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NOAA HERITAGE AND THE NATIONAL WEATHER SERVICE

AN INTERVIEW WITH MARY GLACKIN
FOR THE
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INTERVIEW CONDUCTED BY
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TRANSCRIPT BY
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Molly A. Graham: This begins an oral history interview with Mary Glackin for the NOAA Heritage Oral History Project on November 4, 2021. The interviewer is Molly Graham. It's a remote interview with Mary in Jacksonville, Florida, and I'm in Scarborough, Maine. Well, Mary, I'd like to start at the beginning. Could you say when and where you were born?

Mary Glackin: Okay. So I was born in Philadelphia, Pennsylvania, in October 1954.

MAG: Happy belated birthday, by the way.

MG: Thank you. Thank you.

MAG: I'm wondering if you can talk a little bit about your family history, starting on your father's side, and trace how they settled in the Philadelphia area.

MG: On both sides of the family, I really am Irish, but quite different. My father's family immigrated over in the 1840s, and they settled around the Susquehanna River in Maryland there, really rich agricultural farmland, and you can find very early gravestones from that period. And they came – one of their motivations for coming was not only better life but also religious freedom. They were Irish Catholic. So that was really an agricultural family, although my father – his father was not the oldest son and was not going to have a place on the family farm, and so he moved up to Philadelphia and came to work for the Pennsylvania Railroad there. And between those two locations, he met my grandmother, who was also from – she was from Oxford, Pennsylvania, which also was an agricultural community at that time. But they settled in Philadelphia in a small row house there. My father also came to work for the Pennsylvania Railroad with a rather long disruption of World War II. He was one of three boys that were there. And that side of the family is the only side of the family where I actually got a first cousin. I only have had one first cousin and many, many second cousins that I'm close to but only one first cousin. My mother's side of the family, her parents immigrated from Ireland in the early 1900s. Her mother came over first, and she was a domestic working out on what's known as the Main Line in Pennsylvania. Then she did go back home for a visit. It was when she was back home that she met my grandfather, who had a plan to live in Scotland until my grandmother pointed out the error of his ways, so they both came back and immigrated through New York and came to settle also in the Philadelphia area. My grandfather was trained. He had been trained as a shoemaker. He had gone to Scotland to get that training. But also, while he didn't drink, he served as a bartender. So when there wasn't Prohibition, he would be tending bar as well as fixing shoes, mending shoes. That's kind of the background. My mother was one of two children. She had a sister who was very close to us and the family and no other offspring in that family.

MAG: Your grandfather, the bartender, was he also a bootlegger during Prohibition?

MG: No, I don't think so. I don't think so at all. He did a number of things. He was a very industrious person. That's what my mother always talked about. He would take the train with them to the shore to drop off his wife and two girls for a week's vacation, but he'd turn right around the same day and go home so he could work all week. He never took a week's vacation. He never took a vacation. [laughter]

MAG: And you mentioned your father's side of the family came over for religious freedom. But did they encounter any anti-Irish or anti-Catholic sentiment?

MG: It's not talked about very much. They were one of the founding families of a small church there, St. Patrick's, which still exists to this day. It's part of the Wilmington archdiocese. It was actually on land that was my ancestors' land that that church was built on. So I don't know. I've heard more of that from my mother's side of the family in Philadelphia during the Depression – signs that would say “Irish need not apply here” type of things. My mother herself never dwelled on that. Her sister had a little more to say about that.

MAG: The family farm they had, what kind of farm was it? A working farm?

MG: Yes, it was a working farm. They had dairy cattle, and they raised both dairy – they did everything. They had crops. They had dairy. They had some steer. They would grow cattle or raise cattle; I guess you say, there, so they did all of that.

MAG: It sounds like your grandfather wanted a little bit more of a city life. What was his role in the Pennsylvania Railroad?

MG: He worked in an office in the railroad, so I don't have a lot of insight into that. My father was a clerk at the railroad, and my uncle was a conductor, so it was a major source of employment, and I think good-paying jobs, secure jobs, good-paying jobs.

MAG: Do you know how your parents met?

MG: They met through a mutual friend. And they were married right before my father shipped out for World War II.

MAG: Can you tell me a little bit about his service? Which branch of the military was he in?

MG: Yes, so he was in the Army Air Corps. This is World War II. We didn't have an air force. My father was very mechanically inclined, so he had training before he shipped out and went to small engine training, so my father spent his service in the Pacific, basically flying all around the Pacific repairing engines there. So let's just take a two-second pause here. [Recording paused.]

MAG: Did your father talk about his service?

MG: Not really. We have a letter that is framed that my father sent from – he got a rest and relaxation, R and R, in New Caledonia. He described a lot of things, a very descriptive letter for a man that didn't have a lot to say; it was quite a long letter and a descriptive letter. There were lots of little letters that were all saved by my grandmother and my mother, but they didn't really – nobody was reporting on what they were doing. They weren't allowed to say that kind of stuff, so my mother spent most of the war – she knew he was in the Pacific, but she didn't know where he was in the Pacific.

MAG: And how did your mother spend the war years?

MG: So, my mother worked at the Navy yard in Philadelphia, which she greatly enjoyed. The Navy was doing a lot of – so she was the head of a stenographer pool, and her claim to fame there or one of her biggest excitements was she flew with some of the people she worked with down to Dahlgren Naval Station in Virginia because they were doing some testing down there. In the course of the flight, they let my mother fly the airplane, so she always claimed she flew a plane. [laughter]

MAG: That must have been exciting.

MG: I think it was quite exciting. They worked six days a week, but I think there were a lot of interesting things going on and people were just busy.

MAG: Outside of their service during the war, what did they share about their childhoods with you, about what it was like growing up through the Depression, things like that?

MG: So in my mother's family, one of the things they would talk about is my grandfather actually sponsored a lot of immigrants from Ireland. You needed to have a sponsor to come over, so there would be occasional parties because, when the – almost everybody went into service, either mechanics, gardening people, kitchen help in big houses out on the Main Line. But if they got time off, they would frequently come to my grandparents' house, and there'd be fiddle playing and music and dancing, a lot of fun kinds of things. As I said, they're hardworking people that – my mother didn't use paper towels until like 1995. [laughter] She just wouldn't waste a – that's an exaggeration, but not by a whole lot there.

MAG: When your father came back from the war, did he pick up where he left off with the Pennsylvania Railroad?

MG: He did. He went back to the railroad. He did spend a little bit of time on the GI Bill at Drexel University but didn't complete any degree there.

MAG: What had he intended to pursue?

MG: Engineering.

MAG: Oh, neat. Well, tell me a little bit about your early memories of growing up in Philadelphia.

MG: I was one of five children. We lived on a block where everybody had – probably the average on the block was about five kids. Some people had three, but other people had eight, so we grew up with a lot of kids and went to a Catholic elementary school there, where, honestly, there were seventy people in the classroom. It was the height of the baby boom, and you just sat down and did what they told you to do there. We were there until we left. We moved out of Philadelphia in the 1960s, when I was in fifth grade, and we moved to the suburb there in Delaware County, a town called Drexel Hill. That was a solidly middle-class area.

MAG: Before you moved, you lived in West Philadelphia. And I'm wondering if you can describe what it was like at the time you lived there.

MG: Yeah, so we had actually quite a large rowhouse, so our house itself had four big bedrooms. My grandmother lived with us. My mother's mother lived with us for part of the time. It would not be unusual for my aunt and uncle to come and stay for a weekend, so there were a lot of people around. It was of the time where you went out and played, and you stayed outside until you got called for a meal, pretty much, so we did a lot of roller skating on the street, and we had a lot of games – kick the can. We would play with a ball and Red Rover and all of those things, just a whole swarm of kids.

MAG: Four bedrooms sounds pretty good, but with five kids, did you have to share a bedroom?

MG: Yeah, I did. So I actually shared a bedroom with my younger brother. So one of the things – I don't know whether I mentioned this in my thing [pre-interview survey] or not, but I had a brother that was older than me by two years that died of leukemia, childhood leukemia. At that point, we kind of got shuffled around, and it really wasn't very much longer after that that I moved. All in a very small period of time, my grandmother also died, so all of a sudden, there were less people in the house, so I ended up when we moved – and I think a little bit before we moved – with my sister. She had shared a bedroom with my grandmother. But then, when my grandmother died, I got moved in with her.

MAG: That must have been really tricky for your family.

MG: Yes. I think it was, for sure. Yeah. You don't bury a child without consequences.

MAG: The neighborhood where you lived in West Philadelphia, were there lots of other Irish Catholic families? I'm wondering if that's why the families were so big.

MG: Yes. There were Irish Catholics. There were Italian Catholics. There were German Catholics. [laughter] There were a lot of people, so the Catholic church was pretty dominant, I would say, in that area.

MAG: What was your family's relationship with the Catholic church? How often were you going to mass?

MG: We were just going on Sunday kind of thing, so I think my mother had a deep faith, but we weren't a family, for example that said the rosary together or anything like that.

MAG: The Catholic school you attended in Philadelphia, was it all-girls or coed?

MG: So in Philadelphia, the boys and girls were in the same room, but all the boys were in the front of the room, and all the girls were in the back of the room, and so that's the way the seating went. That actually persisted even when we moved to the suburbs to eighth grade. In eighth

grade, it was still that way. Then when I went to high school, the boys were on the other side of the school, and the girls were – the boys and girls were segregated there.

MAG: Was it a particular order of nuns that you were taught by?

MG: So we were taught by the Immaculate Heart of Mary in elementary school.

MAG: And can you say what that means? Was it a particular –?

MG: So it was a religious order. There's a number of them – the Sisters of St. Joseph, which we also had, the Sisters of Mercy. I can't tell you very much more about them, except that there were a lot of them. It was a common order; I guess I would say. I actually do have a second cousin – I did have a second cousin that was in the religious [order] but not in any of those orders.

MAG: Were they all nuns, or did you have any priests or male administrators there?

MG: I never had any male teachers. In some of the younger grades, I might have had – I did have a young woman or so to teach. But for the most part, we had religion almost all the way through, until I got to high school. In fact, I should be careful. I probably had maybe one male teacher in high school. But pretty much I would say the religious were most of the educators that I had, and very dedicated, without a lot of assets to do it, either.

MAG: My dad has told me some horror stories about the nuns that he was taught by. How did they treat you?

MG: Oh, yes, I don't have any horror stories at all. My girlfriend and I joke that we had one Sister that was probably senile. She probably should have been retired, and I guess they had so many slots to fill, and she wasn't retired. But no, in fact, I would say the nuns were tremendously dedicated to our success. Some of them emphasized particular things. Handwriting was tremendously important. Tremendously important. [laughter] But I had a physics teacher my senior year of high school, and I can't remember her name, but she was a Sister. We had almost no equipment. I said we spent two months with a block and a plank measuring the coefficient of friction and only to come to find out later the boys on the other side of the school were tied into the computer at the University of Pennsylvania. But by the time I left her class, I knew how to use that slide rule up and down and this way and that way. Very dedicated. You got a real sense of, I think, discipline and punctuality. I'm pretty much never late for anything. It all comes from that.

MAG: When you were living in Philadelphia, did you get to take advantage of the city and the things it had to offer?

MG: Yes. So because my father worked for the railroad, we actually had a railroad pass. So, as a family, we took the train up to New York City, and we were able to ride for free. We went to Washington, DC, to see some of the sights there, so we did that. Yes, I think we didn't – I'm

sure I saw the Liberty Bell when I was little. I don't really remember much about it. But we'd go to the zoo and things like that.

MAG: Did your mother ever work outside the home?

MG: She did when we moved to the suburbs. At that point, my younger brother was in first grade, and my mother went back to work then. This was where it was getting time to start to send people to college type of thing.

MAG: What did she do?

MG: She went back to being a typist or secretary – secretary role. She did some temporary work, because one of the things I haven't mentioned that would be important to mention here is, in the late 1950s, my parents and my aunt and uncle, really motivated by my aunt, bought a very small cottage on a barrier island in New Jersey that's now worth a whole lot of money. My aunt's rationale is you should never pay rent, so we were renting to go to the beach for a week or two, and that really bothered my aunt. My father liked to fish. He would hunt and fish, so this house was bought – unheated. It was really a fisherman's cabin type of thing. We went there. All of us kids stayed there all summer long. Then, in the spring and the fall, we would go for some weekends until it was too cold to do that, so I would say – and we still have this property with a different house on it in the family at this point. We just celebrated seventy years in this place on the island, so I think that was a big feature growing up. It was also where I really began to notice weather more. We were very in tune to storms and things like that growing up, so my parents were always really careful that we would not be down there – you didn't get a lot of warning for hurricanes and things like that, so they took all of that very seriously.

MAG: Are there any particular summer storms that stand out to you that you may have witnessed?

MG: Well, I did witness one. I think 1962. I won't be able – it's embarrassing I don't know the name of it, but it was actually in the September timeframe. Everybody was sent to school until eleven o'clock when they decided it was too dangerous to have everybody at school, so they released us all. My mother would almost talk to her dying day about holding on to all of her kids. She happened to have a car that day – I guess my father had taken public transportation – but putting all us kids and neighborhood kids in her car to drive them home and then being worried that the wind was going to flip the car over in the six-block distance she had to go. So the fact that something like that could happen really showed the lack of satellites and radar and that type of thing, how ill-prepared that they were. That definitely stood out.

MAG: What was your interest? Were you just fascinated, or did you want to learn more?

MG: So it was something – weather is something we all talk about, and we always will. I actually would say I really backed into my career through computer science, though, because that was – I went to high school, and then I started at Drexel University. I started in math. I actually wandered around with a couple of majors. When I eventually got to the University of Maryland, it really occurred to me that I really should be in computers because that was where the future

was going to be. It was kind of at that point that I was a contractor for the National Weather Service. Computer science and meteorology shared the same floor, so it was easy to go back and forth taking classes there.

MAG: Remind me what year it was that you moved to the suburbs.

MG: So I was in fifth grade, so I think I would have been ten then, around ten, so about 1965.

MAG: You had alluded to this as part of the trend of white flight at the time. How explicit was that motivation for your parents, or was it because they were ready to move anyway?

MG: So what happened – I don't think my parents necessarily would have moved, but the property values started plummeting, and I think that was the real concern because that was essentially the only wealth you had was in your house, so I think that was part of it. I think it was just being caught up in this whole thing.

MAG: How did you feel about moving at that time? Were you worried about leaving your friends?

MG: No, I was fairly oblivious to what was going on at that time. I don't really remember that. I remember when they gave you – you would have paper report cards, and the last report card I got from there in December – we moved right over the holidays, and in December, the Sister had given me all As and maybe one B, which was not really what my report card looked like, but I think she was trying to impress the new people that I was a really smart kid. [laughter] So that's the biggest thing I remember about it, thinking, "Oh, wow, look at this."

MAG: You were very young, but this was when the civil rights movement was getting started and then the Vietnam War. What was your feeling about these events then?

MG: I think an unsettling aspect of it was all there. I remember very well when JFK [John F. Kennedy] was shot. Everybody can tell you exactly where they were at that time. I think, for kids, it left you really unsettled. The news was troubling. We watched the news as a family, pretty much. The TV was controlled in the house, but the TV got turned on to watch the evening news, and everybody watched the evening news, so that was there. My brother was coming of draft age, so that was a consideration as well.

MAG: When I interview folks, especially from Irish Catholic families, they talk about identifying with the Kennedy family and that his assassination hit them especially hard.

MG: Yes. I don't know whether I would say I identified with him or not. We were in school when he was shot, so there was a certain – what they did at that time, there was certainly – the tragedy of it was on full display. To me, I think I remember more just unsettled, like, your president's been shot, and that hadn't happened in a couple of lifetimes. I think, for me, it was just the unsettling aspect of that.

MAG: You said the TV was controlled in your house. Who had the control?

MG: My father. [laughter]

MAG: And who was the anchor? I'm thinking of Walter Cronkite and his famous –

MG: Yes, I think Walter Cronkite. Although [Chet] Huntley and [David] Brinkley were watched sometimes, too. I don't really know exactly how that went.

MAG: Would you have discussions about politics and the social movements of the time at home?

MG: Not so much. When my sister really came of age – my sister's seven years older than me – she was clearly much more engaged in those issues. Just a little funny side note – I should actually have pointed out that the first TV, which was the TV for a long time, was actually controlled by my grandmother, who liked to watch the fights. But if you wanted to watch cartoons, you'd have to go up to my grandmother's bedroom and talk her into putting some cartoons on for you. So it wasn't until later we had a TV in the living room for the whole family.

MAG: Would that grandmother share stories with you about her childhood, her life?

MG: Not so much. She was really in decline at that point. Right when I have memories of times is really when she was losing her memory.

MAG: What subjects or classes did you particularly enjoy or excel in?

MG: Math and science. Math and science. That was clearly my interest. I somehow convinced myself I couldn't write, which turned out not to be true, but yes, math and science. Even when we were doing something like English, my favorite part of it was diagramming sentences to make it nice and precise.

MAG: Were you encouraged in these fields and areas?

MG: Yes, I think so. I think so. I think my mother – she had been a professional woman. I think there was always kind of an expectation that it was very important to get my brothers college-educated, but not really to the exclusion of the girls.

MAG: You mentioned your brothers were becoming of draft age. Were any of your brothers drafted, or did any of your brothers serve?

MG: No, my older brother was the one that was potential there, but he drew a high number for the draft, so it's the whole lottery.

MAG: Yes. What else do you remember about your time growing up, the time before going into college?

MG: I'm trying to think. I think I did typical things. I was a Girl Scout for a couple of years there, so I enjoyed camping. We didn't do that very much, but that aspect of it. I played what was called Catholic Youth Organization basketball, so intramural kinds of leagues and things like that, and I enjoyed that. We had a ping-pong table in our basement, which made us kind of popular in the neighborhood. I got to be a little good at ping-pong, so those types of things.

MAG: How was your new neighborhood different and the house you moved into?

MG: I would say the grade school, for the most part, I didn't really – I had one good friend from grade school – in fact, I just saw her last weekend – and a couple of other kinds of friends, people I haven't kept in touch with. But for the most part, there was more money in that area, and there was – I could use the word snobby, I guess, kind of thing. People were [saying], "Do you have this, do you have that? Oh, you don't have this. I have that." I didn't really warm up to that at all. It was much different when we got to high school because, in high school, there was a melding of a lot of different socioeconomic things. Our parish was a richer parish than a lot of them there.

MAG: When you were in high school, how were you thinking about your next steps? What did you think you wanted to do?

MG: I was kind of tooling along there. I was doing some social things. I was part of the play production and designing costumes – doing costumes and sewing and things like that. I just always assumed I'd go to college until my mother gave me a wake-up call in the beginning of my junior year and said, "If you think you're doing that, your grades need to get better." So I just didn't really have a homework ethic to do your homework. I mean, I did my homework, but I didn't really study because I was kind of smart enough that, if you do minimal effort, you can get by with a B- or something like that. At that point – and that was when my mother's like, "You need to learn how to type." I was like, "I don't need to learn how to type." She said, "No, you need to learn how to type," which I was always grateful I learned how to type. I went to summer school to learn how to type. I think that they were open to what I wanted to do. It was my choice. I could have gone to Penn State. I was accepted to their main campus, which probably would have put me on a much different track. I chose to stay at home and commute to Drexel, and that is where I met my first husband at Drexel.

MAG: What do you mean it would have put you on a different track?

MG: Well, I think, if I had left home, I would have been with a group of people – well, first of all, I wouldn't have met my first husband if I was at a different university. It would have been a different track. Maybe I would have been married that young. But I think that I was kind of treating college just like high school. You get up in the morning, and instead of getting on a bus, you're going to get on a trolley and that type of thing as opposed to really a whole kind of culture change there.

MAG: Do you wish you had been on campus and embedded in the student life?

MG: I don't have any regrets at all about things. I didn't have that experience. I was glad my girls got that experience. I don't think it's for everybody. I think I've watched some of my brothers' kids who have actually done better doing community college for two years and then going away to school, so I think it all depends on things. I always say about myself: at that time, I knew everything. You just had to ask me. I knew everything. [laughter]

MAG: You said you weren't that inspired to learn typing, but you were interested in computers?

MG: Right.

MAG: I'm wondering about that.

MG: How do they go together? They weren't that close, actually. Well, the timing was different. I learned to type, and then I really found computers, so they were sequential types of things. But when somebody says you want to learn how to type, your vision is you're going to be a secretary. I knew I didn't want to do that.

MAG: Maybe say more about that. What did you want to do, and why didn't you want to be a secretary?

MG: I think I just thought I could do better than that. Even though my grades weren't really outstanding, I think I had the sense that I was smart enough to do things. My sister also didn't go away to college. In fact, she, like me, did almost all of her college at night school. She had gone into medical technology, so she would take me places. If there was something going on, on a Saturday, I'd go with her to that. I also knew I didn't want to be hanging around blood, which is what she was doing; that wasn't where I wanted to be, even though that was pitched to me. I liked math. If you'd asked me my senior year, I would have said, "Oh, I think I want to be an actuary." I can't think of anything more boring than being an actuary. But that answered the question because it involved math. I knew I was good at math, and it was a career. So check, that box is done kind of thing.

MAG: And what made you stay close to home? Penn State and Drexel were both in Pennsylvania.

MG: Yes. Well, I think expense was part of that. Drexel had given me a good scholarship. It's a private school, but I had a scholarship for it, so it was almost the same cost to go – it was the same cost to go to Drexel versus living away at Penn State. It was all economics.

MAG: So tell me a little bit about your time at Drexel, the classes you were taking, and your experience there.

MG: This is where we can talk about a four-hundred-person lecture hall with three girls in it. That's pretty much what it was. Actually, it turned out one other girl from my parish that I had gone to elementary school was there. We met another girl who was from another part of the city, and there were three of us in the math program in that freshman year. Drexel is a cooperative school. After nine months, I got a co-op position at General Electric in Valley Forge. They were

doing work – the division was called re-entry and space divisions. They were basically building nosecones. That took me a little bit of time to figure out. This is the whole backdrop of the post-Vietnam War, Cold War, everything else going on. I thought, “Well, I didn’t really want to spend my life in defense. This doesn’t feel right, either.” As I mentioned earlier, I was married quite young. I was barely – I wasn’t twenty. I was a month shy of twenty-one. We shortly thereafter moved down to the DC area. That was where I had stayed on at General Electric, and I was doing programming type of things at that time, paper tape punch, analyzing data that was collected, and things like that. I always had the good fortune of working with really generous people with their time to teach me things. Most of them were male. There weren’t really women in senior professional or even management professional areas at that time. But I stayed on and worked at Drexel, and that was my husband’s senior year in college. Then, when he graduated, we moved down to the Maryland area right outside of DC. That’s when I just stayed with General Electric. They had a subdivision or a subsidiary, actually, more accurately. That’s how I ended up with the National Weather Service. Immediately I was like, “This is so much better than nosecones.” [laughter] This feels so right to me.

MAG: Can you say what a nose cone is?

MG: So the missiles, which we sometimes use – well, we do use them now to fire the satellites to space, they have to have a cone; the top of it is the cone. There are various things about the tension and the carbon fibers and how much they can withstand the heat and the other forces on it. What the laboratories were doing – and I was taking their data – was measuring all of those things and analyzing it. So, what would be the most accurate, the strongest nosecones that would be the lightest ones so it would use less fuel type of thing?

MAG: Something you alluded to earlier in our conversation and mentioned in your notes was that, when you got to Drexel, you noticed that the male students really had had advantages in their high school experience. Can you say what made that evident, or maybe share an example?

MG: Well, when I got to our first classes, and the three of us were talking, we started to talk to some boys. “Where did you go to school?” “Oh, I went to Cardinal O’Hara.” I was like, “Oh, really? I went to Cardinal O’Hara, too.” We were taking Computer 100, and they’re taking Computer 130 or whatever. I’m like, “Well, how are you doing that?” He said, “Oh, we took that in high school.” I said, “Really?” “Yeah.” My mother was none too happy about that because, in her opinion, she paid the same amount of money for me as their parents paid for them. [laughter]

MAG: Did you feel like you had to catch up or prove yourself?

MG: No, not really. I had to catch up, but really what I had to do was develop study habits. That’s when I really had to get serious about that. I still remember my first computer science test. I think I got a thirty-seven or something. I immediately went to my dean or advisors and said, “Oh, I think I need to drop this course.” He asked me what I was getting in all my other courses, which were As or Bs. He said, “I’m not signing that drop slip. Go study.” [laughter] Which was the right answer.

MAG: If you had stayed at Drexel, what would have been your course of study and your major?

MG: I would have gotten to computer science one way or another, I think. That was just – it was a growing field, and it was still at the time – and this was very clear at Maryland – they were trying to separate out the business computer science, which they ended up calling Information File Systems Management, IFSM, from the really computer science, which had a theoretical basis to it, and was the basis of all communication software, and what we were using in numerical weather prediction and things like that. I'm sure I would have gotten into computer science no matter where I stayed. But I don't know that I would have gotten the nice blend with weather. It could have been any number of other things.

MAG: You met your husband freshman year. I'm wondering how you met.

MG: We actually met when public transportation went on strike, and they started forming ad hoc carpools so that you could get to classes on campus, so basically through a bulletin board, I think, is kind of how it went, or some meeting where, if you showed up, they tried to put you in a carpool.

MAG: What was his background? What was he studying at Drexel?

MG: He was studying engineering, electrical engineering. He had kind of a totally suburban background. They had never lived in the city. His parents were married later in life, so they had a little more. They only had two kids, not five kids, so a little better off financially there, but lovely people, everybody.

MAG: Maybe just clarify the timeline for me a little bit. So you took classes for nine months. Then you had this cooperative experience with GE. And then did you get married and return to classes part-time after that?

MG: Yes, exactly. That's exactly what I did. So I never went back until I was getting my last fifteen credits. I never went back to day school. I did everything else at night.

MAG: Was that because you were working?

MG: I was working, although I could have stopped working and gone full-time. I think I could have, but I didn't.

MAG: And the work was with GE?

MG: So it was with – when we moved to the Maryland area, it was a subsidiary of GE, which had a contract with the National Weather Service. Then, we moved to the DC area in like '76. By the end of '77, I had a government job.

MAG: Well, yeah, talk me through a little bit of that. So the subsidiary was MATSCO?

MG: Yeah, MATSCO. GE-MATSCO. I think they had formed it to become competitive in bidding on government contracts. So the National Weather Service at the time was trying to field a system that was called AFOS, [Automation of Field Operations and Services]. It was not well-named because it's not what it did. But it was a communication system. It was a network of mini-computers. I was brought in on one of those contracts to develop some applications. As a contractor – and this is much the same as it is today in the National Weather Service – you're sitting right there with government employees doing this work, so it didn't take me very long to figure out I'd be better off with a government job than staying with a contractor job.

MAG: Had you taken any meteorology classes at this point?

MG: No. That all was kind of the next step. At that point, I probably was maybe getting to the end of my sophomore year, credit-wise. That's when I really started to take meteorology courses and then some advanced computer science courses. I ended up having very few electives. At the end of the thing, I remember, when I was sitting down with an advisor trying to figure out the shortest path to graduation, I needed two things. One of them was going to be a geography course, which I guess they booked under liberal arts or something like that. Then I ended up taking a dance class because I thought it would be easy. It turned out not to be easy at all. But it's a long-winded way of saying I had an awful lot of credits in sciences – chemistry, physics, engineering – because I was an electrical engineering major for a little while, and all, so I ended up very heavy science-oriented course load, very light in liberal arts, just the minimum in liberal arts.

MAG: Can you tell me more about this dance class? What kind of dance was it?

MG: It was awful. It was modern dance. And it was my last fifteen credits, the only time I was going to day school. And I thought, how hard can this be? I should have just realized; I knew I wasn't terribly coordinated. Well, not that I'm not coordinated. I just don't have a great sense of rhythm. But I thought they were just going to teach you to dance. This would be good. Of course, those teachers were as strict as anybody else's teachers, so after the second class, she asked me if I was taking it pass-fail. I said, "Well, I guess the right answer to that question is yes, right?" And she said, "Yes." [laughter] So I took it pass-fail, and I passed.

MAG: Were you speeding up your degree because NOAA required it, or would it help you in your job?

MG: No, I wanted to get it done. I also wanted to get an advanced degree, which I never achieved. Well, the other thing I would say is I always had a sense that if I stopped going to night school, I might never finish. I didn't want to let that happen. I felt that I owed that to myself to get that done, so I was really reluctant. Even when my daughter was born, she was born in August; by the following January, I was back in night school again – working and back in night school.

MAG: Can you say a little bit more precisely how the position at NOAA came up? I understand you were a contractor. What was that project, and how did it turn into a federal position?

MG: So the project itself – my position didn't turn into a federal position. I just was looking around, talking to my boss, and saying, "I really would like to be a government employee." They were saying, "Yes, that's a good idea. We'll see if something comes up." Then I started applying to other agencies. All of a sudden, something came up, so they said, "Apply for this job," and I did and got it.

MAG: Were they looking for someone with computer experience and background?

MG: Yes, I think they were looking for that. But I also think, frankly, they were looking for diversity. The Weather Service – early on, the Weather Service director – and I don't know exactly when he took over – probably about '77, '78 – was Dr. Dick Hallgren, who's actually still alive. He made a real push for diversity. He's the reason, actually, those last credits actually got done during the day. I had been working on a project and had a chance to brief him. Then he asked me a few questions. He said, "You don't have your degree yet." I said, "No, no, I'm working on it, though. I'm going to night school." And *zoop-zoop-zoop*, all of a sudden, somebody's calling me up and saying, "Well, why don't you apply for this program? You can go during the day, and we'll pay you." So they were making a push. At the same time, they were also bringing people to the Weather Service. They had gone out and actively recruited both women and people of color that had maybe an undergraduate degree in math or something. They sent them to get a master's in meteorology and hired them, so there was a very conscious effort. We're in the '70s; civil rights is still a very active thing, but very committed leadership of the Weather Service. These people wanted to genuinely do this. They weren't checking a box.

MAG: What was your first official position with the Weather Service?

MG: I guess it was programmer, something like that. I was a programmer. And then, at some point, I moved to what was known as a physical scientist. That allowed more career growth there. Then I eventually went to a supervisory meteorologist. I had enough meteorology credits, even though I didn't have a degree in meteorology, to qualify for that classification.

MAG: I have in my notes – let me just make sure I get this clear – one of the first things you were working on was a verification system for the Weather Service. What did that mean? What was that?

MG: So what they were trying to do – this was so much fun – what the Weather Service used to do probably from the '50s to when this software I wrote replaced it – they would have these what were called mark-sense cards. You probably have filled them out in your life, where you color in the columns and stuff like that. So the forecasters, when they made their forecasts for high temperature, low temperature, a particular city, would encode this all on a card. They'd encode it on a card, and then they'd mail all the cards in [at] the end of the month, and then somebody has to take these cards and do this. As they put this network of computer systems in across the country, the idea was they could put this right on a screen. They could type it right into the screen. The data could be collected daily, instantly, and verification statistics could be computed locally as well as regionally and nationally. People would have access to this database. So the thing that turned out to be interesting about this – and I hardly could have picked a better way to learn the Weather Service, because what you were doing is looking at some of the most

important things and the services that the Weather Service produced and really understanding where they were produced, what measures of excellence there were, what was a good score and a bad score, and what things maybe weren't verified at all at that time. So, in addition to writing that software, I was given the chance to co-chair what was known as the verification task team, which was to look across the board at all of our services, what verification is being done, what verification should we be doing in the future, so a really comprehensive look. And that's where I got to learn things like our flash-flood forecasts didn't take into account any rainfall and just the state of where the science was. It was a pretty ideal way to work on things, to come to know an organization. It let me make a lot of contacts. The people on this task team were from all six regions of the National Weather Service, so you could understand the fire weather program, which was very active in the West and flash flooding that they had in New England and the problems there and things. It was just a great way to gain those experiences.

MAG: Was this something that Dr. Hallgren had asked you to do?

MG: He didn't name me in particular. I don't even know exactly how I got this job, except that I was good at raising my hand. So it was in the process of that task team when I actually met him. He didn't put me on it, but that's how I came to be on his radar screen.

MAG: I had read these verifications really served as a baseline to measure the modernization against. Can you say how or why? I think I understand.

MG: Well, I think as we were fielding – as the Weather Service was fielding this network of mini-computers, which had many problems – it wasn't all working the way it was supposed to work – people even then knew that that system wasn't going to take us very far. The technology was advancing too quickly, so by the time you bought these things and got them out of there; they were outdated, so we were starting to look at what would be the next generation. At the same time, there was a real recognition that the way the Weather Service had evolved – we had at the time around 440-some-odd offices. That number is approximately right. And many of them were understaffed or not staffed with professional meteorologists. A lot of them were associated with taking observations. At the same time, there was more automation coming about in weather observing, being able to do that. So there turned out to be this mix of technology coming in for processing and observing and a push to move the workforce to a degreed workforce, professional workforce, and a recognition that we didn't need 440 offices to do it, but we needed a smaller number of much better equipped, trained offices to deliver services. All of that came together in what was known under a broad title of the Modernization and Associated Restructuring [MAR] of the Weather Service, so we modernized and, at the same time, we restructured it. That turned out to be a twenty-year love affair, but basically, from the initial ideas to getting all of the hardware out the door and everything implemented, but the structure has stood the test of time. I suspect it will last a lot longer.

MAG: Well, I'm curious about the early part of that, the genesis for this idea of modernization.

MG: Yes. Well, lots of people smarter than me and older than me at the time were looking at this. And Dick Hallgren was a major one. Dick understood these things well, and he also understood how Congress worked and how the Office of Management and Budget worked. So

he's the one, with a lot of help from other smart people – I would say all men – [who] really kind of put the framework in place for that. But there was then a lot of heavy lifting to really sell the individual systems, to justify the expense of the systems. There were a lot of things to be worked out. If we were going to close an office, we actually had to do a lot of work with Congress on how we would certify that services wouldn't be degraded. That turned out to be a big deal. The people in West Texas or in North Texas, Northwest Texas, could they really count on an office in Oklahoma to deliver them a warning? Would that be good enough? So eventually, I really got entrained into a lot about how many offices, where the offices were, and what would be the process to commission a new office and decommission an old office. That's really where I got a lot of policy exposure, in all of that.

MAG: Was it because you were on this team, or had your role changed?

MG: My role changed. I think the way this went is I spent a long time – I spent not a long time, probably until – I was hired as a Fed in '77. I think, until about '81, '82, I was a programmer, so I wrote programming, and I did this verification task team thing. But then I moved into a branch that was known as the Systems Requirements Branch. That was a newly established branch. I was like a GS-14 in it, that was going to write the requirements for all of these new systems. How do we automate observations? How accurate does it have to be? What about this big new processing system, which came to be called AWIPS [Advanced Weather Interactive Processing System]? What are the requirements for that? What does it have to do? So I moved in and took over that work to write the requirements for that processing system called AWIPS, which I eventually came back and was program manager of, but I did that again in the same way, working across all of the regions of the National Weather Service and also with our sister agencies, the satellite service, NESDIS [National Environmental Satellite, Data, and Information Service] as well as OAR [Oceanic and Atmospheric Research] – all of those people. I worked across all of those organizations to develop a requirements document for those. I did that for a long time, maybe until about 1988. Then, at that point, I went over – I got promoted to a GS-15, and I took over a branch that was known as the Services Development Branch. That branch did a couple of things, but one of the main things we did was make sure that every new office we were opening and commissioning, that we had a plan for that, and it had been approved and signed off and everything. We did a lot of work for that. We were also responsible for if there was a new model that the national center was going to run; we had to handle the clearance and the notification for that. It put our branch right in the middle of new services coming online, so that gave me – really, I had a charmed Weather Service career because I just was in the right place at the right time. I stayed there until 1995 or so when I took over as program manager for AWIPS there.

MAG: What were some other first steps in the genesis of the MAR? The MAR is given a date range, like 1988 to 2000 or whatever it is. Was it really like that? Did it begin in earnest on a day, or was it more fluid?

MG: Yes, I would say the planning of it actually went back to the late '70s. In the late '70s, we were talking about something we just called "System Two." That was the only name for it. But I think those documents – trying to get the approval of how many forecast offices we would have in the future, we submitted a hundred and nine. We ended up with a hundred and seventeen

because various congressional people wanted offices in their thing because they cared about thirty jobs or twenty-four jobs. All of that actually happened in the first part of the '80s. But new technology running now, like a new set of radars, those radars are called WSR 88-D, and that stands for 1988, so they weren't really deployed before then. A similar thing with the Automated Surface Observing Systems, ASOS. They're also – they were rolled out late '80s and '90s, so the equipment, the time period you quoted, is a good time period for the development and deployment of equipment, but it doesn't cover the whole concept of the planning for what we were doing.

MAG: Something you said I think in Barry Reichenbaugh's interview was that there were elements of a verification system, but it wasn't very comprehensive, so what would those elements have been?

MG: For a long time, what the Weather Service verified was maximum and minimum temperature and probability of precipitation. They weren't verifying things like how much precipitation, like heavy precipitation, and there's a whole ceiling and visibility, which is very important for aviation. I can't remember exactly what they did before and after, but basically, we did a lot more. We also verified a number of the hydrologic forecasts, which hadn't been verified before.

MAG: Is that how the hydrology program was created?

MG: Well, the hydrology program long predated – I'll venture to say it long predates that. No, the program had been there. The thirteen river forecast centers that we have today actually existed back in the '70s. I think what's different, and I think probably much different now – I haven't looked closely at them – is there's more uniformity. Those were very much – we have the Mississippi River, and this is how we do things on the Mississippi River, thank you very much. And this is the whatever river, and this is how we do things. I think what changed as part of the modernization is a much closer connection between meteorology and hydrology. I mentioned earlier flash-flood forecasting was not really taking into account the forecasts of precipitation. But we needed to get the forecasts of precipitation amounts much better until it would be of value, so deploying those radars and some of that processing equipment really helped that.

MAG: You had said something about AFOS earlier. What was your particular involvement with AFOS?

MG: Just writing application programs for it, of which verification was one application.

MAG: I think, in your interview with Barry, you said you were ostensibly hired to work on AFOS.

MG: Yes. That's right.

MAG: How long did that last?

MG: I think that lasted until the early '80s. I was going to say '81, '82, something around that time frame.

MAG: Was that an opportunity to apply what you had been learning in your computer science degree?

MG: Yes, I think so, but I think the ball was really moving away from AFOS at that point. I was really attracted to what's the new big thing. What is it that we should be really focused on now?

MAG: Would that be AWIPS or something else?

MG: It became AWIPS. It became the overall modernization.

MAG: Well, I'm not sure what to talk about next. I think I want to understand better how the modernization unfolded vis-à-vis your role in it.

MG: Let me see how I could help here. I think as I said, that the concept of modernizing was something that was really developed by a few people knowing that we had to do something. I was not part of that at all. But when there came to be time to put more meat on the bones, if you would – for example, how many forecast offices should we have and how should they be staffed? We had to account for every individual in the National Weather Service, basically. My office director at the time was Dr. Ron Lavoie – he was the director of the Office of Meteorology. All of that work kind of fell to us to look at how the radars were going to be deployed across the country and to understand what the service needs were there. Where did we need to actually have a service hydrologist? Probably not in Reno, but definitely in Pittsburgh. So going through pretty methodically – I still remember the Excel spreadsheet line by line, every office, how it was to be staffed. Working that through, basically, we had to have holy water blessed on that, definitely through the whole administration and just about through Congress too. That was some of that early work that was done before systems were being put out the door at all.

MAG: Were you having to deal with any of the personnel pushback when these changes were being made or proposed?

MG: So I dealt a lot in my career, starting in the mid-'80s, with the Inspector General and also with GAO [Government Accountability Office]. Those were, I think, our two primary oversight bodies. We did enjoy quite a bit of Hill attention too, but justifying our staffing at forecast offices, so producing materials that would actually have what's their incidence of severe weather been and why is it we think the number is this number and not some other number to do them. So we did have a very basic cookie cutter. There were no offices that were less than this. But some of them needed more than that. Keeping all of that information – developing that information, organizing it, and being able to communicate it turned out to be really, really important. There were lots and lots of people working on this, so where the radars actually got sited, there was a lot of engineering work in terms of just where the beams would go and what it would capture. It was a tri-agency program with the FAA [Federal Aviation Administration] and

the US Air Force, DOD [Department of Defense], so we had to negotiate around those things as well – just lots of activity.

MAG: And who else were you working closely alongside with?

MG: So at various points, various people. There was a lot of work, as I've mentioned, that's happened with the regions. In the regions, the two areas that I worked with the closest, they would have a scientific services division, and so these people would have a lot of information on the science needs that are there, some of the challenges, and things like that. We worked with them. I started working with them with the verification program. Then they would have a meteorological services division and a hydrological services division. Those were really important in defining the requirements. How does this workstation actually need to work, and how would that be? We were working – I mentioned NESDIS before, so the satellite data was a tremendous volume driver for the AWIPS system, so synchronizing what that generation of geostationary satellites, which was a whole new technology for us, what that data looked like, which we couldn't afford to send all of that data to all the forecast offices, so what data did get sent? What was the map projection it was going to be shown in? We spent two years on map projections, I think. Then we used OAR. OAR did a lot of prototype work for us – do a quick mockup and, okay, here's how the workstation might look, and here's how the displays would look, and here's how you'd issue a warning. Eventually, in the AWIPS saga, we ended up really moving an OAR prototype. They had a program there called PROFS [Prototype Regional Operational Forecast Systems]. I don't know whether you've gotten any oral history on that.

MAG: No, I know very little. It came up a couple of times in your interview with Barry, and I didn't quite understand what it was. I don't think I heard it in my interview with Joe Friday.

MG: No? Yes. Well, somebody like – well, I don't know who, but I'll tell you because I was there. As we were starting to modernize the Weather Service, we developed a budget line, made the argument that look, we need to invest some money to figure out what our future's going to look like. We always provided money to OAR and asked them to do rapid prototyping. They created an organization called PROFS, which is something like Prototype Rapid Forecast Operations or something. It's something about that. You could use a random number generator for it.

MAG: I've got it here. Prototype Regional Operational Forecast Systems.

MG: Right. What they were doing was doing this development kind of quick and dirty, but they would run real-time experiments there, so for a month in the summer, during the convective season, they would bring in forecasters to use this system, and that would tell us whether this, in fact, was going to work. Were we bringing the data together in the right way, and was that going to be effective? So I think that was a big part of this. So OAR was a big part. If you skip forward to the mid-'90s, we had had a contract with PRC, which was subsequently bought by Litton, which was also subsequently bought by somebody else, but I don't know who. I can't remember who right now. We ended up substituting a lot of that OAR software for what Litton had been developing because it was better. It was a better capturing of what we needed. It was a

controversial decision at the time, but it was the right decision. It bore out to be the right decision.

MAG: And was this a technology – I think you shared an anecdote about going out to Boulder and having people in forecast offices really try this technology out?

MG: Yes. That's exactly right. That's exactly right. We would send people there to really pretend they were forecasting and issuing warnings and things like that.

MAG: And the other thing you pointed out in your interview with Barry was this was an example that you didn't often hear in terms of the evaluation of the MAR. People talk about how the people were a little bit fussy about new technology and adapting to change. [Telephone rings.] Do you need to take a break?

MG: Let me see who this is. I'm ready for a two-minute break anyway.

MAG: Okay. [Recording paused.] What Joe Friday talked to me a little bit about was just some grumbling from the employees about either having to move or change or adapt to new technology. You point out in your interview with Barry that this PROFS system was a really good example of the employees wanting to embrace new technologies.

MG: Yes. So a couple of things – if you take two steps backward, what we were doing at the time – I mentioned before we had – I don't know what the exact percentages are, but we had a lot of people that were trained as technicians. What we offered people was education. We would pay you to do this education, to get your qualifications up to really qualify as a meteorologist. Some people did not want to do that. That was one aspect of it. We didn't lay anybody off. We didn't fire anybody. We actually stopped hiring these kinds of people that we didn't want, and we let the runway ramp down. The other part of it, though, was going from the four-hundred-some-odd offices to a hundred and seventeen or nineteen, whatever the number is. That really did require people to move. Not only that, but we put out the word that our future meteorologists in charge need to have some headquarters experience. You don't have to come to DC. You could go to a regional headquarters. But you have to have some experience. So we actually paid a fair amount of money to have people move around the country to get these experiences to eventually end up as a meteorologist in charge someplace. I think it was one of the – it created a really vibrant workforce. I used to have working for me when I was chair of the Services Development Branch, about two or three of the future MICs. They would come to work for me, and then, like three months later, they'd wander into my office at 4:30 in the afternoon, and they'd say, "I never knew you worked so hard at headquarters. I had no idea you did so much work." [laughter] Similarly, they really helped us because as we were doing our things, they said, "No, that'll never work that way. You have to do it this way." So there was a lot of churn, but of course, with that comes a lot of disruption to family life and those kinds of ties. I think what saved us, in the end, was how long it stretched out. People then made conscious decisions. To be qualified in the radar, to actually run the radar, you needed to have four weeks' worth of training in Norman, Oklahoma. So I knew personally a lot of people that said I'm going to wait until the last possible moment, and then I'm going to retire, because I'm never spending four

weeks in Norman, Oklahoma. That kind of thing did happen. But I think that's when we were transitioning really from a World War II workforce to a college-educated workforce.

MAG: With those changes, were you also seeing – you talked earlier about Dick Hallgren's efforts to diversify the workforce. Were you seeing that come to fruition?

MG: Not the way we would like. I'm glad you mentioned that. So one of the things that I was involved in – we had a series of diversity workshops in NOAA in the '90s, and it was under the Clinton administration. When Jim Baker came in to be administrator of NOAA, I had the pleasure to co-lead with Sylvia Graff the women's diversity workshop. It was like the first time ever we brought together probably a hundred and fifty women from across the United States that worked in forecast offices and regional headquarters to really talk about issues and things. It was maybe what you would expect. It was much harsher than I thought because I hadn't really suffered any abuse. In fact, if anything, I felt like I got kind of a lift. People wanted me to succeed. But a midnight shift is a really lonely place. If your coworkers choose to lock you in the restroom, they can do that or, if they want to draw a penis on an upper air balloon so that, when you go to inflate it, you can see it, they do that. So it turned out to be a really eye-opening three days for this. We tried to identify a number of barriers, and I think we didn't really – our pipeline is poor, and it's been poor for a while. I think, in the 2000s, that's picked up a little bit with Louisa Koch's educational partnership program – I think it is making a difference. We've been able to attract more women, particularly through things like Sea Grant and some of the other things. But if you just look at a straight-up forecaster, the numbers aren't good there. So we had a series. We did one on women. We did Hispanics. We did Blacks. We did disabilities and things like that. We rolled that into a whole survey feedback action initiative, where we tried to really look at how working organizations – how they're working, what are the sticking points, and things like that. I think some good stuff came out of that. We also did do – we created the Leadership Competencies Development Program. I don't know whether Louisa talked about that or not. That came about around 2000. It was about trying to nurture a next generation of leaders. We've had a strong focus on diversity in the selections going into that. I think that's helped.

MAG: You've mentioned Louisa a couple of times. What opportunities did you have to interface with her?

MG: I had two distinct – or maybe three distinct phases now with Louisa. So the first time I met Louisa, she was my OMB [Office of Management and Budget] budget examiner, and I was the program manager for AWIPS. She's a sharp cookie, so she had some tough questions there about why we needed as much money as we needed. But not long after that, Jim Baker hired her, and she came over to be the deputy of OAR. When I went over to be the deputy of NESDIS, it was the first time ever, first of all, that I had a group of colleagues that all had very similar jobs to mine. I'd never had that. It was the first time ever I really had a colleague that was a woman that I could be kind of friends with and understood my challenges and problems and all, so she was a big asset, and she's still a good friend.

MAG: Yes. She's wonderful. That training – what changes were made afterward, if any?

MG: The Leadership Competencies Development Program?

MAG: Yes.

MG: Yes. So I think just establishing that program, which runs through to today, where people are given – it's a program that lasts eighteen months to two years. You're with a cadre of people. You have mentors and peer mentors. It starts from really an analysis – a 360 [degree] analysis of yourself. Then part of it is there's leadership opportunities. So, in addition to diversity, the other thing we pushed in that program is crossline office interaction. I would say, for the whole first part of my career, NOAA was quite stove-piped. You could just have your whole career in Fisheries and never talk to anybody in the Ocean Service. That was certainly true in the Weather Service. This has made a lot more crossline communication. Admiral [Conrad C.] Lautenbacher and his leadership of NOAA from 2000 to 2008 really pushed that aspect of it.

MAG: Was that the same meetings where the women were talking about experiences they had had in the workplace?

MG: No, those were just one-off workshops. Those were one-off workshops. There are reports that have been published on each of those.

MAG: Were those stories surprising to you to hear the encounters that women were having?

MG: I think they were painful to listen to. Yes, so I think I was kind of taken aback. But I wasn't a shift worker. I think that's what I really came to appreciate is, after six o'clock, the workplace really changes. It's especially different at 2:00 a.m. I ended up managing operations like that when I was a deputy at NESDIS. You really had to focus on what's acceptable and what's not acceptable and hold some really strong lines on that, so I remember Scott Gudes was the deputy undersecretary when Y2K happened. He wanted to come out to the satellite operations center and bring champagne. I said, "You can't do that. I spent 364 days a year telling these people they can't drink on the job. You're not giving them anything to drink. You just can't do it." [laughter]

MAG: Was this an area where you saw things improving?

MG: Yes, I do think so. I do think so. But I know that the Weather Service, I think, still had some hard conversations about really how comfortable marginalized communities and people of color really feel. As I've focused on this a lot in my recent work at the American Meteorological Society, I think we have done a lot of things that kind of make our culture and processes tolerable. But we don't make it easy at all. That's kind of what some of us have been really hammering on, that we need to have more of an institutional review of policies and procedures and really challenge them. We've done a few things at AMS that I'm heartened about. I think Louis Uccellini has been focused on that at the Weather Service. But we have a long way to go. A long way to go.

MAG: In terms of the technology, when did you start seeing changes in forecasts and lead times improve?

MG: So they improved almost immediately when the radars went in. The radars went in first, and then when we brought AWIPS in, and the forecasters were able to more easily deal with things, there were some pretty dramatic ones. I think May 1, 1997, I think, or '98 – I forget which year – Norman, Oklahoma issued like two hundred and fifty warnings in a shift, which they would have never been able to do – very precise warnings on what things are. Joe Friday would say that a number of people tried to kill the radar program seventeen times. And as soon as it was fielded, everybody was like, “How did we ever live without this?” It was dramatically better.

MAG: Are you referring to – there was an actor that was frustrated about a satellite going into some neighborhood. He was worried about radiation, I think.

MG: Oh, that sounds like Larry Hagman?

MAG: Yes.

MG: Joe Friday must have told you that story. Yeah, he had a lot of experiences. Yes, well, people don't like the way the radar looks. We had to do a lot of work because people assumed that there were bad radiation waves coming out of it. But I think it was a big deal for a while, and then that settled into nothing, which is what it should be.

MAG: Yes. I was surprised by the kind of PR that Joe Friday had to do. He explained that he was on the Montel Williams show at one point.

MG: Yeah, it was kind of questionable whether that was the right PR strategy, but he was. [laughter] Yes, I think all these kinds of things take a lot of outreach. If you go to the Pittsburgh forecast office, you land at nice Pittsburgh Airport – very nice – and then you get to the forecast office, it's actually almost in a neighborhood with an elementary school across the street and split-row homes down this side, and the radars in the backyard. And Dr. Theresa Rossi was the meteorologist in charge there through the modernization. She said, “I served a lot of tea and cookies.” She just educated a lot of people about what was going on. Everybody knew what was going on. She was everywhere, making the case for what they were doing. They didn't have a peep of problems there. Larry Hagman, looking at the other side of the mountain, just didn't like his mountain view – I think he didn't like his mountain view being obstructed.

MAG: I think you said in that interview with Barry – it was only four pages, but there was just so much meat there –

MG: What was the year of that, do you remember?

MAG: 2010.

MG: 2010?

MAG: Yes. And you explained that it was really Dick Hallgren and Doug Sargeant who had this vision. I was curious. I don't know much about Doug's role and his vision.

MG: Doug was the director of the Office of Systems Development at the time. I would say Dick was – well, it's not right to cast them into different roles. I think they were working closely together. I think a couple of other names I would put in that list – I would put Lou Boezi in that list. I would put Joe Friday on that list because Joe was Dick's deputy for a while. I'd also put Ron Lavoie, who was my office director and then Jim Rasmussen. So all of those, who were all about of an age, fifteen years older than me, were the ones that were really putting the concepts together and really moving things forward. I should probably add that Walt Telesetsky was the director of systems operations at the time. So there was just really a lot of thought and everything that went into and evolving that process and figuring out how we could actually sell it to Congress and get it funded and those kinds of things.

MAG: How do you think those folks would compare their vision for the modernization with the ultimate outcome?

MG: I think pretty favorably. It all took longer and cost more. But probably anybody could have told you that in the beginning. So the thing I said – I watched FAA through my whole career. I spent a little bit of time monitoring their systems development and stuff like that. Even take the post office – organizations that really have never modernized. I think what we pulled off was really pretty significant in restructuring and modernization. At the end of the day, everybody essentially was happy.

MAG: Maybe you don't know this, or maybe this isn't the right question to ask, but do you know why Dick Hallgren stepped down when he did?

MG: I don't know that. He went over to be executive director of the American Meteorological Society, so he didn't step out of things at that point but stepped away, so I'm not really sure. He had done a number of things. He had worked for IBM, I think, at one point. So I'm really not sure why he left when he did, although he was eligible to retire, so it wasn't like he left before he retired. He retired and then worked another ten or twelve years there. It does take a lot. By the time I retired from NOAA, I was pretty exhausted, is what I would say.

MAG: Yeah. It sounds like long days.

MG: Some of these jobs are tough. Yes, some of these jobs are tough.

MAG: I had just asked that because Dick Hallgren seemed to step down as the modernization began.

MG: Ye, I would say Dick helped the modernization a lot from the outside, though, in a number of ways that he couldn't have done internally in terms of influencing Congress and the Office of Management and Budget. So I think there was a lot going on there as well.

MAG: What was your working relationship with Joe Friday like?

MG: Very good. Very good. I liked working for Joe. I found him a really – well, all of these people, I think, were very easy and approachable and supportive there. I watched Joe really get beaten down by the job. I don't know whether he told you this, but probably a year before it happened, he said, "I'm going to get fired out of this job for trying to do the right thing." And that's essentially what happened. [laughter] I think people were pretty dedicated. People landed on their feet, but it was hard.

MAG: I think you also talked with Barry about some of the challenges of the immense amount of data ingestion and how to manage and handle that.

MG: With AWIPS, you mean?

MAG: Yes.

MG: Yes. I think that was really a challenge. I alluded to this briefly before. But we had all of this new satellite data that none of us had ever really seen before. We couldn't send everything to the field office. There's just too much data there. So we had to make some decisions about what products we would push forward through the thing, on what scale, and how they would be displayed. We had this volumetric radar data and the same type of thing – how we would do the refreshes with that and all of those things. We were trying to make things so that forecasters could be sitting here with three displays and really be able to manage quite a bit of stuff, so it was really human information processing kind of things that we were kind of – I think it's fair to say we were on the cutting edge, if not the bleeding edge, of some of that.

MAG: How did your role change when you became the program manager for AWIPS, and what was your purview there?

MG: So my purview there was really up and out. Once I became AWIPS program manager, I basically devoted almost all of my time to communicating up to NOAA, the Department of Commerce, OMB, and the Hill about what was going on. I spent an incredible amount of time with GAO and the Inspector Generals about what they thought we should be doing and things like that. I spent time with our prime contractor in trying to do things. That was really where I went from managing a team of nine people to a very large operation with lots of money flowing through. I had good support. For the first part of when I was there, Dr. Diana Josephson was the deputy undersecretary at NOAA, and so she's a woman, which was great. She was, I think, very supportive. NOAA had formed what they called a Systems Program Office. They took all these programs out of the Weather Service, and they put them in this other office. And Joe might have talked about this. Did Joe Friday talk about this at all?

MAG: He probably did. I don't remember, though.

MG: Yes. Well, they created this Systems Program Office. What happened is you had the director of the Weather Service here but who had no real authority or control over the systems that they were relying on to produce forecasts, so we went through a couple-year period until it

was agreed that the Systems Program Office would be disbanded. That's when I took over as program manager at that point. At that point, the program was well behind schedule. That's when we signed up to a congressionally mandated cap that we would finish the program for a total of four billion. We did a lot better than that when all was said and done. But lots of wailing and gnashing of teeth. Secretary [William] Daley – I was in his office more times than I care to think about at the Department of Commerce.

MAG: Well, I have a few more questions about AWIPS, but I'm wondering if we should actually stop now so you don't feel rushed.

MG: Yes, I think that would be great, Molly. I'd appreciate that. Then I'm happy to schedule something else, as you have time.

MAG: Sure. I'll send you an email with some possible dates. I know you've got a lot going on right now.

MG: Yes. Okay, that's fine. Just let me know.

MAG: Well, Mary, I'm so glad I finally got to meet you. You've given me a lot to think about and ask about for next time.

MG: Okay. Sounds good, Molly. Take care.

MAG: Thank you so much. Bye-bye.

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Reviewed by Molly Graham 2/3/2022

Reviewed by Mary Glackin 3/14/2022

Reviewed by Molly Graham 4/24/2022