formation of ESSA, had been the head of Weather Service. Rear Admiral Henry Arnold Karo, who upon the formation of ESSA, became Vice-Admiral Arnold Karo. Well, Karo only stayed in the agency until 1967. But White became the first and only administrator of ESSA. Karo became the – I forget if it's assistant or deputy administrator of ESSA, trying to meld the two agencies together. The Weather Service was bigger. The chief oceanographer of the Coast and Geodetic Survey at the time of melding was a scientist by the name of Harris B. Stewart. I don't know if you've heard that name or not. But Harris B. Stewart was influential in helping form the various marine laboratories and personally founded the Atlantic Oceanographic and Meteorological Laboratories a few years later. These were the three big names that I remember. I'm not even sure at the time – I think it was Admiral Allen L. Powell. It's always been split; there was a director of ESSA Corps, and there was a director of the Coast and Geodetic Survey. There was Admiral Powell, who I think was the director of the Coast and Geodetic Survey that was one level

higher than the ESSA Corps Admiral. I think Powell actually even came down to our graduation in 1969 from ESSA Corps training class. White, upon the formation of ESSA, once again became the administrator. He served in that capacity for the five years of ESSA's existence. I don't know who became his deputy afterward. The first seventeen years of my career, the only thing I really cared about was the job at hand. I'm sure that they influenced what I did, from the standpoint of interacting with Congress and getting funds for various programs or whatever. To me, that was all transparent. Put me on a ship, put me on a field party, tell me what you want done, and let's get it done. That was basically it. Harris B. Stewart, I met later on. Out of the three or four that I just mentioned, he's the only one I ever got to know personally. A really fine man that did a lot of good for NOAA, the future NOAA per se. Also, a quite kind man. Everything you can say is good. I don't know if anybody ever said anything bad about him. Anyway, those are the only four names that I can remember. Training class – my training officer's name was Commander Joe Dropp. I had a few interactions with him through the years, not really a lot. When I was the commanding officer of the NOAA Ship *Peirce*, he was the commanding officer of the NOAA Ship *Mount Mitchell*. Occasionally, we would be on similar projects, and we'd have to make plans together or at least try to get some cooperation between the two vessels in what we were doing. Other than that, I didn't really have a lot to do with him. Who else can I think of from that period? The only other fellow that ever really I stayed in touch with – and this was after I went to the ship – was Fred Jones. He was in the training class after mine. Then he stayed and made NOAA Corps a career. After he retired, he went to Newport, Oregon, not for NOAA work but because he became the Port Captain [marine superintendent] for Oregon State [University]. He was working out of a ship or ships that were working out of Newport at the time. He spent a number of years working for, I guess, the State of Oregon as a port captain for their vessels. He's very knowledgeable [in] ship systems, both mechanical and electrical. He had ~~done~~ an electrical engineering degree from UC [University of California] Berkeley. Fred and I were running mates for a number of years – well, at least the shipboard years. On my retirement from NOAA Corps, having asked him to share some thoughts and memories, he said – and probably true – “Some of these stories remain best untold.” [laughter] Anyway, Fred and I were shipboard buddies, at least on the Coast and Geodetic Survey ship, which then became the NOAA Ship *Surveyor* upon the formation of NOAA. Anyway, I went through two months of ESSA Corps training. I certainly was familiar with shipboard life. I was as familiar as most of these guys, or more so, with pretty much what we were getting into. We got to pick our assignments, or at least suggest them. I picked the Coast and Geodetic Survey Ship *Surveyor*, which was then one of the bigger ships of the NOAA fleet – well, ESSA fleet then. It was working in Norton Sound, Alaska, which is in the Northern Bering Sea. To diverge a bit here – when I was in the Colorado School of Mines, I read a lot of Ayn Rand. This is very right-wing, very strong individuals with enough willpower you can do anything sort of thing. I was even subscriber to her *Objectivist Newsletter*. Well, the moral of the story is that I thought I was going to go to South Africa. The Army thought I was going to South Vietnam. And for the second year in a row, I ended up going back to the Arctic. At that point, I decided that Ayn Rand was full of crap. [laughter] So I canceled my subscription to *The Objectivist Newsletter*, and came to understand at that point in time that we don't

always have control over our destinies. I think this COVID-19 outbreak certainly reinforces that view.

MG: Do you want to take a quick break? We've been talking for two hours. I wouldn't mind taking a bathroom break and checking our audio. Are you up for continuing?

AT: I still have my voice. Yes, I can keep going for a while.

[TAPE PAUSED]

MG: We left off with your first assignment on the *Surveyor*.

AT: Yes.

MG: Can tell me where you went, who you reported to, and a little more about that experience?

AT: Where I started on the ship, I guess you would say, is I flew from Norfolk, Virginia. I'm trying to think if I even stopped through my home on the way to the ship. I ended up flying up to Nome, Alaska, where I met the ship. It was working in Norton Sound. This is probably late May, maybe early June of 1969. So the ship was doing what I call classical ship hydrography, what we call mowing grass – going back and forth in Norton Sound about ten or twenty mile-long lines. I don't remember exactly. In port, we're in Nome, Alaska, and then Dutch Harbor, which is in the Aleutian Islands down in the South. Then I had one in-port in Adak, Alaska. That was basically a learning time, learning the process of hydrography per se. It was the old-time where you were actually handwriting the soundings on what we called the boat sheet, doing it by hand as opposed to having a computer do all of this for you. Having sounding volumes where you're writing down every twenty seconds, minute, whenever a – what do we call it? Not a station. I don't even remember what we called it. We had fixes. We'd have a fix every one, two minutes that we'd do with the electronic navigation. That was hand-plotted on boat sheets. The soundings were plotted by hand. Well, basically, that was it, back and forth. One in-port in Nome was interesting to me because some of the people I'd worked with in Canada the year before were then working out of that area, and I happened to meet them. They had a mineral exploration program that they were involved with on the Seward Peninsula. That's the peninsula that Nome is on the south side of. During that time, I did have one trip. I flew up to Kotzebue, which is on the northside of the Seward Peninsula. That was interesting because a 727 was landing on a dirt strip at that time. I also watched it the next day. I actually have a picture of it with the dust flying up behind it as they're taking off from a dirt strip, which is something you don't see most places in the world. I think now they have a paved strip. I went up there to level a tide gauge and also get an elevation for the Weather Bureau barometer that was there. The Weather Bureau barometer is what controlled the aircraft for elevation that did land in bad weather coming into Kotzebue. Actually, we couldn't find any of the benchmarks because houses had been built over them. The fellow I was with and myself, we basically leveled to water's edge, which is probably not the most accurate thing in the world relative to what

actual sea-level was, but that was the best we could do. So we did leveling there. I remember making some bad jokes. I might have had some similar work in Nome. The kids asked us what we were doing, and we told them we were leveling to the interstate highway system. [laughter] But that didn't make it up there. I don't know if they went home and told their parents that or not, but that isn't what happened. I guess July 4th, we were down in Dutch Harbor. That's a big fishing port now. Being one of the junior-most people on the ship, I was declared the grand marshal of the Mount Ballyhoo race. Mount Ballyhoo is a sixteen-hundred-foot mountain that's there at Dutch Harbor. What that meant was that I had to climb the mountain and get to the top before the racers did, so I could see who got there first. Actually, it's funny. There was a kid that was on UCLA [University of California, Los Angeles] track that was working a summer job. I left about an hour before he did, and got to the top about two minutes before he did. He was in much better shape than I was at that point in time. At Mount Ballyhoo, we had shipboard parties at the old officer's club there. The base was deserted then. It had been an Army Air Force base during the Second World War. There was an officer's club that was still there. I remember going into that. Nobody was there. It wasn't like there was a bartender or anything. We carried beer on the ship for parties, that sort of thing. I can't really think of anything else from that particular trip. Captain Richards was a very good captain, very competent. We came down to Seattle. At that time, Fred Jones had come on the ship, too. We bonded as buddies. We went down to Seattle and we in-ported at Lake Union. That used to be the ship base. You go through the Lake Union ship canal. You're actually there pretty close to the Space Needle if you've ever been to Seattle. So we in-ported there for the winter and changed captains. Captain Arthur Benton became the next captain. The project that we had the next year was a Navy project. It was classified top secret gravity work that was being done. It was gravity work for being able to shoot missiles better out of Vandenberg Air Force Base to the Pacific Missile Range, so they could understand the various geophysical parameters affecting the initial missile flights as they were launched from Vandenberg. That project went from down the coast of Mexico, twenty-nine degrees north, which was about a third to halfway down the Baja Peninsula, and went north to pretty close to Cape Mendocino, which is north of San Francisco. During that project, we ran somewhat over fifty-thousand miles of what we called "big three" – or what I always thought of as the big three at that time – gravity, bathymetry, and magnetics. It was funny. We had a gravity meter that the Navy brought on board that was two decks above a gravity meter that we had on our ship. Initially, their work was classified, and ours wasn't. Actually, we had, basically, an inefficient number – basically, too many junior officers on the ship at the time, so you didn't have a full watch schedule most of the time. I can't remember the exact schedule, how it went, but all of your time was not occupied, to say the least. So just to amuse myself, I started seeing if I could process our gravity data, which I basically figured out how to do, and started making gravity maps from that, from the data that we were collecting. After a couple of weeks of that, I decided, "Well, that's foolish. Even if I do try to publish something, chances are it will be classified, and I won't be able to do anything with it." The magnetics was not classified. So I basically figured out how to process our raw magnetic data and convert it to what are called magnetic anomalies. I don't know if you've ever taken any geology or geophysics, but you've probably heard of continental drift and seafloor spreading. One of the major means of unraveling seafloor geology in

history is through magnetic anomalies. Well, I won't get into all of this, but the majority of magnetic anomalies – what's called magnetic striping – is formed on the seafloor ridges, the mid-ocean ridges. It's when lava comes to the surface, solidifies, and cools. Then magnetic minerals that are in it orient themselves in the prevailing direction of the Earth's magnetic field at that time. The magnetic field of the Earth periodically reverses its polarity, meaning that what we call the South Pole now, if you had a compass, you'd have a compass pointing to the North Pole and vice versa, North Pole becomes the South Pole. The upshot of this is that because the ridges are linear and it's a fairly constant process, the formation of lava or the upwelling of lava along these ridges, is that you get a fairly steady procession of magnetized strips of rock. Whenever the magnetic materials align themselves with the present polarity of the Earth's magnetic field, then you will get a positive magnetic anomaly. It will be reading higher than what would be theoretical in a given area. Whenever it was formed, at a time, when the magnetic poles were reversed, then you will get a magnetic low. So, I figured out how to do this. We had about fifty thousand miles of survey data, survey track line between down the coast of Mexico, and up to Cape Mendocino. We were running out to three-hundred miles, ten-mile line spacing, and from about a hundred miles in, we were running five-mile line spacing. To give you an idea, just think of these strips of data all the way up the coast. So I had a little Wang computer onboard, desk calculator. I figured out how to program it for both the position we were at and what the raw magnetic readings were, and come up with anomaly values, that then were hand-plotted on boat sheets – one to two-hundred-fifty-thousand scale sheets. I had about thirty-two of them for the whole survey. I brought it to a couple of places when I was initially working. I took it to the USGS [United States Geological Survey] in Menlo Park, California, because our in-ports were San Diego and San Francisco for most of this particular project. I took it there. Their marine geology people looked at it and said, "I think you got this right." I kept doing it until the end of the project. I was fortunate; when we went back to Seattle at the end of the project, I had all these sheets. At that point in time, there was an organization called Pacific Oceanographic Laboratories, which was ESSA's scientific laboratories. Dr. Robert Burns and a Dr. Barry Erickson – both of them have since passed away – saw it, and, in their view, it was done correctly. They put one of their draftsmen to work, reducing it so that it was all on one sheet. This resulted in what was called the East Pacific Magnetic Anomaly Map, which NOAA published. I guess it would have been NOAA at that point. NOAA published it as an operational data report. Actually, that was used by a few academics, particularly on the West Coast, to help unravel some of the tectonics of the West Coast. Actually, about ten years before, the Coast and Geodetic Survey Ship *Pioneer* had done classic surveys, magnetic surveys. They went from thirty-four north up to Cape Flattery, running lines offshore like that with the magnetics. There'd been stuff published there. So the stuff between thirty-four and forty that I had done was a repeat, but it was a check on what they'd done. The stuff south of thirty-four, that was all new, and they were able to use that to unravel some of the geological history of the interaction of the Pacific plate with North America. So that was good. That particular thing, I got a NOAA Special Achievement Award for. Shall I mention these things? I probably ended up with more credit than I should have for a number of things. That one there, that was one that I pushed even while I was doing it. The captain I had at the time said, "Why are you doing this? This will all be done by computer in a few years." "Well, okay, we'll do

what we can with what we got.” He didn’t stop me, but he did think it was wasted effort – I did get a number of other officers on board to help me with that. It wasn’t just me doing it, but I did get assistance. They were looking for stuff to do, too. [laughter] Names I can remember – Ken Potter, who I know became a professor at the University of Wisconsin. He got a PhD in geology or geophysics. Another officer by the name of Ken Leonard was a marine biologist. I don’t know what became of him ultimately. Jim Buschur, electronics engineer, officer, brilliant guy. Of course, my friend Fred Jones helped me out with it. So there were a number of – I don’t remember everybody that assisted with it. I apologize to anybody I may have forgotten that may still be alive. [laughter] Who knows? So that was the first project.

MG: When ESSA became NOAA, did that have an impact on your job?

AT: The only difference it made to me – and I actually have a picture of me standing on the ship under a sign saying “NOAA’s Ark 63,000 Miles” when we returned to Seattle. I didn’t know this. I found it later in photographs I was looking through. That same year, before we came back to Seattle, we had a project that was called North Pacific SEAMAP [Scientific Exploration And Mapping Program], where this was unclassified work, and this is part of the ongoing project to conduct mapping in the North Pacific Ocean. I jokingly said we’d go north until we saw the snow in the Aleutians and south until we saw the palm trees in Hawaii, and then go back and run the other way. Probably ran about ten, fifteen-thousand miles of track line after we finished the California coast project. When we came back to Seattle that year, we had actually run all-total sixty-three-thousand nautical miles, the equivalent of more than two and a half times around the Earth, except it was all in a couple of places as opposed to going around the Earth. We came back in November of 1970 on that project, and October 3, 1970, is when NOAA was formed. So we had a big sign on the side of the ship – NOAA’s Ark, sixty-three-thousand miles. That was one of the bigger, for mileage purposes, deployments of I think any NOAA ship ever – a lot of work. During the winter in-port, we were working on Lake Union. We’d never done this, so we were training to do what’s called launch hydrography using the small boats because we had a project coming up where we’re going to survey the harbor at American Samoa and the harbor entrance. We’d be out in the boats, and there was a local bar called the Hungry Turtle at one end of Lake Union. At lunchtime, we’d go into this bar to have lunch. We’d go dock on the boat right next to the bar. [laughter] So the Hungry Turtle, we spent a lot of time there filling up. Well, we’d just have lunch there during the day, but probably spent more time than we should have there at night, as well. So sort of a local hangout at that time for the junior officers.

MG: What were you doing in Samoa?

AT: What were we doing? We were updating and revising the nautical chart of the harbor and the harbor entrance. I was officer in charge of a small boat – well, survey launch that was working the inner harbor. Fred Jones was in my crew. The way that launch hydrography worked then – other than the fathometer or the sounding instrument, everything else was manual hydrography. This was what we would call visually-controlled hydrography. By visually controlled, there were a number of signals – tripods

or other types of small, wooden edifices covered with red, white, [and] black material that we could readily identify – that were put over known points around the harbor. The way that you would position your boat was that you'd have two guys with sextants, and they would measure the horizontal angles between one center point, then a left object and a right object. So you'd have the center. I'm looking at my hand backward. [laughter] Okay, this is my left arm. I don't know if that's going left for you. [as seen on Zoom computer screen.] From the right object, you'd go the other way. So three objects, but one common center object, and then this would be plotted by what we called three-arm protractors. The British called them station pointers. They were invented in Britain, but about two-hundred years before. That's how old this technology was. So these were plastic station pointers. As officer-in-charge of the boat, it was my job to plot the angles and plot where the boat was at. Then I was basically giving orders to keep the boat on the survey lines and to tell them when we came to the end of the line, this sort of thing. These boats were non-airconditioned. So it'd be like ninety, a hundred degrees inside the boat while we were working, and I was sweating continuously. I'll confess – I don't know if I'll get charged for this at this point in time, probably not, but if I sweated on the sheet, the plastic station pointer would suction down on the sheet, and I couldn't move it when I had to. I think I broke three of them because I'd get mad and then throw them up against the side of the launch. We managed to get the harbor surveyed. I don't think it was the most wonderful survey that was ever done, but most of the work seemed to have been acceptable. I think the charts were updated based on those surveys. We finished up the harbor and then did a little bit of work on the outside. It was sort of interesting. The boats on the outside – one of them actually got caught outside the reef and got caught in a swell. It got pushed up inside the reef. It didn't get turned over. There could have been some serious injuries or perhaps even worse if that would have happened. Luckily, nobody was hurt, and it just surfed the boat in over the top of the reef. It was a two-day process to extricate the boat from the inside of the reef line. One of the Samoan villages that it was close to, their people helped us basically get the boat off the reef. It probably took about thirty or forty people to do this, pulling on a large hawser to ultimately get it off and get it back outside the reef again. So it was sort of fun. There was one fellow – nameless. I doubt that he'll ever see this. Relative to those of us who were put on the boats, he was a little bit spacey, shall we say? He was given the job of coast pilot, which meant that he got to run around to the villages and write about what sort of hazards may exist offshore. He got to talk to all the native chiefs. He'd come back to the ship at night, and he'd talk about the wonderful dinners and luaus that he was getting with these people. While the rest of us were working on the boats all day, sweating our you-know-what off, he was having this great time. As a result of that, one of my more cynical corollaries is that incompetence is its own reward. [laughter] I don't know if you want to share that or not. That's one that still rankles me a bit. He had a great time, while the rest of us worked hard. You think you're going to this tropical paradise, but it was thirty days of hard work – hot, sweaty, bouncy work. [laughter] Anyway, we all survived.

MG: Did you have any issues or close-calls on board? A man overboard, medical issues, or problems with the boat?

AT: Not that vessel. We always had a corpsman on board. I wasn't necessarily privy to all the problems. I remember one thing. The worst potential for an accident that occurred was the boatswain was demonstrating a flare gun to us. The flare blew up basically in its face. Fortunately, he wasn't injured too bad by that, although certainly not a good thing when it occurred at the time. He made a fairly quick recovery; he didn't end up with any sort of lasting injury, at least that I'm aware of. I don't remember any – I mentioned that we lived on the north side of Monterey Bay, basically hanging over a cliff. There was one time that we were working off the California coast, and it became exceedingly rough, so we went into Monterey Bay and anchored. I could actually see my house from where we were anchored. [laughter] "That's where I want to be." But I don't remember anybody getting hurt badly during that.

MG: Can you tell me about who made up the crew?

AT: Who made up the crew? Of course, there are the commissioned officers. They're the deck officers. Occasionally, there were one or two experiments putting commissioned officers in the engine room that had the correct credentials. They were recruited as marine engineers. So you had the commissioned officers. Then you have your chief petty officers – this is like the boatswain, the chief steward, the chief yeoman. I'm not sure our ships even have yeomen anymore. I'm trying to think of the various – well, there's the engine department. The chief engineer was always part of the wardroom, also, if he wanted to be. Sometimes the chief engineer preferred eating with the crew. So you had engineers. You had the yeoman department; at that time, on the bigger ships, two people. You had, like I say, stewards; they're the cooks, and they serve breakfast and dinner and keep the galley clean and keep the supplies on board. Then, importantly, the survey department. You had a chief survey tech. The chief petty officers and some of the higher-ranking members of these various departments were longtime employees. From the standpoint of the crew, you ran the full gamut from total rumdums to college kids. We also had a chief quartermaster. They worked primarily on the bridge. They ordered charts, kept the charts up to date, and they shared wheel watches with the junior officers. The lower-ranking people, like the wipers and firemen – firemen usually had been working for a couple of years with the ship. They were usually temporary. By that, they were hired for the season. They ran the gamut from really hardworking, intelligent people to alcoholics and sometimes somewhat dangerous people. [laughter] On the *Surveyor*, I always joked that they shanghaied guys out of the bars the day before we sailed. They'd wake up two days later and find out they were going to northern Alaska. It wasn't quite that bad, but there were some pretty strange people occasionally that you'd encounter, but most of them were pretty good.

MG: Was there a distinction on board between the NOAA Corps and the rest of the crew, the other mariners?

AT: Yes, there was. In general, this isn't to downplay the crew. There were some very intelligent, hardworking, knowledgeable crew people. In fact, smart officers would use this knowledge and experience. All of the officers, all had their engineering degrees or science degrees of some sort. In training, they would tell us, just like the Navy, that you

shouldn't consort with the crew, but it was hard. There was no way that you didn't make friends with them. You work with them every day. You make jokes with them every day. Occasionally, there were disciplinary issues. I had to report a guy that fell asleep on watch up on the bridge when he was supposed to be on lookout. That guy was fired. Another time, as captain, I'd wander around the ship at night and see what was going on. A guy was asleep in the engine room, and he got fired. You'd have to do that to maintain discipline. The engineers, for myself – I'm not particularly mechanically-inclined – I could listen to them and liked to think I could speak intelligently with them and understand what they were saying to me. It depended on the chief engineer. I forget if we had second engineers on all the ships, but we generally had a first engineer or first assistant, second assistant, third assistant – this sort of thing – depending on the size of the ship. These guys were smart guys. They understood their work. The officers had to depend on that, the same way that the survey techs that they worked with year after year, the boatswains putting the boats over, a dangerous operation if it's not done right. They understood this completely – putting over the side gear, and what it took to do it safely. As a junior officer, I probably consorted a little too much, but I doubt that I'm the only one. On the other hand, as a senior officer, I found myself relying on their advice and talking over problems. Sometimes, depending on the nature of it and what to do, it was an inter-departmental problem, and you had to rely on that wisdom. If you didn't, you were a fool. At least that's my feeling. You can quote me on that. [laughter] We were not omniscient is I think the word. The officers were not omniscient.

MG: Is there anything else we're missing from your time on the *Surveyor* before we talk about your next assignment?

AT: Well, the last thing we did on that ship – after we left American Samoa, we ran a science project which, at the time – American Samoa, where it's located is very close to the International Date Line. We did go over the International Date Line. I forget which side it's on [Editor's note: American Samoa is in western longitude]. We went south to the Tonga-Kermadec Trench. We crossed over, headed west, and then we turned around and came back and ran a line as far south as thirty degrees south – well, American Samoa is at fourteen south. Crossing the Tonga-Kermadec Trench, we ran down to thirty south and then ran all the way across the Pacific Ocean. We actually ran a five-thousand-mile line at that point. At that time, it was claimed - I don't know if any other ship – I'm sure that other ships have done this since, but it was supposedly the longest geophysical line that had ever been run on part of the surface of the Earth. That I can't verify for sure, but it was a long, long line. We went across on thirty south; then we cut up to Callao, Peru – that's the port city for Lima – for in-port at the end of that cruise. From there, we went up to Seattle. When I got up to Seattle, at that point, I didn't go on the next cruise, which was off the Washington Coast, where they did a lot more mapping off of Washington. But the beginning of that, their initial navigations stations – in those days, there was no GPS [Global Positioning System] - We set up our own navigation stations for these offshore cruises. For a two, three-week period, I was sent to – on a Quileute Indian Reservation, we had a navigation site there on the Washington Coast. I manned that with an electronics technician, just to keep it running. I admit I didn't know what to do, but I was there learning what I could. At the time, the ship was working offshore, and this was

one of their navigation stations. So I spent, like I said, two, three weeks on the Washington Coast. Then I was finally detached from the ship at that time. That was probably about April or May of 1971.

MG: Talk to me about your next assignment.

AT: My next assignment, I always think of as the last great American adventure, and that was geodesy. Geodesy is precise land surveying, which takes into account the curvature of the Earth. Basically, I'd be willing to bet that your property lines where you're at are ultimately tied into a Coast and Geodetic Survey marker. There are about a million of those around the country. You climb a mountain. You say, "Excelsior, I'm the first one here." Then you look down; there's a little bronze disk in the ground that says, "U.S. Coast and Geodetic Survey," or "NOAA National Geodetic Survey." We're the people that put those in. We established mapping control for the United States. We have over a million points in the ground. Various crews have done this. Two basic kinds of – well, there are a lot of marks, different kinds of marks. But the two basic kinds are elevation, which are called benchmarks – or at least that's what I've always called them – and triangulation marks and they are latitude and longitude. Basically, they're used, once again, to establish control for mapping major engineering projects, such as the interstate highway system, such as the big dams that were built in the past, like the Hoover Dam, a lot of survey work up around the Grand Coulee Dam, this sort of thing. The Coast Survey was always there as part of that, helping them control the building of the dam and if there was stuff like ground settlement afterward, what they could do to mitigate problems, and also what to do about problems after they were discovered. Geodesy is also the necessary part of global navigation. GPS could not exist without the work that was done by the early geodetic surveyors, not just in the United States, but throughout the world. A model of the Earth was built, a mathematical model that is the basis for all the computations of GPS that came out of work by the National Geodetic Survey and other agencies and international agencies affiliated with it. The first work that I was sent to was an astronomic latitude and longitude party; astro for short as we called the astro parties. This involved actually looking at the stars and using the stars to determine a position of a point on the surface of the Earth. This point was an astronomic position. This was compared to a position that was determined geodetically. Geodetically, this was generally determined when I started into this through a process called triangulation. The baseline would be measured by tape, or in the old days, very precisely by machined bars of very accurate length that were manufactured so they'd have minimal expansion with heat or cold. Regardless, there would be a baseline that would be a couple of miles long, sometimes up to ten, eleven miles long. That would be a very precisely measured distance. From that, they would build triangles out and then build what was called a triangulation network. If it went east-west or north-south, it was called an arc of triangulation. These things have basically crisscrossed the United States to make these basically hundreds of thousands of points in the ground that help us control our mapping and engineering projects. Ultimately, controlled GPS or at least were the basis for GPS. Also, on the dark side or good side of this, it's so we can shoot missiles better at the other guys if need be. This was part of the impetus for the very precise surveying that was ultimately done in the '60s through the 1970s, what was called the Transcontinental

Traverse [TCT]. Anyway, I was with an astro party; it started in Alabama. We were supposed to work north in summer and south in the winter. That was the general plan. But the way it worked out for me initially was I was south in the summer and north in the winter. [laughter] Working in the sticks in Alabama in the summer, I discovered there were more kinds of bugs than you can imagine. Unfortunately, the work we did – I ended up doing a lot of the recording during the time I was with this first group. You have to have a little light going, so you can see what you were doing. The guy outside with what's called a Wild T-4 Theodolite is out in the dark. So then the bugs aren't quite so fierce running around him. Anyway, these things would be flying around me, flying around all the instruments I was working with. They'd be landing on it. There's a time-recording device, a drum that would go around and around and have tick marks. There would be bugs that would light on that, and they would go around and around and around. You'd be watching that the whole time, or working with it, besides smacking mosquitos or whatever else. Anyway, we were in Alabama in the summer. Then we went up to Spencer, Iowa, and Clear Lake, Iowa, and did work in Iowa. I don't know if you came from a farm or have ever been around a farm. One of the things that was interesting to me – one of the farms we were at, mostly grown cattle. So I went in a barnyard on a farm that we were working on. The people let us on their property. It had a calf, and it had a tin can lid that was put over its mouth. They had it secured, so it was hanging over its mouth. The reason for it – I asked the farmer. I said, "Why do you do that?" He said, "To wean him off his mother," because he kept trying to get to the mother. [laughter] I just remember the calf with the tin can – well, pretty big calf, actually, that kept trying to get the mama. We worked close to Albert Lea, Minnesota. I forget the name of the town. Probably the world's biggest turkey farms up there. We went by a big turkey farm; they had a big turkey statue outside close to the farm. Just traveling around, because my name's Albert, there's a very famous bull in Iowa, Albert the Bull. There's an Albert the Bull statue. I went to see that. I forget exactly where that's at. I've found it a few times on the map since. Actually, it's not too impressive. It's just a great big plaster of Paris Hereford bull. So I was transferred from that party. Where did I go from there? I went from Iowa, and I was transferred to the tri-cities area of Washington, which is Pasco, Kennewick and Richland. It's pretty. That's along the Columbia River. Pasco is the town we were actually staying in. We only had one station we had to observe; it was out by a place called Moses Lake. We went out there; it was fourteen below zero at the time. All of our instruments were froze up and tried it a couple of times. We could not get anything done. After a couple of weeks of that and headquarters telling us to give it the old college try, well, we gave it the old college try as much as we could. They finally sent us down to Escondido, California, out of that area. Escondido was quite nice. Very nice. From Escondido, I think that's when I went to Eagle Pass, Texas, out of Escondido. That was a little culture shock. Eagle Pass, at that time – I don't know what it's like now, but it was just sort of an outpost, if you will. That's about the best I could say for it. It wasn't much of a town. What did I see on the way? I saw Langtry, Texas, home of Judge Roy Bean, "The Law West of the Pecos," if you ever heard of that. [laughter] I don't know if you've ever heard of that. Okay, well, look up Judge Roy Bean sometime. He was one of the hanging judges. What did I learn about in Texas? That particular part of Texas – lots of cactus. What else did I learn? Actually, it was still wintertime. So we did see a few Blue Northers while we were there.

That's a Texas word for these big fronts that come through, and generally, a lot of lightning and scary stuff going on with it. One station – I forget where we were at – found a bunch of fossil oysters. That was fun. I don't know if I still have them in a box somewhere or not. Okay, we finish up. Oh, the other thing that I got out of Eagle Pass, Texas, was some of the best guacamole I ever had was at Andy's Cactus Cafe. I kept track of these sorts of things. Okay, so we leave Eagle Pass, Texas, and go to Newton, Kansas – fairly unmemorable, other than that's the first place that I was ever introduced to a dry county. The motel we were at was in a dry county. The way that people in dry counties get away from this is they form private clubs. So the motel had a basement that it had a bar in, and this was a private club. So for a dollar, you can join the club, and then they give you a free drink. One night, we were there in the basement. Now, this is sort of cruel of me; I was half-loaded. I didn't really like Newton. I played on the jukebox "Dead Skunk in the Middle of the Road" ten times in a row. [laughter] Nobody knew it was me that did it. That was good. They finally shut the jukebox off. [laughter] Anyway, Newton didn't impress me. I'm sure that there will be Newton people who will take exception to that if they go through this part of the transcript. From Newton, Kansas, I believe that the direction I went was to – I was then transferred off of astro to a Transcontinental Traverse crew. I think the first town we went to – I think it may have been the first town – was Broken Bow, Nebraska. Broken Bow – small town in the middle of nowhere. This was a different type of crew. I think it was Broken Bow we went to first. I may have stayed with that crew for about four months. I don't remember the exact order of things. I'm trying to remember where we worked out of – a lot of work in what's called the Nebraska Sandhills, I believe. Not too much memorable in Broken Bow. I do remember going to some of the stations and watching huge herds of cattle that would go through, and young bulls testing each other out and doing a lot of head-butting together and getting in bullfights, I guess you could say. Bull to bull that is, not with a matador out there. That was pretty interesting. I'll just say, for the sake of it, that we finished that project up fairly quickly where we were at. What Transcontinental Traverse did is, as opposed to triangulation where you were measuring angles between points, they were using a very high-powered laser geodimeter that could measure very accurate distances – say if you wanted to measure the distance of something even fifty miles away, you would point this laser at a group of very specially constructed mirrors that would then reflect the light right back to you. By comparing the phase of the outgoing light to the ingoing light, you knew where you're at within a couple of centimeters within a two-thousand-meter range. You also had to know how far you were from the other station [how many two-thousand meter increments between stations]. I believe this is the way it worked. I'm recollecting stuff from quite a ways back. Regardless, it was very precise. You could measure fifty-mile distances to a few centimeters on the surface of the Earth. So it's much more accurate than the classical triangulation and geodetic work. The accuracy requirements for this work were one part in a million. What that meant – I'm probably wrong in my numbers here – one arc from Northern Washington down to Parker, Arizona, which is close to Southern California, if they measured that, their total error was about one meter in that whole distance. So it's very accurate work, very precise. From Broken Bow, we went to Lander, Wyoming. It's a beautiful town in Western Wyoming. The Wind River mountains are just to the west of it. All the Bighorn mountains up to the north are not quite as spectacular as the Wind

River mountains. A Sioux Indian Reservation was to the north of us. I forget what the name of the particular reservation was [Editor's note: Wind River Reservation]. I don't remember the name of the town to the north [Editor's note: Riverton]. Anyway, we worked lines going from the south – Wamsutter, which is down in southern Wyoming. It's a railroad town – over the Continental Divide, which was close to Atlantic City. That was a big stop on the Oregon Trail back in the old days. We saw some remains of some of the wagon trails going there. From there, north through Wyoming up to Billings, Wyoming and north to what's called the Missouri Breaks up the Missouri River – that was the line that we were running then – stations about every twenty, thirty miles or so. In the first couple of weeks, I was sent with another crew down to Wamsutter, a small railroad town. We actually had a room in the back of a bar, which is where we stayed. It wasn't like there were big motels or anything. There's a big gas station called Little America Wyoming, but we weren't anywhere near that. So worked north from Wamsutter, up through Lander. After we finished in the Lander area, we stayed in Billings, Montana. Work-wise, the only memorable thing that occurred there was we were setting a mark – in other words, setting one of these disks in the ground that was going to be surveyed in. I had about an eighty-pound bag of cement on my back, climbing up a small hill, and came eyeball to eyeball about five feet away with a rattlesnake. [laughter] I didn't think much of that. I didn't move. I called for a guy to get a shovel over there to take care of the snake. The snake took off before – he didn't bite me, so it was a happy ending for all. That was northeast of Billing. The other thing I saw that was – I know that this diverges from work, but it is part of the work experience. The biggest bunch of cattle gates that I had to go through, although other guys talked about a lot more, was seven. As you go through people's property in cattle country like this, the different fence lines, they all seem to have inventive ways to tie up their gates and generally involve some way of wrapping a stick and barbed wire around the gate and a post on the cattle gate. But we were on this dirt road going in there and saw a porcupine. We went to work and came back about four hours later, so four or five hours – had passed through a bunch of these fences. When we came back, this porcupine had been run over. But there was another porcupine that was there next to it. It was like the other porcupine was trying to get that one to wake up and get going. It was actually sad to see. It was like that porcupine had feelings for its mate, friend, whatever the case may be. Sometimes you philosophize a little bit. What do animals know? What do they feel? That one porcupine, for all intents and purposes, was either trying to make its partner well or was mourning it, whatever the situation would have been. One other thing we did there was, going into one of these stations – it was like the old days; there were two cowboys that were running about fifty cows, and they were coming the other way on the road we were on. Well, you probably understand that in that country, probably government employees aren't looked upon too well. Regardless, we're going in on a truck and these two cowboys, they had to split their herd around us. We stopped the truck. They had to split their herd, and they were very angry with us. We got some dirty looks. That's the first time I'd been in a cattle herd. It was just like out of the Old West, driving their cows.

MG: Can you talk about the mood of the country during this time? A lot of this work was during the Vietnam War era.

AT: The mood of the country during this time? I'm trying to remember if it was post-Vietnam War. Probably, in geodesy, it was '71-73. I think we're still in the Vietnam War.

MG: Yes.

AT: We were all cognizant of the news. People were people everywhere. We were government surveyors. Actually, in Broken Bow, when we came into Broken Bow, they'd been there the year before. I remember all the teenage girls and young ones – I'm not sure they were teenaged – but we'll go for the eighteen-and-uppers. I remember seeing one of them – actually, when they saw the orange trucks coming, "The surveyors are back!" [laughter] That was the biggest thing that had happened to them. It's pretty hard to say what the total mood of the country was. Most of the work we did, very little of it was around large urban areas or most of the work that I was involved with. We'd meet farmers here. One place in – I think I went into Mason City, Iowa, the big town close to where we were at. I stopped in for a beer somewhere at a bar, and I was talking to a young guy next to me. I asked him, "What do you do?" He just went off on me – "All you people from the outside think we're just a bunch of dumb farmers." I just moved. "I'm not going to deal with this. I'm sorry. No, that wasn't my point." I tried to strike up a little conversation with him. I probably didn't interact as much with the local populace as I could have. The survey crews were pretty tightknit. We were our own little community. In fact, the bigger crews, like the Transcontinental Traverse, even the astro crew – the older fellow that was with us, he had his wife with him, and he traveled in a bus with his little pug dog and lived out of the bus. The work was pretty – I won't say it was intense, but it didn't invite a lot of interaction with the local populace. We'd look at the local newspapers; all of them were closely the same. The big news was the town council doings, their crime page, a little bit about Miss Molly's cookie sale. [laughter] That's the only name I could think of just then. I'm sorry.

MG: I understand. [laughter]

AT: Yes. There wasn't a lot of difference between the towns. It didn't really matter whether you were in California, particularly when you're away from the urban areas. When we were in Eagle Pass, there was a town in Mexico on the south side of the Rio Grande. It was right there on the Rio Grande River. When we went over to Piedras Negras, the town in Mexico, they would speak English to us at the restaurants and bars. Even going to a bank – that was before you could have your checks deposited or whatever automatically. We'd get our green check every two weeks or so, and go to the bank, try to get something cashed, and when I went to one bank, they wouldn't speak English to me. [laughter] Just different. We never stayed at the best motels, to say the least. I always had a roommate with me all the time I was with astro. His name was Richard Cohen. He became a longtime National Geodetic Survey employee. We would try to get the cheapest place we could so that we could save what we could from the standpoint of per diem and salary. Some of the places we stayed at were a little rough, to say the least. I'll tell you two of them. This is getting out of chronological order, but it

doesn't matter. One motel we were at in North Platte, Nebraska, it was the Bar-X Motel. I'd been in the motel for three days, and I moved a chair, and I found a half-eaten hot dog. [laughter] Another place we were at, this was Columbus, Nebraska – staying at the motel. We never went to the show, but we were staying in a room next to a stripper, and part of her show was a fairly large boa constrictor. She'd come out of her motel room, during the day – we worked at night – with the boa constrictor wrapped around her shoulders. [laughter] That's just a sampler. I guess I'll give one more while I'm at it. White's Motel Annex, which was in Mojave, California – actually, they'd built a newer motel, the White Motel – the name of the people. We got there, and we asked them – we saw the annex in the back and said, "Do you have any rooms in the annex?" We figured it would be cheaper. They said, "Yeah, you can get a room for \$32.50 a week." It was an old motel. It was really rundown on the inside, but the bathroom worked. Actually, that was disturbing to me because we had thirty-five dollars a week we could use for office space that they let us use at the time. So actually, I didn't even have to use the full thirty-five dollars for the office space. But that place, we'd come in from work at night, and you've probably seen big – what kind of bugs are they? They're like big roaches. I forget what you call them – palmetto bugs. This place was inundated with palmetto bugs. We'd walk in at night, flip on the light real fast, and then step on as many as we could. [laughter] We were young; it didn't matter. These sorts of things didn't bother us so much. That's some of the stuff. It was, like I say, life in the field.

MG: Was there a point in your career where these conditions changed and your lodging improved?

AT: We could have stayed in better places. We could have. But this was 1971, '72. I was putting about a thousand bucks a month in the bank. That was big money in those days. We were living on the edge. We didn't have permanent girlfriends, no plans to get married at the time. We didn't have a lot of stuff to spend our money on, particularly because we were generally in remote areas and worked at night. Although, some places – they got you up to Billings, Montana. One place, Winnett, Montana, the county seat of Petroleum County – we went there. It was like an old-time town, like a movie set [of] the Old West. That town kept its bars open all night for the surveyors when they come back in. So at three o'clock in the morning, you'd see this line of orange trucks down the Main Street of Winnett, Montana. [laughter] That's the way it was in the old days. Surveyors aren't known for being teetotalers.

MG: Where did this assignment end?

AT: Where was I when that assignment ended? We went from Billings, Montana – well, I'll give a little bit more of the routine. We went from Billings, then I ended going to – actually, we went back to Billings. That was just temporary in Winnett. Then I went to Sheboygan Falls, Wisconsin, to get a little training on a level crew. That basically meant going down a railroad track about three miles one way and three miles back, and see if everything – the elevations came out within a certain tolerance. If it came out, it was good, you were done with that section, and then you'd start up at that point the next day. I didn't really care for that. I thought that was fairly boring work. I stayed with that crew

for only three, four weeks, and then ended up being transferred back to an astro crew as chief of party. Actually, the second time was chief of party of the same crew, which was in Renton, Washington. So I went to Renton, did some work out of there. Then from there, we went down the Central Valley of California – Chico, some other little town in the Central Valley, and then over to a town called Vacaville. From Vacaville, that's when we went to Tracy, California. At Tracy, that's where I found the best chili rellenos. [laughter] I remember that one for the chili rellenos. From Tracy, down to Mojave, California, and then, I think to Apple Valley, California. These were out in the Mojave Desert. From there to Parker, Arizona. Parker, Arizona, to Columbus, Nebraska. That's where we had the stripper with the boa constrictor. Then, from there to North Platte. My last town with geodesy was Ogallala, Nebraska. This was June of 1973. I did a lot of work in the Sandhills there also. One of those assignments out of Columbus, myself and Richard Cohen, the fellow who was my roommate most of the time – we went to a station outside of Norfolk, Nebraska, thirteen miles out of town. That was about a hundred miles west of where we were staying; I guess the beginning of the Nebraska Sandhills area. The truck broke down at the station. The tie rod broke, and we couldn't steer the truck. This was like one o'clock in the morning. We had to walk into town, thirteen miles, going past farms where dogs are barking. Nobody came out and shot at us. I was glad of that. Anyway, we got into Norfolk, Nebraska. The only place that was open was the sheriff's station. We explained our situation to the sheriff. He let us call back to Columbus – we had two people back there – to have them come pick us up. He let us sleep in the jail that night. There was nobody in the jail. That was the only night I ever spent in jail was in Norfolk, Nebraska. After that, we finished up in Columbus and then went on and left. The party went from there to North Platte, and then on to Ogallala – actually, I've mentioned the fellow Vern Burns. Vern was the guy who lived out of the bus. That particular time in Norfolk, he wasn't with us, but generally, there were three of us that would go to a station together. One guy would be observing, one guy would be recording, and the other guy would just have free time during one guy's observation period. Then we'd rotate through various functions. Vern passed away a number of years back, but he'd been with the Geodetic Survey for probably thirty years, at least, at that time, and had basically seen it all, so to speak, at least of that sort of work. Respect for accuracy and precision, I think I had that drilled – what do you say? What does a teacher do? He imbued me with the feeling of what the Coast and Geodetic Survey was really all about, which was respect for accuracy, respect for precision, and then if you screw it up, you don't try to hide it; you go back and do it again. Make sure you get it right. I think more than anybody he's the fellow that imbued me with those sorts of concepts. He didn't do it by lecturing or anything else – I think just examples. I mentioned one of these things, a little story. I think he helped some of my management techniques. I was Type A, to say the least, when it came to doing survey work or getting stuff done. We were in California. We were on a station on Sutter Buttes, which is to the east of Sacramento. It was sort of a cloudy night. We were getting some of the work done. We had to be able to see the stars, so if it clouds in, you can lose a night's work before you've gone through the full regimen that you had been doing. He was observing, and I was the free guy at the time. I wasn't doing the recording; Richard was recording. So I was pacing around like a crazy man, probably within twenty feet of him or so, and enough that he was aware that I was doing that. He just said, "Skip, the hurrieder I go,

the behinder I get.” [laughter] Probably the best piece of advice I ever got. I mean, he’s talking about himself, but he was telling me to cool it a bit. We’ll get done what we can; we’ll do the best we can, and nothing you do by running around is going to make it any quicker or better. I always kept that one with me, too. So I’ve tried to stay calm when all others about me have been losing their heads.

MG: That’s good advice.

AT: Yes, tried; not always succeeded.

MG: Did you enjoy this work and all the travel?

AT: Oh, yes, I loved it. I would have stuck with that for quite a bit longer if anybody would have asked me to. I did put in later – I never did get it. We get to at least write what we’d like for assignments. So I had requested to be party chief of the San Andreas fault monitoring crew in California, but ended up going back to boats. The first time I did that, they sent me to a hydrographic surveying party, as opposed to a geodetic party at that point. Moving on, Ogallala – just the last story here. At my going away party, perhaps I did get a little bit loud and boisterous. We’re at a bar in Ogallala. Vern was letting us young folk have our way. We’re sitting in a booth, but he’s sitting at the bar. I guess I was sufficiently loud that I was annoying some of the other customers and probably the bartender as well. The bartender said he was going to kick me out. Vern told him – and Vern was a big man. He was about 6’4”. Even though he was in his fifties, he was still a very formidable specimen, to say the least. Vern said, “If you want to do that, you’ll have to go through me.” [laughter] So loyalty to friends, loyalty to the people you’re working with. Like I say, he taught me a lot about the old Survey and how it operated. Vern was a good man. Where do I go next?

MG: I just want to check in about our time before we talk about the *Whiting*, which was your next assignment.

AT: Yes, yes. If you want to.

MG: I am good. I just want to make sure you are, too.

AT: Do other guys get as involved with their personal stories?

MG: You’re making my job very interesting and easy.

AT: I could give you the dry stuff, but very good.

MG: The next assignment was on the NOAA Ship *Whiting*. Where did you report to for that?

AT: The NOAA Ship *Whiting* was based out of Norfolk, Virginia. When I went to it, it was – let me see. It was, at that point, in-porting at Charleston, South Carolina. I’m not

sure if I took any leave after leaving geodesy or not. Regardless, I ended up going to Charleston, South Carolina, where I met the ship. I was assigned as operations officer on that ship. Commander Jeff Carlen was commanding officer at the time. Where was the ship working? It had just finished a job off of Hilton Head Island. That's a big resort area. It had just finished that, which was a launch hydrography job. When I got on, it started a ship hydrography job, which was further offshore. So actually, I was pretty amenable to that. That was something I was very familiar with, even though I'd done some launch hydrography, it was more so than the launch hydrography. I think the project name was Southern Coastal Plains Expedition. Basically, we were out there, running back and forth, north and south, just off the continental shelf. As we got closer inshore, we did do boat – I'm trying to remember if we did any boat work that year. Yes, I think we did some launch work that year. I don't remember exactly where. Carlen – I'm trying to remember if I was with him for a year and a half or just a couple of months. Regardless, the next commanding officer was Robert Trauschke, T-R-A-U-S-C-H-K-E. He was the next C.O. With Carlen the next year, we still went back to Georgia, and we did a project in what was called Georgia's Golden Isles. These are the islands that are south of Savannah – Wassaw Island, Ossabaw, St. Catherine's, and then Sapelo Island. This is actually a fairly wild part – a lot more wild than you would think. These weren't the resort islands of the Southeast Coast. Not Myrtle Beach. Some of them are private game preserves. I think Philip Morris's family owned one of the islands. I couldn't tell you who owns what there. Sapelo Island now, I think it's part of a National Wildlife Refuge. In fact, there's a NOAA function that's there as well - the Sapelo Island National Estuarine Research Reserve. Regardless, these islands were sort of interesting. We were surveying the inlets between the islands. The sand shifts with various storms, so from the time that the Coast Survey had surveyed, about forty years before, until the time we were surveying, most of these inlets had actually shifted about a mile. The Coast Guard had kept up with this, and kept them pretty well buoyed, but the charts were completely out of date. So we spent time – what we did that year, we were surveying each of those sound entrances. I forget how far up we ended up going. We didn't do the backside of the islands. That was pretty interesting work, too, because I think we were the first ship to use an electronic navigation system, which was meant for short-range, a super-high frequency system called Del Norte. We had to design the survey – this was actually my part of it, and I loved doing this – or a big part of what I was doing. I had to design these so that the geometry of intersecting angles, signals from these, wouldn't be less than thirty degrees or more than a hundred and fifty. Within that, if you got what's called a fix, two intersecting ranges, then the geometry is good enough that it would be considered a valid fixed point for hydrographic survey purposes. So anyway, we had to put these up on these various islands. To operate, they had to have DieHard batteries. The DieHard batteries, we found out that the local crabbers were stealing. [laughter] They'd see these sitting there and thought, "This is great." So they ended up taking them. So we ended up with a – we started getting ammunition cases from the, I guess, Army or somebody, and we would put the DieHard batteries in the ammunition case, run the cable out of it, and then dig a hole about six feet deep in the sand to bury the batteries in the sand. This, at least, made it very difficult for somebody to go and steal the batteries. We didn't get them stolen anymore. These islands were, like I say, quite wild. Sometimes we'd have to use machetes, chopping our way through the underbrush. We'd see snakes.

I never did see an alligator. The part I liked the least – some of these islands, they'd have marsh for about a quarter-mile before you could – if you landed on the beach, then you'd have to walk to the dune line. If you're walking through this marsh, it was about knee-deep. I always worried that the random cottonmouth would find us. Never did see one, but we did see rattlesnakes. I may have seen – I know North Florida has coral snakes. We did see a couple of small snakes. If you're interested, snakes do climb trees, and you'll see them in the trees. A guy that I worked with quite a bit, a crewman that I really liked, his name was Shorty Fuentes. He was retired Air Force. I took him with me a lot whenever I went ashore to establish one of these stations because he was, what I called, a good rigger. If you had to build a tower or if you had to even climb a tree to get something up in it, he was a guy that could do all this. He was very good mechanically, very good carpenter work, so I brought him with me a lot. But he was a little bit ahead of me, going through some fairly dense trees and brush, and he saw a snake in a tree, and just went nuts with a machete. He was swinging it everywhere. [laughter] I think the snake escaped, and so did Shorty. That was pretty funny. I'm trying to think if much occurred with that. There wasn't a whole bunch that occurred during – it was just standard work – put the boats over in the morning and pick them up at night, and then the boat crews would be running all day. I'm not sure if those boats were – I think those boats may have been air-conditioned. Something I forgot to mention – this was close to the beginning of automation, from the standpoint of hydrographic surveying. So we had a system – actually, it lasted about twenty years. It was called Hydroplot-Hydrolog. So I do believe that our boats were, in fact, air-conditioned because we had to keep computers going. They were old PDP-8 computers. This was very primitive by today's standards. All the work was done off of paper tape. All of our data was collected on punch paper tape and then rerun. We had a roll-bed plotter that we had on board, so we could see what we were doing, as far as where the boat was at and going. The Del Norte navigation system and predicted tides were tied into a recording device, which turned out a paper sheet. Every twenty seconds or so, it would print out what all these readings were from the various systems. Even though it was automated and collected all this data automatically, we still had to go back at night and reprocess all of this data because occasionally, there were errors. Occasionally, the punch paper tape didn't work right that was collecting the data. So some guy would have to sit punching all of this data out onto what we called corrector tapes. We had to insert additional highs and lows – because this just picked up at certain times, every twenty seconds, ten seconds, whatever we told it to, we had to scan the fathogram still. We had to make sure that the fathogram was registered properly. If the paper was off, the stylus was off, and that meant that the sounding that you got could be off by a foot or something like this. You had to correct all the soundings, or at least correct what soundings were off. What else did you have to correct? I don't know. There were all kinds of stuff. It was a learning experience for everybody, as well. We got that all going. We had a big flatbed plotter that we plotted the soundings on at night. We made our smooth sheet, the sheet that we thought everything was right on. This was all done on mylar, even the work during the day. It was easier than the old hand survey work that I mentioned in Samoa. That was the sort of survey that had been done for a hundred and fifty years before I did that in Samoa. Actually, that was one of the last – there were surveys that were done after that with manual methods, but it was one of the last manual surveys. So yes, my career went

through from close to old classical ways – other than we weren't throwing the lead line. We had an electronic-sounding instrument, but everything else was manual – up to multibeam and GPS surveying. So basically, I saw and used a range of technologies and methodologies for collecting survey data.

MG: The other big change around this time was that the NOAA Corps began accepting women.

AT: Well, it's a funny story, depending on your view of the world. We did not get any women onboard the *Whiting* while I was attached to it. I spent two and a half years on the *Whiting*. Just as I was being detached, a few weeks before, the first woman was assigned to the *Whiting*. The *Peirce*, P-E-I-R-C-E, pronounced "purse," was the first NOAA ship to get a woman on it, which was the same time that I was on the *Whiting*, but we didn't get any women at that time. By the time that the *Whiting* had a woman assigned, I had then flected-up to executive officer. I was no longer operations officer. This was one step below the captain on the ship. When I was executive officer, we had a young officer on board who was less than competent. The *Mount Mitchell* also had an officer that they considered less than competent. So we ended up ultimately swapping these officers to give the guys a shot and see if, in a differing environment, they would be able to function a little better. The officer that was on our ship – and this was unbelievable to me – this would have been maybe December of '75 or January of '76, I believe. During some cold weather – and this is disgusting to me – and he was chubby, as was the chief survey tech at the time. He borrowed the chief survey tech's long johns. Okay? So this guy is transferred to this other ship, and so on comes two new officers, one of them being a woman officer and one a male officer. I forget which room was which, but when they opened up one of the drawers, they found these long johns. They said, "There's still clothes in here. What do we do?" So this was this other officer's – this one that I transferred to the other ship. I was furious that there was still anything left there. So I took this stuff – to me, it just looked like dirty laundry, and I threw it away. About a week later, the chief survey tech says, "Commander, why did-?" I don't know if I was a commander or lieutenant commander then; I was one or the other. "Why did you throw away my long johns?" I said, "Your long johns? What are you talking about?" "Yeah, I loaned them to ensign so-and-so, and you threw them away." I just said, "Get out of here. I'm not even going to listen to this." [laughter] I was just dumbfounded that somebody would loan somebody something like that, and the other guy would wear it, and the other guy would want it back. I couldn't even believe it. So that was the great long johns episode.

MG: So, for a brief time while you were on the *Whiting*, there was one woman onboard?

AT: No, there was never a woman onboard on the *Whiting* while we were working. Well, I will say that during in-port, she was assigned to the *Whiting*, but I was just in the process of being detached – I maybe had a month longer on the ship, and the ship was in-port, and we were not working together at that time.

MG: Was the *Whiting* a smaller ship?

AT: Well, it was what we call a Class III. I believe it was a hundred and sixty-five feet in length. It had two hydrographic survey launches attached to it. It had a crew of about forty to forty-five. A good part of that being deck department for operating the survey boats when we did launch hydrography. Once again, the same sort of complement – even with forty-five men, you had the officers, engineering department - the guys that make the boat go, the survey techs, stewards, yeoman department. I think we just had one yeoman on board at that time. Maybe we had two at different times. I guess that was all the various departments we had. Well, deck department, as well.

MG: Am I missing anything from this time on the *Whiting*?

AT: Well, there were other places that the vessel went – Virgin Islands. We had a project up in the New York Bight area. I think it was on the *Whiting* that we were doing ship hydrography in and out of the New York shipping lanes, which keeps you on your toes. We're going crisscross perpendicular to what everybody else is doing. That kept us pretty much awake. I'm trying to think if there was any other – oh, did a project at Mona Pass. That's between Puerto Rico and the Dominican Republic. Then Pillsbury Sound was in the Northern Virgin Islands. That was a memorable assignment. What else? A couple of things I did while on the *Whiting* – the first winter I was in on the *Whiting*, after we finished all of our processing, I volunteered to go to airport surveys, which worked out of Atlantic Marine Center. That was for training – just a little bit more survey work. I started that in Jackson, Mississippi. I think we went to Tupelo. These are small airports – Clarksburg, Tennessee. Paducah, Kentucky. The last airport we surveyed was Carbondale, Illinois, home of the Salukis – if you know what Salukis are. [laughter] That's Southern Illinois University. That's how I found out that's the home of the Salukis. So about six weeks on that. When I came back from that, this would have been the winter of 1973-1974, like January. I went to get my per diem voucher filled out. I make no bones about it. Anytime I could get per diem, I took it. The airport survey administrative assistant asked me how I pronounce my name. I said, "Theberge" very loudly, trying to impress, I guess. Anyway, that ended up being my wife. It was love at first sight. She was getting me my money. [laughter] That's horrible. But anyway, that's how we met. She was the administrative secretary for airport surveys, and I met her at that point in time and started asking her out. We've had three kids and five grandchildren since.

MG: Tell me a little more about your wife and her background?

AT: Her name is Kathryn. She was basically an Air Force brat. I forget how she ended up in Norfolk, Virginia, but regardless, she ended up in Norfolk and ended up with a job at Atlantic Marine Center. She was just living there in Norfolk, West 50th Street; that's the place she lived at. It was a place close to a little canal. I bet it gets flooded now with the little bit of sea-level rise that's occurred since then. We were living, like I said, next to a canal that, at high water, was pretty close to the top then. She had been a classic Air Force brat. Her father was a SAC Colonel, Strategic Air Command Colonel. He'd been in World War II, a bombardier and navigator, well-decorated. He'd been at D-Day and

Battle of the Bulge. He flew on A-20s. I think A-20s were the type of aircraft. They were twin-engine bomber fighters. As the navigator, he sat up front in one of these Plexiglas deals and used the bombsight. He was right there, seeing the whole show when he was flying by. He was well-decorated from that. After the war, he got married in the Denver area. He went to school in Denver. He didn't have a college degree yet, and used the G.I. Bill. He met his wife there, my mother-in-law. They're both deceased at this time. Kathy was the second child. She had a sister older than her. She was born outside of Sacramento, California. I guess that's what it says on her birth certificate – Travis Air Force Base, I believe. He was there. She lived in Texas, various places in Texas. They'd been at Offutt Air Force Base; that's the big SAC base up in Nebraska, outside of Omaha. Then at the Pentagon. They lived in Alexandria then. They lived at – it was called High Wycombe – I don't know if it's still an existing airbase or not – in England. This was through the Cold War. He was in on some of the initial deployments of hydrogen bombs from aircraft. He was part of the Cold War. As I understand it, when attached to the Pentagon, he was in charge of picking targets in Russia. [laughter] It was a funny thing. Russia, he said, had dithered most of their atlases, meaning they'd shifted the location of points, hoping that the U.S. people would be fooled, or whoever was going to shoot at them. That's why you had to figure that out. So he pretty well understands – well, as a navigator, we'd sometimes talk about various stuff. He used one of the first electronic navigation systems that was used for bombing systems during the Second World War. That was called Gee, G-E-E. Gee was interesting. He provided me with some books and some of the maps that he actually used for navigating with them. They were some of the earliest electronic navigation maps. Gee was used by the Coast Survey and renamed Shoran. They obtained versions of that equipment. They used it for two purposes. The first, they converted it to hydrographic survey use. So it was the first electronic navigation system that the Coast Survey used. Well, I will say they used some radar before that, some early primitive radar in various surveys, but that's more a manual process than the Gee. Anyway, Gee, they used it in Alaska – first started testing it in 1944, ran first surveys in 1945. That was interesting that connection between him using that and the Coast Survey using that as their first navigation system. But we understood each other's language, which was quite good. What else? Gee was used for something that's pretty interesting in the history of geodesy and electronics. A Coast Survey officer, who was attached to the Air Force during the Second World War, started using it for aerial mapping purposes, and for determining distances between points. He was testing them using already surveyed points of the Coast and Geodetic Survey that they compute the exact distance between. This gets a little complicated, but they used a system called baseline crossing, where if you cross the line that extends between two points on the surface of the Earth that have two electronic navigation systems, that the minimal sum of the readings of the two stations should occur when you exactly cross that line. So he was using this for this purpose, to see if he could use it to measure distances. Now, on his test, he kept coming up with errors. He kept coming up a couple of meters off, and he couldn't understand why this was happening. He went through everything. He checked all the gear. He checked all his computations. What he decided was that what had to be wrong was the constant for velocity of light that was being used for as the propagation of the electromagnetic waves [that] were emanating from the navigation system. So he came up – I always get confused – I think it's 299,900-and something [Editor's note:

Aslakson's value = 299,792.4 km/sec; previous value = 299,776 km/sec; accepted today = 299,792.458 km/sec]. I forget what the exact velocity of light is. But he came up within a – I forget if it's a kilometer you have to come up with or a couple of meters, but regardless, he came up with a value that is within a very small – like, .02% of what is the accepted value today [Editor's note: 58 meters per second difference to be exact]. Then they started using his value for most electronic distance measuring, and most other systems that required knowing the velocity of light for measuring distances, be it radar or whatever. His name was Carl Aslakson. Actually, his family provided me with his family autobiography. I put that online on the NOAA history website. So he was one of the great unknown people of the old Coast and Geodetic Survey and an outstanding geodesist, but also understood the electronics and then was able to make an advancement due to the understanding of using these instruments. So that was pretty cool. So all of that with the Gee and something my father-in-law used. He said, in poor weather, when they couldn't see, they'd even fly home on a Gee position line. They'd be able to find their way back to their airbase. That was good. They retired to Northwest Arkansas, Bull Shoals Lake, which is a big manmade lake. Bull Shoals dam is up there. There's a series of lakes. You've heard of Silver Dollar City in Southwest Missouri. That's a big country music-themed amusement park. That's close to one of these big lakes on the White River. Bull Shoals Lake is on the White River, and that's the area they retired in.

MG: Did you meet Kathryn in between assignments? Or were you still assigned to the *Whiting*?

AT: Were we married then? This is actually interesting. We had a legal baby. It was ten months after we married. [laughter] That baby was due in September. I was on the *Whiting*. We were working on the Georgia or South Carolina coast then. The *Peirce* was also. I think this was another extension of this southern coastal plains thing. The *Peirce* was working in the same area, and every two weeks, we were rotating – one week, one ship would go up to Norfolk for an in-port, then come back to work for two weeks. Then the next week, the other ship go up to Norfolk. So I received a message saying Kathryn was due towards the end of August. The way this worked – it was a funny thing. The operations officer on the other ship – or, one of the junior officers. He wasn't the operations officer, at the time, I don't believe. He also had a wife that was pregnant, who was due close to the same time. I was transferred from sea – when I received word of this, the *Peirce* was going up to Norfolk. So I was transferred at sea off the South Carolina coast to the *Peirce*. They took me on board and took me up to Norfolk so I could be with my wife during that period. I took some leave. The baby took its time, and I was starting to get pretty antsy. I was afraid that I was going to have to leave and go back before the baby came. She finally came four days before I was due to go back, September 10, 1975. I get back to the ship, and the other guy goes up. But in the meantime, he missed – his wife had their baby early, so he missed the birth, which was sort of sad. We were planning it to try to make it the other way. Regardless, NOAA cared, shall we say? We effected a rendezvous and transfer at sea, which I'm eternally grateful for. It was a nice thing. We had the baby in Portsmouth Naval Hospital. That was our Atlantic baby. We had an Atlantic baby, a Pacific baby, and a Rocky Mountain baby. [laughter] One other thing from that period. During the winter of 1974-1975 I

volunteered to be the Atlantic Marine Center hydrographic training officer. One of the students was Ensign Evelyn Fields who later became Director of NOAA Corps. Admiral Holmes wanted me to continue as training officer but NOAA Corps kept me on the ship so I had another year of sea duty after my training officer stint.

MG: Tell me about your first child. Did you have a boy or girl?

AT: It was a girl. The oldest child was a girl, and then we had two boys.

MG: Were you on the *Whiting* for one more year after your daughter was born?

AT: Actually, when we came back – I guess it was November. That was the end of '75. I was just about ready to be – I was going to be detached relatively soon after that. Seven months before, I'd been fleeted up to XO [Editor's note: executive officer], which was good. As we said, I punched my XO ticket at that time. Sometime later, I skipped go and ended up going straight to CO, Commanding Officer.

MG: Is there anything I'm missing from your time on the *Whiting*?

AT: Not that I can really think of. It was just standard work. The old boatswain I liked, old Pappy Haines. He's the one I mentioned – a rough day; we were coming home from somewhere. We were headed up to Norfolk, by coming home. It was a rough day, and the ship was bouncing around pretty good. I wasn't on the bridge wing. I was standing on the lower deck. I was in a place where I was somewhat protected from the spray and standing there, peeking my head out, looking at the booms and crashes. He just came up to me. Although he'd been going to sea his whole life, he was still subject to seasickness. This wasn't a good day for him. I was standing there, looking. He came up to me – this was when we still used "she" for ships – and said "She can take more than you can, son." [laughter] I've always felt there's a certain beauty to a somewhat stormy sea. Going to sea, it's the old saying – this wasn't a particularly scary day, no problems so to speak – but ninety-ninety percent boredom, one percent terror. That's the summation of shipboard life.

MG: Maybe this is a good time for us to take a lunch break.

AT: Sure, sure. Okay. I could talk forever.

MG: [laughter] Good. Well, again, you're making my job very easy. You're answering questions before I even get a chance to ask them. So this is wonderful.

[TAPE PAUSED]

AT: Okay. Good, good. One other thing. I don't know what the gist of other people's conversations have been, but there is a whole subculture of people who have spent a significant part of their career in fieldwork. By fieldwork, not just going from a lab and going out for a month and coming back and live in the same place for a year, but I mean,

really being on the move for a good part of their career. So, I hope to some degree, I give a little bit of the flavor of that. They're the people you never hear about, or anything else – the people on the ships. Actually, they don't have the big field parties anymore in geodesy, but that was part of the backbone of the old Coast and Geodetic Survey. Without those people, the survey of the nation and its coasts wouldn't have happened. So I would like to at least give a little bit of that flavor.

MG: Good. Yes. What was your next assignment after your time on the *Whiting*?

AT: Okay. Where I ended up going was, instead of a geodetic field party that I'd asked for, I went to a hydrographic field party. And this hydrographic field party was NOAA Launch 1257, which was a big pretty boat. It was a sixty, sixty-five-foot long. It was what's called a Gulf crew boat. It was about a twenty-knot boat when it was operating properly, which was about a third of the time, unfortunately. [laughter] Regardless, that was a fun assignment. That was down in Cedar Key, Florida is where I started. This was also considered mobile field duty. After we were married, we did live on 50th Street initially. We didn't particularly like that neighborhood, at least not for a start-up family, so we moved. With me being gone, we moved to a townhouse, which was out in the Virginia Beach area for the last year or so that I was on the *Whiting*. Then we moved from that townhouse when I went to NOAA Launch 1257. The mission of that boat – and there was a sister boat, 1255 – was to conduct offshore surveys, not inside of harbors. They were relatively big fast boats in areas like – the Florida Gulf Coast was ideal for it because you had a long area of continental shelf where the boat could operate from like fifteen feet of water to – we operated out to sixty, sixty-five feet of water, which was actually a pretty big swath, a pretty wide area, about twenty miles wide or so. That's, once again, a guess. I don't remember exactly, but regardless, it's pretty wide. We could get a lot of work done in an area like that. The boat was a twin-screw; two 1271 Detroit Diesel engines were in it. Actually, that's probably the source of why I have hearing loss right now is from those diesels on that particular vessel. Cedar Key was, at that time – I think it's a little more touristy these days. There were tourists that went there at that time, but it was still pretty primitive. We lived there for about three, four months. We ended up in a trailer that was right by the water, basically. Fortunately, no hurricane or anything ever came through. We tied up at the pier at Cedar Key. The people there – it's not like the Florida that you envision of big beaches. In fact, there were very few beaches around, really. It was more marshland. I guess there were areas where there was some – I can't remember the name of the kind of tree – it's not manzanita; that's the stuff that's in the mountains. You know what I'm talking about. Mangrove, there we go. I think there were some mangroves around. Anyway, it was a town in which we met people. There were two bridges going into Cedar Key; it was on an island. There were people who actually bragged they'd never been past the second bridge in their whole life. [laughter] To give you an idea of the – they were very provincial in their outlook, a good part of them. There was a small contingent of people who were retirees who had come down there and found a cheap place to live. Our neighbor was a retired fireman from Buffalo, New York – he and his wife. I loved running that boat. Actually, I learned ship handling, I think on that boat more than I ever had with anything else. With the twin-screw and the necessity of sometimes bringing it into very tight spots, you really learned

how to maneuver a vessel like that, and when to use power and when not to. When you're approaching a dock a little too fast, you find out right away because you go *clunk* and this sort of thing. [laughter] I think any ship handling I did after that, as a commanding officer of various ships, was directly related to my two-year experience on the high-speed launches. Cedar Key, there we went for lots of walks. The last time I rode a bike, I hate to say, was in Cedar Key; my wife and I each had bikes. Perhaps, I'm too much of a wimp, but I slid on some gravel, broke an arm, and I decided I've had enough bike riding at that point in time. Regardless, it wasn't a bad break. It just had to be wrapped up a little bit. It wasn't ever splinted. The crew – I had three. I had a launch engineer, which wasn't a licensed engineer, but he still knew quite a bit about diesel engines. I had a deckhand, who was also a survey tech – well, I had two deckhand/survey techs. All of these guys, as far as I know, came from the Southeast U.S. For myself, coming from California, this wasn't bad. I'd worked on the *Whiting* for a couple of years. We had lots of people from the Southeast, particularly North Carolina, Harkers Island area. I understood their language. What I didn't understand on the Gulf Coast initially was we saw a lot of – particularly, as we headed a little bit further north and to the east from the Cedar Key area, [we] started running into lots of tugboats, tugboat captains. They were invariably Cajuns from Louisiana. So myself, having been a little bit trained on radio, you're passing one of these guys, and you try to explain what you're doing. You say something very properly – “Tugboat on my starboard bow. I will be passing you port to port or starboard to starboard, or just maintain course.” We were doing just fine as far as making clear. These guys would come back with something like, “ARRRRR over.” I couldn't understand a word they said. Regardless, I never got into any serious trouble with any of them. Launch 1257, like I say, the fellow that I replaced, the two boats – the 1255 and 1257 were initially working in tandem, by that, each had a section of the area that we had to survey. When I first got there, we were sitting on the pier watching the 1255 come in. This was the quote I always remembered from these boats because they threw up a big bow wave – “Here it comes like a veritable snowplow.” Just watching the bow wave come off the boat as it was coming in. They were very pretty to watch. They had enough power that they could get up on a plane, meaning they were skimming the water to some degree. When they got up on the plane, they were going eighteen to twenty knots. They were relatively fast by comparison with most of the other survey boats that we had. So we'd go out. An average day, we'd hit about a hundred miles of hydro, which would be about five twenty-mile lines or so. When the weather was particularly good, particularly during the summer, when we had long days, we tried to get out early in the morning and stay out as late as we could, a little overtime for the crew. They were civilians. That was okay. Good days, we tried to use the best we could and use as much as we could. These were not eight-hour-day jobs. The other problem is that there were a lot of days where the weather was a little too rough to get good hydrography, good data. With any boat that you've ever been on, there are lots of mechanical breakdowns. Then, having a full suite of electronics inside, there were also electronic breakdowns that can cause problems. So with all of that, I'd say that out of eligible days, we probably managed to actually work about one out of three days, the whole time I was with it. That sounds bad, but the other time you have people looking at diesel engines, you have guys working on the electronics. Also, on those down days, we would also do processing. We have a processing trailer as well that had the same kind of

computer system. Besides acquisition software, we had processing software that we used with the hydrography. The thing that sticks with me the most about working on the Gulf Coast – I'll say number one is the fact that that area of Florida – if you look at Gainesville, Florida – has supposedly the highest incidence of thunderstorms in the U.S. Well, there were a lot of thunderstorms out there on the Gulf of Mexico, also. Anywhere from fall through late spring, big frontal systems come down. This was before you had a lot of TV weather. You'd get radio weather; it would tell you what was going on. But you never really knew how the day was going to end up. So we experienced a lot of thunderstorms, saw a lot of water spouts, while we were there out in the Gulf. One particularly memorable storm, there was a tropical storm, it was in the Southern Gulf. It wasn't close to where we were, but there were bands coming up out of the south towards us. I got caught in one of those. We were south of Apalachicola. This particular storm we were in, I would say the wind was blowing at least seventy to eighty knots in the short term, for about half an hour, forty-five minutes. Seas just came up immediately to about – keep in mind, these boats are flat-bottomed, not meant for deep-sea work. But seas came up to somewhere around seven, eight, maybe even nine feet, in a very short time. We never would go out under those conditions normally. I said it was like being on the inside of a washing machine when we were caught in that particular storm. I actually radioed to the Coast Guard. I finally got a hold of the Coast Guard, wherever they were – I forget where their station was at – and told them that there was a storm, and the storm was actually heading towards Apalachicola and told them somebody had to issue a warning. I was told later, and I'm sure that somebody in the Weather Service would say I'm wrong on this, but I actually talked to a woman who the Coast Guard relayed the message to. At the time, she was working, I believe, at the Mobile Weather Station. They relayed the message to her, but under Weather Service rules at that time, she had to get permission from some other office to issue a warning somewhere else. By the time that was all said and done, the storm had hit Apalachicola. It didn't kill anybody or anything like that, but they said that a lot of small boats that were used for oystering and mullet fishing in that area – it turned over about a hundred that were inside the bay there. It was a major league storm, on a short-term basis. Other memorable stuff – some days, I think it was in the spring and summer, that you'd get a lot of – I don't know if it was eelgrass, or what they called it, in on the bottom. In the shallower water, we can see that. So sometimes it was sort of fun. You'd just lay up on the bow, and as the boat was – there were four of us. We only needed two actually operational at a time. There was a guy steering the boat and a survey tech down in the cabin at the computers. The other two guys, the launch engineer and – well, other than myself when not rotating through steering or survey monitoring - would lay up on the bow. If the water was clear enough, you could just look down and watch the bottom go by. It was fun. That was a good thing. Where else did we go? The next place we went was up to – after we finished all the work we could do out of Cedar Key, we brought the boat up to Saint Marks, Florida. Saint Marks was a little town on the Saint Marks River. There was really no place to live there. Tallahassee was thirty miles away. So we all moved up to Tallahassee. The crew people and myself all stayed up in that area, and everybody for themselves, so to speak. We'd meet each morning and head down to St. Marks. We'd generally start our day, if we got down there before it was light, at a place called the Fishnet Café that we went to. So we started the day at the Fishnet Café. We'd get coffee. The Southern guys I was

with, Glen Hendricks in particular, from Georgia – he was from rural Georgia. He'd get his grits and red-eye gravy, and I don't what-all else. They loved it. I couldn't stand it. [laughter] Anyway, Saint Marks – we had an eleven-mile, down a fairly narrow river to get, actually, out to the open Gulf. So we had close to anywhere from about an hour run to actually get to our working area before we could start work if we left at six in the morning. So worked out of Saint Marks for about three months or so. Maybe a little longer. I don't know. I'll say four months. When we first went there, it was interesting. Before deciding on Tallahassee, my wife and I were looking for a place to live there. We didn't really realize just how rural the area was. So we stopped at the marina, where we were going to fuel up, to see if there was a place we could tie up the boat. It was a recon trip. It was a family called the Lynns that ran this, Mrs. Lynn was behind the counter. So we were asking her about places to live and this sort of thing. Then she launched into talking about her woes with her family. She was really upset with one of her sons, who had moved away. So I asked her, "Well, how far did he move away?" "Well, he lives about fifteen miles from here now." [laughter] "You have a different view of the world than we do." She was very upset that he'd moved away.

MG: Yes, you put on your survey, "I was a Yankee in South Georgia." Were you treated differently by the residents there?

AT: By South Georgia, I meant the Panhandle of Florida which is totally different than the east coast of Florida. Well, it sometimes caused a little lack of communication. I have two issues going. One, I wasn't a Southerner. Two, I represented the federal government. I probably could have caused some of my own problems occasionally, too. Who knows? But just occasional stuff that would occur, or this lack of communication between – always a little bit of edginess there when I was talking to them. Once again, these people were like the people in Cedar Key that had never been past the bridge. I called these little towns – we hit a few more before we got back to what I called civilization. We were living in Tallahassee and still working out of these little places. I called them Gulf Coast city-states. These people fished, they hunted, they were pretty self-sufficient with most things. There could have been a nuclear war, and they wouldn't even have known it. They would have just kept going like they were – I feel that. Obviously, everybody would know it. Still, they'd have their fish, they'd have their oysters and whatever else was out there, and they probably would have made out just fine. Very self-sufficient, but also closed-in, if you will. One other thing at Cedar Key that occurred – Fourth of July, we were going to have an open house. So I wrote up this great big article about having an open house on our boats, and come on down, and talking about all this stuff. I forget if it was the Office of Coast Survey, or what it was called. It's gone through a number of name changes. But it wasn't the Coast and Geodetic Survey at that time. It was no longer the Coast and Geodetic Survey. So what came out in the paper, as opposed to what I'd written up for the paper, was, "Bubba Castell of Castell Seafood says the geodetic boats are going to have an open house on July fourth." [laughter] I said, "Okay, we got to advertise." That was the source of information. Moving on, we got up to Saint Marks. That wasn't too bad up there. In fact, I liked it. Going down the river was fun. We would see alligators. We saw one time, a great big otter that was on the riverbank. For otters, a large otter. So we'd see different kinds of

wildlife that was out there before we got out on the Gulf. I can't really think of anything too exciting that transpired. We were working in an area called Apalachee Bay at that point. We finished up that work. Then we moved to a little town called Panacea. Panacea was about fifty miles southwest of Tallahassee. My wife and I, we got a house – actually, a fairly nice house, on Ochlockonee Bay. That's where we were at. The rest of the crew, once again, it's just fend for yourself with this whole thing. While living there, there was one thing that we hadn't counted on. There were all kinds of snakes around. We would see alligators just cruising by on the bay, even though it was saltwater. We'd also had huge spiders. [laughter] We got all kinds of wildlife in and around the house. Some of these trapdoor spiders – they had shag rug in the house, and these damn spiders would make their little trapdoors in the rug. We got rid of all of them that were doing that, but they were actually burrowed into the rug, waiting for stuff to come by. Very educational this whole thing. The really good thing about Ochlockonee Bay – there was a restaurant. A little further up the Ochlockonee River, it was called Julia Mae's number two. Julia Mae's number one was in a town called Carrabelle, which is a little further down the road towards Panama City Beach. We would go there quite often. We had a couple of relatives come through – Kathy's parents, my mother, came through one time. We'd always take them up there and get these platters of scallops and shrimp and whatever else. Julia Mae was the cook at Julia Mae's number two. This is a different world we lived in then. She'd come out. She did a lot of the serving herself, too. She'd come out with this platter full of stuff with a cigarette stuck straight out of her mouth, puffing away as she's bringing out the food. Just something you never see anymore, and hopefully never will see again. Like I say, it was just a cultural difference. Panacea? What was close to there? Wakulla Springs. There are a lot of springs in Florida, as you probably know. Wakulla Springs. We went to that at least once – big alligators on the bank. You'd take boat rides there in glass-bottomed boats. So that was pretty nice. I think that's the biggest spring in Florida. I think that's what it was advertised as. We finished up in Panacea, still had a little bit more work in that area, and then we went to Turkey Point Marine Laboratory. That's actually where we were tying up the boat. It's a Florida State University laboratory. They had dormitories for students there. It was the end of summer. They didn't have anybody in there. So we stayed in there for a couple of weeks. The one thing I did find out there was how fast alligators can be. There was about a seven-foot alligator that lived in the lagoon where we tied up the boat. He was down there – well, the water level, about as high as it ever got, was about four feet below the top of the pier. He was down there cruising around next to the boat, and I threw him a chicken bone. I've never seen anything move that fast. [laughter] He got that right away. I also saw the same alligator attack a goose that had nested up on the bank one day. That was his home territory. After Turkey Point, then we moved to Panama City Beach. This was about November of 1977, I think. Yes, I think it was about November of 1977. There we were back to civilization. I didn't end up doing much work out of there because it was getting to be time for me to be transferred again. We stayed in a beachfront condominium while we were there. It actually got pretty cold in the late November, December timeframe there. But we had a few good days walking on the beach. My daughter, by that time – I forgot to mention, our daughter would have been two years old then. She'd made it up to two. Speaking of which, for myself, my idea of

packing before I got married – my wife can vouch for this – was a box of books and a suitcase, period. That all changed when I got married. [laughter]

MG: I bet.

AT: So we had other stuff that we had to bring around with us, to say the least. But I finished up at Panama City Beach. There was a little bit of work that had to be done on the boat. Then a guy came down that relieved me. My next assignment was Naval Postgraduate School. That's in Monterey, California. I didn't mention that most of the time, a lot of these assignments going back and forth, where my father-in-law and mother-in-law lived was close to this big lake in Northwest Arkansas. The first years we were married, they lived in a place – this is the honest-to-God truth – called Yocum Bend area on Bull Shoals Lake. It was thirteen miles of dirt road to get there, where they had retired to, which was like an old fishing resort. It was about four cabins. Through the years, we stopped there many times. All of our children loved it because they'd go fishing on the lake or boat riding. Sometimes rent a houseboat, or something of that order, on the lake. All the kids have very fond memories of this. It was good. The name of this little piece of heaven was Sunset Cove. That's because the cabins were looking to the west and looking over this cove. In the summertime, it was pretty obvious that it was Sunset Cove. In the wintertime, not so much. Anyway, we stopped through Arkansas. That particular trip, we hit the Grand Canyon after that. Well, stopped through New Mexico; we had some relatives there – Kathy's brother, an Air Force officer at Kirtland AFB. The Grand Canyon, and then L.A., where my mother lived, and then up the Big Sur coastline, drove all the way up on Highway 1, from Los Angeles to Monterey. I always loved Big Sur. That was a very pretty drive. Then I made it to Naval Postgraduate School.

MG: Did you have a choice in the courses you would be taking and what degree you earned?

AT: Yes. I had full choice. I took what I called the non-intellectual route, which was to get a Master of Science in Management, which is what I got my degree in. Probably a little more related to human resources than financial management or whatever. I should have been done in five quarters, but at the beginning of the fifth quarter, unfortunately for me, I had an appendectomy at Silas B. Hayes Army Hospital at Fort Ord, which was right next to Monterey. They almost killed me. By that, the operation got infected. I came home, and I kept having really heavy night sweats, and my stomach kept getting redder and redder. My wife finally, after a week of this, told me to get my butt back to the hospital. The second I showed it to the surgeons, they wheeled me into surgery to open this thing up. This is another sort of disgusting thing, not nasty, but it never occurred to me – I woke up the next morning from anesthesia, and a corpsman is there asking me if I want any kind of painkiller before he cleans out the scar area. I was under the impression that this would have been stitched up again. I did not know I had a hole in my side that was stuffed with gauze. He's sitting there pulling this gauze out. It must have been a hundred yards of this stuff. By the time he pulled about ten pieces of skin off with it, I said, "Wait a second, give me all you got." So I was on Demerol for probably the next

close to thirty days I was in the hospital until this thing finally got cleared up. That sort of destroyed my fifth quarter or whatever it was. So I had to stay. I stayed until June of 1979 at Naval Postgraduate School. Once again, it's just the story of your life when you're doing that sort of thing. I had a couple of very good friends while I was there. I think one of them I heard from one more time after leaving. Actually, one guy took me to the hospital, to the emergency room. Initially, he thought it was all in my mind that I had this thing going on, as did the doctors initially. I was in the emergency room for about an hour – well, more than an hour, a couple of hours. They finally took a blood sample – I guess it's the white blood cells that were way up, meaning I was fighting an infection, and that's when they figured out I was telling them that this is not good. [laughter] They made it a little worse. Probably what happened – the appendix actually probably burst when they took it out, and it got on skin, and then it infected the – I didn't get peritonitis, but I had a huge infection in the layers of skin. We actually have about ten layers of skin, I found out, with that one, and it infected the inside and caused all kinds of problems. So I almost got killed in the Army, even though I had been released from it. [laughter] Finally, I recovered from that.

MG: Can you tell me more about the curriculum and classes you were taking at Naval Postgraduate School?

AT: It was actually pretty standard. I'm sure that the Master of Science and Management anywhere else would have been pretty close to the same thing. I can't even think of some of the names of the courses I took. Well, I had to take some sort of operations [course]. I forget exactly. That was a math course, a little statistics and probabilities. I remember this – if you have a ninety percent chance of hitting a target with a missile, how many times do you have to shoot to make sure you've got it within a certain error bound. Operations Research was the name of that class. There were two accounting classes I remember. A class in management related to psychology. The only thing I remember from that class is Maslow's hierarchy of needs. It starts with the basics, food and whatever, and then it goes up to you can self-actuate, meaning you're very happy and pleased with your life and everything you're doing, I guess. I had another government class that was taught by a Navy commander, some sort of management in the government, or something like that. The one question I asked him which he waffled quite a bit – I still remember, he assured me – I said, "Do you think that the average congressman is capable of understanding most of the technical issues that are going on?" He said, of course, but I still don't believe that. [laughter] I was just wondering. I think he didn't want to get himself in trouble. Let's see. What other courses? I just don't remember the courses. It was a lot of reading courses. The last course I took – oh, there were two courses. I will remember this forever. One was an economics class. The final problem – I made a mistake, a technical error in that class. We had a choice of writing a paper to get a grade, or to take a test. So I said, "Well, I want to make sure that I do good on one or the other, so I'll do both." Well, what the professor did, he took my lowest grade and gave it to me. It was a B+, but that made a difference to me. I graduated from the Naval Postgraduate School with a 3.83 grade point average, and this made the difference between a 3.83 and a 3.85, which would have been magna cum laude; 3.83 was nothing. [laughter] It wouldn't have done me any good anyway. It wouldn't have

meant anything. Still, it annoyed me. What I learned from that course –some guy had started making cabinets, and he made a whole bunch of cabinets, made a bunch of money. Then, all of a sudden, the price that people were willing to pay him started going down. What happened? I couldn't dream up anything that happened. So I wrote something that was just off the wall, I guess, hoping for the best. The answer that he wanted is that because other guys saw him making money, they all jumped into the business, and then you had the standard capitalistic mantra that you have competition and price goes down. So now whenever I see prices going down – actually, I was able to use that to explain to a woman – I was out in Seattle three years ago with my wife, and riding back to the airport. There's a woman and her husband sitting behind us. They were from Ohio. This woman was berating the Obama administration because the price of oil had gone way down, and her son, who had been making oodles of money working on oil rigs, didn't have work at the time. She said it was because of all of Obama's regulations. I explained to her; instead, that really what had happened was that because the U.S. was then producing so much oil because of the shale oil revolution that there was an excess of oil, and that's what's driving the price down, and high priced drilling, which is what shale oil is – it costs a lot more than if you're just lucky to get into a standard sandstone that the oil comes flowing up of its own accord – is much more expensive than other sorts of oil deposits to work in. She didn't like hearing that, but that's really what it was. It was classic supply and demand. That is one thing that I had come to understand from that class. The other class I had – the final class that I had was just sort of do your own thing, a thing you end up writing at the end of your school. Not an essay, but that's basically what it ended up being. So I used that to do a little research on the next job that I was going to, which I knew at that time was geothermal mapping in Boulder, Colorado. I'd applied for that job when I saw it advertised in a NOAA Corps bulletin. They were looking for an officer interested in doing that sort of work. Geothermal energy, the nature of it, is very similar to the same geology as ore deposits. So accordingly geothermal reservoirs are, in fact, a lot like ore deposits, the kind where you see veins of quartz that have gold flecks or silver flecks. That's the end product of a hydrothermal geothermal system. As it cools off, this stuff precipitates out and has all of these extra goodies in it. That's if you're lucky because some don't have anything in them. Others have good stuff that we end up mining the stuff that's actually precipitated out. Anyway, I ended up doing some research for that to at least prepare myself for the next assignment. I'll tell you what; I am getting a little bit tired – we can start with geothermal mapping next time around.

MG: Sure. That's a good idea. It will give me a chance to listen back to what we've recorded so far, and see if there are any follow up questions.

AT: Okay, sure.

MG: I will make a note that we're going to pick up here next time. We're in the middle of 1979, so we still have a ways to go.

AT: We're headed off to Boulder, Colorado.

MG: Good. Well, I look forward to the next chapter.

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Reviewed by Molly Graham 5/26/2020

Reviewed by Albert "Skip" Theberge, Jr. 5/30/2020

Reviewed by Molly Graham 5/30/2020