

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE

AN INTERVIEW WITH KEN GRAHAM
FOR THE
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ORAL HISTORY COLLECTION

INTERVIEW CONDUCTED BY
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TRANSCRIPT EDITED BY
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(Transcript slightly edited for clarity)

Greg Romano: Good afternoon. This is an oral history interview with Ken Graham, director of the National Weather Service. The interview is taking place on Thursday, September 8, 2022. The interviewers are Greg Romano and Mary Fairbanks. It's a remote interview with Ken in Silver Spring, Maryland, Mary in Columbia, Maryland, and Greg is in Buckeye, Arizona.

So, Ken we're going to kick this off really talking about the early days, going back to when you were a kid. What I wanted to dig into is what really got you interested in meteorology and how did that evolve as you, as you went through your early schooling, and if you would, as part of this, just give a little sense of where you grew up, your parents, siblings, and all that kind of stuff, because it helps to provide context for who you are.

Ken Graham: Well, I grew up not too far away from where you are, Greg, actually. I grew up in Phoenix, [the] west side of Phoenix, Litchfield Park. It's interesting, because I have one brother, and we lived really out in the desert, honestly. Now, it's in the middle of a city, but at the time back in the '70s, it was out in the middle of nowhere, basically. So you had a really good view of storms, lightning. I could see forever. I could see the lightning. I could see the -- I could see the storms come in, and I remember at an incredibly early age being so fascinated with the summer monsoons where it would be so hot outside, and then the wind would pick up. And then you would see this big wall of dust that would come through, and you'd, there was a certain smell, right, that the dust smells like something, and it's just an interesting, unique smell. I can still smell that today. And then the rain is coming, because in Phoenix, you smell the rain come in. Before it starts raining, there's a certain smell that comes in. It's so interesting to look back at that 50 years later, practically, and still remember those smells. And then the rain would come, and I remember seeing the hail piled up and how the temperature dropped from about 115 to maybe 70 [degrees]. And so, there was a fascination.

People don't think of somebody from Arizona ... being so fascinated with the weather [early on]. But it's not always just hot, right? There's quite a variety of weather phenomena. So, Greg -- at six or seven years old I was taking observations every day and putting those observations on my calendar. My mom and I still talk about it today. She was like, yeah, you were just so interested in the weather. I didn't know I was interested in weather. I just thought it was just really amazing and cool.

And there was a time around 1982 that we were evacuated several times from our home, and ... it was interesting because it was flooding. It was water, and it was just a -- the Agua Fria River and the New River were flooding, and one of those events took out the bridge somewhere -- and I'd have to look back. It was south of Camelback [Road]. It was somewhere around McDowell [Road]. It might have been the bridge at McDowell Road was taken out, and the two rivers became one. There was a chance that we were going to flood, and we were evacuated. So you never forget that.

So looking back at, looking at the old set of encyclopedias from, they were an old set of

encyclopedias from the 1950s, actually, they were my great grandpa's, my great grandpa's encyclopedias. I looked at those, and I looked up where that moisture comes from. I looked up why it would flood and got so interested. And this was six or seven years old, and it really hasn't stopped. The Earth has always been my favorite planet, still is today, and so, Greg, it was early on that I really got fascinated with weather.

GR: So, you got started, thought about it when you were six, seven years old. So you go through grade school, junior high, high school. What did you do during that time to sort of feed into this, this interest in the weather and what was going on?

KG: Still didn't connect. Didn't connect it to, didn't connect it to a profession. Still didn't connect it to meteorology as a profession, but what I did was, it was science, Earth science, specifically Earth science. It was still related. Like, there's the weather section of your Earth science class. I loved this. I was so into it and really went the extra mile when it came to any sort of project or any sort of homework assignment. So, but any one of those, and a class that, that looks at latitude and longitude. Maps. Greg, every Christmas I asked for another Almanac. I asked for another Rand McNally Road Atlas. I wanted every update. The old one, I didn't want. It's a new one. I want the new map. So anything map-wise. Anything Earth-science wise. It was, it was amazing just looking back at it today, because you don't -- until you do these type of things, you don't think about it very much. So, yeah, it was like the maps, and there was, there was a school project. It was amazing, and it took sun angles. It took sun angles. It took -- you'd find out the time of the year, and you were given all these parameters, time of the year, the sun angle. You were given some other parameters and said, you're lost, somewhere on Earth, you do the calculation and tell us, the project was tell us where you are. I said, you got to be kidding me. Are you serious? It was the greatest thing I've ever done in my life. So all -- sun angle, the season, everything. I took all this data, and I came up -- I was the only one that came up with the right answer, and I was, I thought that was the coolest thing I've ever seen at that age.

Anyway, I actually -- you don't even remember this stuff until you do things like this, Greg. It's funny. I forgot about that, but yeah, that was amazing to me.

GR: And when did it click that you could turn this into a career? Was it when you went to college?

KG: Yeah, I think it was college. I think you got to college, and yeah, I think from an early age I actually, there were times I kind of wanted to be an optometrist. It was all about lenses. It was all -- I don't know. It all kind of relates type of thing. It was really kind of strange. And then, yeah, it was in college. There was a meteorology department, and I went in and talked to some professors, and I was like, okay, I'm going to take, I'm going to take 101. It was meteorology 101.

Oh, gosh, it was amazing, and I loved every second. I've read the book from front to back, and I said, this is it. Once I took that class, I said this is it. This -- I can't believe there's -- I can get a degree in this. So, think about that. Even in high school, I wasn't even familiar that you could get

a degree in it, which is kind of weird, I guess, but I was definitely all about the science. But, yeah, in college, when I said I could get a degree in this, I can work at the Weather Service, I could do television, I could do all this other stuff. I said this is amazing, and it was in college, University of Arizona.

GR: Okay. So after college, you graduate, I'm assuming you did pretty well.

KG: Yeah, I mean, look, it -- so it was interesting undergrad. It was all about equations. It was all derivations, equations. It was great. A good, strong science background, but I wasn't, I didn't understand -- I didn't really realize I wasn't connecting things like the human part of the job, the people you serve. I wasn't connecting that... Wow, a warning for bad weather saves lives. That connection wasn't quite there, right. It was -- and the science, and the science was great, right. You got to have that. I couldn't even read an observation. So, I got the science down, but there was some real-life, practical things that I still needed to learn. So I got recruited several times, phone calls, letters, everything by, at this time, Mississippi State. They were starting something new. They had a concept. They had a concept of, let's take folks that are doing meteorology, weather on television, and let's do an off-campus degree. They had this interesting idea. So, I said, wow, that's really cool. I can relate to that. Communications and that sort of thing. So I said, yes.

So, I packed up, I packed up everything I own. It was interesting. This was 1992. Interesting enough, Greg, my dad passed away in May 1992, several weeks after I graduated. He held on to when I graduated. So it was tough. So you're going through that, packed up everything I own, and I -- it's fun to record this. So I tried to get some of the proper nouns. Like it was a Chevy Lumina two-door, packed up everything I own in that blue car, and never in my life was I east of El Paso, Texas. So past El Paso, drove across Texas, and by the time I got into east Texas and into Mississippi, Greg, I never felt dew points like that. I just never felt dew points like that, and I remember going into the department head's office for the first time, walked over there. I was dripping on the floor. I was like, I don't know what this is. This is crazy. This is supposed to evaporate, and I'm supposed to feel cold by now, but I'm not. So, I just -- wow, these memories, it's funny telling the stories, the memories come back.

So, anyway, yeah, it was an incredible experience. Got a job on television in Columbus, Mississippi, so I did that on the side. Noons. And then there was an opportunity, the chief meteorologist had some other things going on in life, and I was able to cover for some of them. So I was literally going to graduate school doing the, like the five, six, and 10. I think at the time it might have been six and 10, plus the weekends. I was doing tons of TV shows. It was like 50 bucks a show, by the way, so I was rolling in it. I was happy. And then, also, to pay tuition, I was teaching elementary education majors physics, doing the lab. So it paid for the tuition. So anyway, that was amazing. So went to Mississippi State, and then before I joined the Weather Service.

GR: So part of your experience in college put you in front of a lot of people. You're doing television, okay, in Columbus, probably not the biggest market but not the smallest market.

You're teaching elementary kids. What age group were you teaching, and how did that -- so you're talking to a lot of people, and today, you're well-known as one of the biggest extroverts, that's the word I'm looking for, in the Weather Service, but also within the community, and were you always this comfortable talking to large groups, and did that help? Did it shape who you are?

KG: Yeah, and it's interesting that the teaching -- they were actually college kids, Greg. They were elementary education majors. Think about that.

GR: Oh, okay.

KG: So these were -- yeah, it's interesting, and the reason I brought that up right away is because it was a unique ... a couple things. So that was a unique challenge because they really were interested, in that case. So it was an incredible challenge to be able to say, I'm going to find ways to communicate differently, to make what I have to say exciting. So it was experiments. It was giving a list of chemicals and mix them together and pour them out on a foil sheet, a flat sheet. Let that dry out, and then we did a lecture. And then afterwards, I walked over to one of them and looked at this brown mass, it had hardened up and stuff, and I took a big bite out of it. And it just horrified the entire class. It was peanut brittle. So, I -- it was finding ways, it was finding ways to communicate differently.

But it was also on television, because you had to make it understandable. And I've told this story before, and I want to answer the question, so no, I was not always that comfortable because before every single TV show there was sweat pouring down my back, nervous. Giving presentations, just definitely not comfortable, but I think, I think when you do it, you're kind of forced into it, but to make a career out of it, yeah, now it's absolutely very comfortable to do that thing. But I mean, what an epiphany and, doing that at the TV station. Remember, it was all about science. It was all about ... it wasn't the communications part, and doing television, trying to figure that out along the way. And I have video of this if you ever want to see it. It's really ridiculous, but trying to teach while doing those -- doing the television on air -- doing meteorology on air, and drawing on equipment that really wasn't supposed to, wasn't made for this, drawing, like talking about heat and having a smiley face on there and how happy you are, and then actually filling it in red, with getting hot, and then an unhappy face to talk about heat exhaustion. It was so cartoon and so rudimentary. It wasn't even built to do what I was trying to get it to do, but I did. And the anchors were laughing so hard. I remember the news director fell out of his chair laughing, and I was just trying to teach and just trying things.

Anyway, those experiences I think were instinctive trying to do that, but it was a wake-up call during a big tornado event that it was still all about science. There was an air of arrogance, I think, because I had the science, because I was on television, and it was the first -- I was kind of nerdy my whole life, right, and then for the first time in my life I go to a grocery store, and somebody recognizes me. Or I go somewhere, and somebody wants an autograph. You got to be kidding me. Or people come up while at dinner. You're on, you're the television. So there was actually a little air of arrogance, right. So there was a big tornado event, and I was

cherishing wall to wall, wall-to-wall coverage. I was on air, doing my thing, and then I'll never forget the reporter, off to the side, while live, by the way, saying [whispers] "Ken, you got a phone call, psst, you got a phone call." I blew the person off. I like really pushed my hand below, and , basically said go away, which is not my character. It's really interesting. I was probably, what, 24, 25 years old. And so, they were persistent. I finally went to commercial and then took the call, and the person on the other line was basically nervous. The gentleman was like, "This is where I live. I live in this county. I'm watching you. It looks like there's a tornado warning." Back then it was not polygons. It was county by county. Their county was in, in the warning. I said, "Well you're in the tornado warning, and to be honest with you, from what you've told me where you live, you need to take shelter." He goes, "Well, I live in a mobile home. I don't know what to do." I said, "You need to get outside. You need to get outside in a ditch, cover your head. You don't want to be near that thing."

So, anyway, I didn't think much of it. It still didn't click at all. And then, I don't know, it's a blur. Parts of it were a blur. It was hours later. Obviously, when I tell the story, I usually say like an hour, I don't know, it could have been hours later. They come back. You've got a phone call. I blew the person off again. And finally, I took it, went to commercial, and the same gentleman was on the phone. Greg, the person was shook up, very upset, and said, "Hey, Ken, I'm alive." Well, all right. That's good. He goes, "No, you don't understand. I took my wife and all my kids. We all got out of the trailer, got into the ditch, and the trailer got hit. It's gone. The trailer is gone." And Greg, I don't know, man, that was quite an epiphany. I resigned, resigned from the station and put lots of applications into the National Weather Service. This was in 1994, and then got three offers, two in Montana, one in New Orleans, Louisiana, and I said, "New Orleans is pretty close. That sounds fun." So I took the New Orleans job in 1994. That was late July, August 1994, I showed up on the doorstep, yep.

GR: All right. So, you start at the New Orleans weather forecast office. Now this is 1994, sort of the tail end of the MAR, the Modernization and Associated Restructuring that was started in the 1980s, and was New Orleans at that point, was it a full weather forecast office under, in the spirit of the MAR, or was it transitioning?

KG: Yeah, it was the old NWSFO.

GR: Okay.

KG: So it was the main office. You had, they were called WSOs, Weather Service Offices, like in Baton Rouge, Lake Charles, Shreveport, so that was the central office for all of those. So, yeah, it was a big office. It was full of, yeah, upper air office. It had a equipment in there that I've never seen before. I got stories associated with my first impressions walking in the door there. But, yeah, it was just, it was amazing. Big office. A big office, and I was excited to be a part of it.

GR: So tell us some of those stories. What were your first impressions? Here you are, you've just been doing TV. You've worked through a big tornado event that was really impactful to the community, but also to you as a person because you had that touchpoint with that gentleman.

So you walk in the door, and what were you're, oh, my god, what did I just walk into?

KG: Yeah, it was pretty shocking. I mean some of it was from an equipment standpoint. I mean at the TV station, you could draw things. You had a tablet and a pen that was connected to it. You can draw fronts. You could draw things like smiley faces, that I embarrassingly drew. So, yeah, you could draw things. You had equipment. I could see fronts. I could see observations. I could change the colors of those observations. I could see stuff. I mean the models were pretty interesting to look at as well.

So, I get to the Weather Service in 1994 in New Orleans, and there's something called AFOS. It was built by Ford Aerospace. It was this big blue beast. Every computer in there was blue, the same light blue, and it emitted all sorts of noise and heat. At night I would go home, I could still hear the hum of those old computers. There was carpet on the walls of those Weather Service offices to dampen some of the noise. And some of that carpet exists today, by the way. So if anybody goes to visit an office and you see carpet on the walls, that all came from those days, and it kept you nice and warm on a midnight shift too, by the way. All that heat.

So, yeah, there were buttons, Greg, like satellite. I would push satellite, and nothing came up. I was like, well, that's interesting. Nothing. They were black and white monitors. A lot of the buttons didn't work. They said, well, for satellite you got to go back over here. It's a different piece of equipment. There's this giant thing, it had probably 30 buttons on it, and only two of them worked. They were the only two blinking, and they were like those are the only two that are going to work if you want to see satellite. Well, this is interesting. It's called SWIS. I don't even know what it stands for. And then there was micro SWIS because that didn't work well. So somebody came up with something micro SWIS that had a few other satellite-type things, nothing integrated. You couldn't, when you hand typed forecast, you had to hand type everything. If you went beyond five pages, you'd lock up the system. So, that was kind of interesting. If two people print at the same time, you would lock up the system. So on every shift you would hear "printing!" So, you'd have to yell out "printing" so nobody else would print at the same time. I mean this is, it's interesting.

Big giant maps. I'd have to fill the ink. You'd have buckets of ink. You'd have to pour it in there for them to print out those big maps that you would analyze of the Gulf of Mexico. You would hand plot all the observations. All the marine obs weren't on the maps. So you had to print them out, decode them, and actually write the observations on a map.

Weather radio back then, Greg, everything was, you had to record. I mean it wasn't automated. It was your voice. You had to go record. I think you've heard it, the story of coming from broadcasting, going to the weather radio and saying, "Hi, this is Ken Graham, National Weather Service New Orleans. This is NOAA Weather Radio. Here's your forecast..." and having a hand get really close to my face and hit stop and said, "You can't talk like this, this is the government."

So, yeah, the first few weeks of training, it was pretty interesting. The upper air, everything like that, was just absolutely amazing. And the other story, I don't want to lose, it wasn't just that

tornado event that really wanted me to go -- something happened just before that as well. There was a -- tornado in Columbus, Mississippi, and there wasn't a warning. So I called the Weather Service and said, "Hey, there's a tornado." They were like, "Well, let me look." Okay. This was back -- this was a long time ago. We're not like that now, right. So, "Let me look. I don't see anything." I'm like, "Well, I do." "How do you know?" "Well, we've got cameras on the rooftop right now broadcasting live on this thing." So, anyway, it was a missed event. I think they eventually put something out. But they came over. We showed them our equipment. They were like, this is pretty good. We had some discussion. It was a big group for the weather service, and then it was our turn to go to the weather service office. It was fine. It was very defensive, a little bit, whatever.

And then, I asked a question about the upper air equipment. I don't know if you've heard this story, Greg. So, I asked a question about the upper air equipment. I said, "What is all this? This looks pretty amazing." There's gauges and, oh, man, needles, and -- it piqued my excitement. They said, "That's classified." [Chuckles] That happened a long, long -- that was probably -- who knows? That's probably '93 or somewhere back in there. But anyway, that happened, which was pretty interesting. So just a series of things. I'm joining up, I'm joining the service, I'm joining the Weather Service.

But anyway, those were my first impressions of the office and, I think ever since that point, just on a crusade for service, right, on a crusade to make sure the science is understood. To make sure it's actionable. And, just a -- I don't mind change. I think change is healthy, and I think my whole career I've tried to make positive changes along the way.

GR: Speaking of change, you relayed in one of your recent videos, I think it was one of your All Hands videos, when you were talking about your priorities and actions for the future. You relayed a story about presenting an idea for weather information to people through this new thing called the internet and maybe even getting it on your phone, and you were shut down. Okay. And again, for putting this in the context, we're talking about the mid-1990s, right. And I too remember those times where, the earlier internet, looking for things, and just going, oh, I can get it faster on the phone. But anyway, walk us through the idea, how you came up with it, what happened when you presented the idea to management. And if you can, just sort of relay your thoughts at the time.

KG: Yeah, I mean, you go back to the '90s, the internet was brand new. The first time I ever saw the internet in my life was at a Weather Service office. The first time I ever saw an e-mail in my life was at a Weather Service office, and only management was allowed to have e-mail at the time. It was brand new. It was brand new. I was like, I want that. I remember the e-mail address being assigned to everybody, right. You got a piece of paper, something in the mail that was talking about here's your first e-mail address.

I mean it was just funny to look back at some of that, but it was also the first time a lot of people in the office ever saw the internet, and there was some usage of the new technology for good, science, and looking at things, not easy to find things. There was also some usage of the

internet that probably shouldn't have been in the office, but it was just, it was just, that was, that was the beginnings of the internet. It was just really interesting to look back at it today. So, yeah, started to have -- back to a crusade, right, back to the service crusade, and I was so into how we communicate with the public, how the warnings get out, how we get the information to the media, emergency managers. So I did surveys, and some of this was a part of some of the master's work as well, and how do you get information. So, getting information, I go out. I receive it on television. Do you have a weather radio? Yes or no. It was a big survey of information, so I was so proud of it. Man, I -- Greg, I made all these graphs and charts and bar graphs showing all this information.

With my own money, I went to a place that can turn those into slides. It was before -- there's no PowerPoint, right, so I turned them into slides so I could give this presentation. I gave it at the American Meteorological Society, AMS. I gave it at the National Weather Association, NWA. I was so nervous. At the AMS in Dallas at the time, I met the, at the time, the current, the Director of the Weather Service. It was Joe Friday. I remember meeting him for the first time at that meeting, telling him about my project, and he was so encouraging. So I was so happy, right. I was so nervous to meet the Director of the Weather Service, I was shaking. And it was like, I'm intern Ken, type of thing. And so, it was just interesting to look back at that. So everything looked good with this project, right. I was really trying to say we need to communicate differently. We need to communicate in ways, the ways that people receive information. It was like some of your early social science, right, on how we communicate. So the next was to give a presentation to the regional director and the whole team at Southern Region. And again, nervous. I mean there's a regional director. There's all these people giving the information. And there was a part that I showed all the graphs. I was so proud of all those slides, and I talked about, some day, some day you're going to be able to get radar information on your computer. Because back then, in the '90s, you had to pay for it. It wasn't available. It was all brand new. And the other part was saying, some day you're going to get warnings, like a tornado warning or a flood warning on your phone. I said, some day that's going to happen. And a certain very high-level person in that room stood up very upset with me, very, very upset with me, and basically hit the table. [Hits table]. Said, "You need to slow down on this. You need to slow down." And basically said, "We don't know about this internet thing. It could be a fad." And that was approximately probably around, probably '96-ish, somewhere in there, type of thing. So, isn't it interesting to look back and being of that age and being in that position, it was crushing, right. It was absolutely crushing. So it's interesting to look back at that.

So a couple takeaways. I never gave up. The other takeaway is I'll never do that to somebody. And, look where we are today, pretty interesting. So I like to tell that story at the new hires class, especially to the new generation coming into the Weather Service, because they need to keep pushing us, because now I'm that person, right. I'm not that person, but I'm at the age of that person. So they need to keep pushing, and they got ideas, they got great ideas. So I always tell them, don't be afraid to bring these things up, and you got to help us keep changing and improving the Weather Service.

GR. Did you ever get a chance to say, see, I told you so?

KG: No.

GR: No.

KG: No, not -- I probably thought it, but no, never did that.

GR: So, after -- so walk us through your career a little bit, if you will. So what was your next, what was your next job? You started again as a Met Intern in New Orleans. Where did you go next?

KG: Yeah, so there, it was interesting. Back then in Modernization there was an effort to close one of the regions. There was an effort to close Southern Region. A very big political mess, right. So I was, I was at the time a Journey Forecaster in New Orleans, but there was a temporary assignment. I spent three months. It was called the STAR Program. I can't tell you what that stands for. It was the STAR Program. I spent three months at Southern Region headquarters, and I was able to meet everybody. I was able to work a lot of dissemination issues, WMO headers, a lot of the communication stuff that I like. It was just such a great experience. I'm like, wow, this place is amazing.

So I went back to New Orleans after that three-month stint, and just me and my dog. He was a Dachshund, Oscar. I had Oscar and Meyer later, the weenie dogs, but that was a whole separate thing. So Oscar and I went over there for three months, lived in that apartment, and I walked him every day. I'm six-six and I walked this little, teeny dog. It must have been quite a site, but that was me. So I went back to New Orleans, and then all the political stuff, closing the region. In the end, the politics prevailed, and they were going to stay open.

The problem was a lot of people left. A lot of the group left there, and they were left really pretty shorthanded to be able to take care of modernization, right. Taking all your NWSFOs. We talked about that, and making all the offices basically equal across the county. So, I put in for the job. They were advertising the public and marine program manager, and the job there was to be able to basically spin up the offices. So, the job was to take the Weather Services offices, the WSOs, and turn them into full forecast offices. So, I got the job. So I moved to Fort Worth and what a challenge, right. Every -- you had to request, every one of the world meteorological organizations, the WMO headers, the headers for the products, every one of those had to be requested separately for every product at those offices. All your zone forecasts, all your coastal marine forecast, your fire weather forecast, all those original ones had to be requested. So, I wrote a plan, a transition plan, did it in three phases. It took a long time, but got -- was able to work with some other great folks ... Judd Ladd and some others back then, Steven Cooper, and were able to spin up those offices back in the late '90s.

So I look back at that, and what an incredible challenge that was. All the original headers I was able to get, and I printed off, I printed off every first forecast product of every one of those offices. I don't, it was probably in some box somewhere, but I kept those because it was such a

big deal. So, anyway, yep, that was that, Greg. So what an incredible experience and then after that I became the MIC, the meteorologist in charge in Corpus Christi. So, yeah, incredible experience.

GR: When we were recently at a WFO, I believe, in Salt Lake City, you mentioned, I believe, that you wrote a backup plan for Southern Region during the MAR. And I just wanted to, I wasn't quite sure what that was and perhaps why that was important. And you may have said it at a Meteorologist-in-Charge meeting that we were at together.

KG: Yep, back then, I mean, you couldn't, you had your big offices, the National Weather Service Forecast Offices, NWSFOs, and your Weather Service Offices, WSOs, but they didn't have the capability, the equipment, nor the headers or anything to back up those big offices. So backup was a serious problem. It wasn't there. So it was a discussion -- I think it was Judd Ladd and I at the time -- we're like, you know what? You're all going to have the headers. They could back each other up. I said, oh, what would that look like? So I started drawing that on a piece of paper, probably a napkin, drawing out what that would look like, what would a back up office look like, and I said, I've been through hurricanes. During that time at Southern Region, I was deployed to Baton Rouge during several hurricanes. I was deployed to Austin, Texas. We were doing IDSS way before there was a term IDSS. So back then we were deployed to these offices and to be able to do the decision support. Again, we didn't call it decision support, but you were able to convert the science into actionable things for the emergency managers.

So, going through those big events, I would hear mutual aid. I would hear in these emergency management settings and these EOCs how they're backing each other up. The counties are backing each other up. The parishes are backing each other up. I'm like, backup? We need to do the same thing. So, Judd and I drew that out on probably a napkin and then paper, and I said, well, what if, what if it's a hurricane and both those offices are out. Oh, primary and secondary. So we came up with a secondary backup. So anyway, Judd and I wrote the plan. It was the original backup plan for Modernization, and we wrote it. We had the forecast offices back each other up. And what's interesting is here -- that's probably, I don't know, man, '98, '99, -- and it's just interesting that those are still in place today, and it's almost the exact same offices that we originally drew up, are the backups. Now there's even tertiary. So things like Katrina and other events, there's actually a tertiary backup that gets way out of the area, like across the entire region type of thing. But, yeah, it's funny. We wrote that original backup plan, and it stuck today. And even the marine zones, you think about spinning up Key West. You think about a decision. It's like let's go 60 miles offshore, and what does that look like? We drew all those out. We drew all the original marine zones and came up with those barely from scratch because it was your forecast offices that did all the marine forecasts, not your smaller offices. So we had to draw those up from scratch as well. So, yeah, it's interesting to look back at some of that, and most of those are identical today.

GR: You went from Southern Region headquarters, and I assume that was still at Fort Worth at the time.

KG: Yeah.

GR: Okay. And then you went to Corpus Christi. Fairly small town, at least compared to the DFW area. Talk us through that transition. What did you learn? What were some of the challenges? And again, all of sudden now you're the man in charge, as a Meteorologist-in-Charge, you're the man in charge. What did you kind of walk into, and did that shape how you manage people today?

KG: Yeah, it does. Every one of these. It's interesting to look back at every single one of these experiences and how it does shape you. It shapes me today for sure. So you get down there, and first of all, I thought it was the most amazing thing in the world. I remember growing up in Arizona, you drive on a beach. I thought that was the most amazing thing I've ever seen in my life, by the way. I just, just would drive on the beach just all day long. I wouldn't care.

But, now, it was, yeah, a smaller community, but I think a couple takeaways from that. It was, you look at the services that we had to provide, whether it was hurricane, tornado, flood, it was one of these things that, it was, we had to do things different, right. You couldn't just do it the same old way. It was finding out how to communicate things differently. It was coming up with slogans. We came up with something called Weather to Go, and we actually worked on a copyright on that, honestly. So we really pushed the envelope. We tried to do things differently. And it was like, man, let's -- people don't know we're here. Let's make a -- let's do a pamphlet. Let's go to Sam's Club and hand them out. And we did! We did crazy things like that just trying to get the word out. I forgot about that until now. So we did that sort of thing.

The other takeaway there was just ... that was really -- I mean I saw some of that in New Orleans, but as an Intern and a Forecaster, I didn't get as much experience as I did as an MIC with the emergency managers. And it was, it was a huge thing to be able to see how tight and how important that the relationship is with those emergency managers. So that experience was just huge.

The other takeaway that shapes me today, we were trying to do some of the equity of service even back then, because I knew there were so many Spanish speakers, and how do we convert things to Spanish. We were able to do the brochures in Spanish, but how do you, how do you get our systems to be able to send warnings out in Spanish and seeing the advancements of today being able to do some of that is just awesome. It was tougher back then. It was tougher to translate. It was really hard to be able to do that with the technology at the time. So, I think it, I think there was a huge, a huge thing for me to be able to, to be able to look at that. It was like, we're not reaching everybody. So we got to get pamphlets out. We got to reach them that way. There's a language barrier. We're not reaching those folks. There's people not listening. How do we get them to listen? So it was just the earliest time of being able to say, I felt responsible for being able to figure out how to make that work, and that shapes me today. Things that were important then are just, they're very similar to what's important to me now.

GR: Cool. And how long were you at Corpus Christi? And where did you go from [there].

KG: About two years, and there were, yeah, there were some, there was a good opportunity to be able to go to Birmingham. I think it was the best way to talk about what happened there, and I was -- I threw my name in the hat, and I was briefed on some of the -- every place has challenges, right. So there were some challenges, which I welcome, and one of them was, , trying to basically work through a situation that the emergency managers wanted their own office in North Alabama, Huntsville. So, it was -- Huntsville was one of those offices that was slated to be closed during the Modernization or at least keep somebody there. So there was somebody there, but they really had no forecast responsibilities. They might have tweaked a forecast and sent it out, but that was about it but no warning responsibility. So I was sent there to not only just to work at the office as the Meteorologist-in-Charge of Birmingham, there's just some big events. I mean there's big tornado events, and there's some big shaping of your career going through some of those big events. [I] saw some tough stuff, big tornado events, saw people really doing the best you can with the science, getting the warning out, and feeling really good that we got the warning out, and then over the 700, 800 megahertz radio you hear about all the fatalities. That's a tough thing, right? You did everything you could. You're borderline high five, and you feel so proud, and it's like, well, wait a minute, 12 people died in that event. And it was, it was probably, you didn't have those big events in Corpus Christi, right. So it's probably the first time in my career it's like, wow, you could do the best job possible and still people get hurt. And, so that was an interesting thing to see the emotional toll of the forecasters to go through that. So that was some of the earliest there. So that was 2002 to about 2005 or so. And so, anyway, there was, it was working the spinning up of the new Huntsville office, hiring of the staff, having input to hiring the first MIC, which he is still an MIC today, John Gordon actually, in Louisville is the person.

So I look back at some of that, yeah, that was a big challenge. So that, and that was, that was a level of relationship with emergency managers that was the first experience as they're coworkers. It was a level of closeness with the people we serve, in that case the emergency managers, going to the conferences with them, doing the training, going through events, all of that, that was their family, right. That was a huge wakeup call, epiphany that it's more than -- you don't say users, right. Stop saying that. It's not even almost partners. They're literally coworkers, which was pretty interesting. And Greg, that's the place that we, we had frustration with the media having either their own radar or their own equipment saying, well, "I don't know what the Weather Service is doing, but I'm looking at this storm, and it looks bad to me." It's the type of thing, I was like, what? Seeing that on television. I was like, "What are you looking at, what are you seeing?" And so we brought all the media in. I guess you could call it one of your first integrated warning teams. We bought everybody in and said, what's going on here, we're watching it. We don't know that. Oh, you're right. Why would you know that? You're not here. And we experimented with something new called "chat." It was brand new. So we played around with it. Got in trouble, by the way, because we had some software that was on a government system. So I got in trouble. Some sort of security thing. I'm like, I'm sorry, we'll take it off. So we didn't take no for an answer. We got our own internet. So we put the chat software on its own internet, and we still were able to do the chat. So at that point, this was in Birmingham, we heard, well, I just got a chat from the National Weather Service, they're looking at this storm. We

are too. If you're in this area, standby just in case there could be a warning, but you could see how -- I'm like, all right, part of the team. Part of the team. That was the birthday of NWS chat, interestingly enough.

You look back at some of those, and that became a best practice on several service assessments, the Veteran's Day outbreak and some other tornado events that we had back in Birmingham back then. And anyway, that's the system that we use today, and we're continuing to grow it to a new, more robust system, as we speak.

GR: Chat and using tools like that seems to really have expanded since those times of the early 2000s. Here we are, 20 years later, and as you just mentioned, we're moving to a much more robust system. That's going to take some time. But it seems to demonstrate, those early relationships that you developed and that the Weather Service developed over the last 20 years, really have created this environment of true partnership. You weren't the only one doing this, obviously, back then, but how do you think, and I guess this is more opinion than it is history, but how do you, why do you think that really resonated within the Weather Service over the last 20 years?

KG: No, I think it's everything. I think it's that relationship. Again, this was all going on before all the buzzwords, right. We talk about impact base decisions for IDSS. We talk about decision support. We talk about all this stuff. Look, that was going on, that was going on 20 years ago plus, 30 years ago. The issue was, there wasn't -- it wasn't consistent. The other part was, there was a big chunk, a majority of the workforce that was in the Weather Service for quite a while that basically the job was to write the forecast, issue the warning, and press enter. So it was this next generation that came in that said, that's not good enough. I was one of those young people that said, that's not good enough. Pushing enter is not the whole job. It wasn't understood. It didn't get the action and response that you want. So there was another level. It was going on all over the place, and I remember, all of us new folks would go to forecast development school, back then it was a month. I mean you were out of the office for a month, radar school, and some of the other things that used to go on. We'd have these conversations about that. We were all kind of commiserating about the culture and how things needed to change and how some of us were being kind of kept down with some of these thoughts. So, we just started doing it. We built these relationships, and then getting in a position, where you're the Meteorologist-in-Charge, and you can make that part of the culture of the office that you work. And it goes from there.

And then, interesting, being a part of a group that started Building The Leaders For A Solid Tomorrow. It was the first leadership program outside of either a training center or a headquarters. In the Southern Region we built it. Gary Grice was -- and you look at Steven Cooper and others formed that group. I came up with the acronym, by the way. They were looking for a name of this thing. I'm like, we're really building leaders for a solid tomorrow. BLAST. So it's really funny to look back at that day. Love it. And it stuck. But it was there. You could build a culture of leadership, a culture of change, and talk about some of this stuff, and it grows from there. You start building it, and you get into service assessments.

And you share, and you do presentations at conferences. And it's like, this is good, it grew. It became really grass roots, these relationships, the importance. I mean everybody would go to AMS, but who's going to the Emergency Management Conference? Me! I mean I still do that today. So, yeah, that whole culture grew. It was going on, and I think in recent times there's more structure put to it. I think there's more -- Headquarters is able to put more definition to it and make sure there was some consistency in those provisions. Because there was, Greg, there was a lot of contentiousness that went on because of what was happening back then. So this was, you saw it in the '90s, and you saw it in the 2000s too, right. My neighboring office, "I heard they're doing this. They're giving briefings and this sort of thing. My office doesn't do that." So there was not only just chit chat about that, there were formal complaints. There were requests of counties wanting to move offices back then. I remember that, because I remember some of the letters. I mean I don't want to be at this office anymore. I want to go over there. They treat me better. So really interesting. I'm glad this is kind of recorded, because some of that, when it got lost, there was a real pressure from those that we served to get some of those services, interesting enough. So, anyway, it kept growing, and I think it spread with time. And I think now it's in our -- look, now it's in our mission. It's in our whole mission statement that we do that for a living and make that a priority. So it's interesting to see how that grew through time.

GR: Well, given our time and you've got a hard stop in a few minutes, I think that's a good place to stop this session by talking about it's in our mission, right. And part of this discussion is going to be talking about our mission and how that mission has evolved and how the Weather Service has evolved during your time with it and now under your leadership. So let's stop there...

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