

The Weather Man of Oklahoma City



Bill McCullough for The New York Times

Gary England, the chief meteorologist at Channel 9 in Oklahoma City, at the studio.

By SAM ANDERSON

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I had heard stories about the special powers of Gary England, Tornado Alley's most famous weatherman: how he had tracked storms, back in the day, from a tiny attic office with primitive radar repurposed from the nose of an airplane; how he had comforted, through the television screen, children who had been left alone in storms. As a nonresident of Oklahoma, however, I had never actually seen England's powers in action. This changed during my first few minutes at the Channel 9 Weather Center.

I was just settling in, unpacking my things, when England, whom I had yet to even meet, went running from his on-the-air command module to the studio's back door. Other meteorologists streamed after him.

England opened the big metal door and leaned outside. The weather over the parking lot looked exactly as it had for the last hour: a low, gray sky pouring steady rain, clouds sucked forward by a wind that would have been obscene anywhere else but in Oklahoma was just a stiff spring breeze. The trees seemed to be rolling their shoulders, loosening up for some vigorous activity to come.

England pointed to a red-and-white metal broadcast tower on the building's back lawn.

"Watch the tower," he said. We all watched the tower.

A few seconds later he added, with the rhythmic precision of an orchestra conductor calling in the kettledrums, “It should be coming — right . . . now.”

And then it came. The clouds accelerated, whipping past the tower as if fleeing something terrible. The rain went from a steady pour to dense, hectic, laser-targeted swarms coming at us sideways. The trees churned with new urgency.

England, having apparently seen all he needed to see, turned and left us at the door. It was unclear, to me at least, whether we had just witnessed a weather forecast or a feat of shamanism — if England was predicting or controlling the storm.

This was May 29, nine days after the tornado that devastated Moore and just as the weather was starting to get bad again.

England is the chief meteorologist at Channel 9 in Oklahoma City, a position he has held since 1972. This has made him a living legend in the state: the voice of public safety for roughly the last 2,000 tornadoes. Early in his career, he was notorious for issuing public tornado warnings before the National Weather Service did — a scandalous violation of hierarchy. He persuaded the owner of Channel 9 to invest in Doppler radar, a technology that promised to improve tornado-warning times to more than 20 minutes, from a single minute, before anyone was even sure it would work. (It did, spectacularly.) In the eyes of most Oklahomans, England is less a meteorologist than a benevolent weather god who routinely saves everyone’s lives. He has become a cult figure: a combination of Obi-Wan Kenobi, Foghorn Leghorn, Atticus Finch, Dan Rather, Zeus and Uncle Jesse from “The Dukes of Hazard.” There is a popular Gary England drinking game that, if followed literally, would probably destroy as many lives through alcohol poisoning as extreme weather does. (Take one drink when Gary says any of the following: hook echo, updraft, metro, Doppler, wall cloud, SkyNews 9, underground, mobile home.) In the wreckage of the strongest tornado in recorded history — the one that hit Moore on May 3, 1999 — survivors painted “God Bless Gary England” and “Thanks Gary England for Getting Us Out Alive!!” on the remnants of their destroyed houses. A former governor of the state has described England as “omnipresent, like the clouds and the sun.” If Oklahoma could speak, it would speak in the voice of Gary England, with a mild accent (the gentle synthesis of its neighbors’ drawls and twangs) and in charming colloquialisms.

England’s ancestors came to the state, in search of cheap farmland, before it was even a state. They settled out West, in the desolate area where Oklahoma shades into North Texas, and struggled to raise livestock between droughts and blizzards and dust storms and flash floods. England was born in 1939 in a country house with no electricity, by the light of a kerosene lamp; family lore has it that his parents paid the doctor in chickens. In

high school, before England became fully fixated on the weather, he dreamed of being a pig farmer.

The world that produced Gary England had much practical experience with, but little abstract knowledge of, extreme weather. Forecasts were folk wisdom: you knew what to expect because the horses were acting crazy or houseflies had gathered on a screen door or your cow's fur seemed unusually thick that year. Instead of radar, there was (if you were lucky) a police officer stationed at the edge of town, watching the sky for funnels. Often people got no warning at all. England remembers hearing stories about the killer tornadoes of the old days and seeing photos of their results: dead bodies piled in wagons and stacked in saloons. His first tornado memory is from 1947, when he listened to emergency vehicles screaming past his house all night on their way to Woodward, where more than 100 people were killed and nearly a thousand were injured by a funnel that stayed on the ground for nearly 100 miles and swelled, at times, to almost two miles wide. England and his father once had to take shelter from a sudden storm in a chicken coop. He remembers his father asking him: "Good Lord, will we ever know when these darn things are going to hit?"



Today England has inspired his own traditions of folk wisdom. You know a storm is going to be bad, Oklahomans will tell you, when Gary England removes his jacket.

On May 20, that folk wisdom failed: Gary England kept his jacket on. As the world watched, an EF5 tornado churned several middle-class neighborhoods in and around the seemingly doomed town of Moore into an indistinguishable hash. Street signs and landmarks were wiped away; the streets themselves, as well as the driveways and sidewalks, were so thick with debris that survivors and rescue workers couldn't even see them. The area was a wilderness. Everyone was lost and confused. The tops of trees were gone or twisted. Cows and horses were impaled by flying boards and shards of scrap metal. Huge metal electrical poles were bent in half, their power lines whipped around so

hard that they unbraided into thin strands. A tanker truck flew nearly a mile and crushed a second-grade classroom. Major roads were impassible for hours. Survivors crawled out of the rubble and went next door to help their neighbors crawl out of the rubble. Families had to be dug out of storm shelters. Shotgun blasts sounded late into the night: livestock being put out of their misery.

Ten days after the storm, on May 30, Capt. Dexter Nelson of the Oklahoma City Police Department drove me through the wreckage. Order had been partly restored. The roads, at least, were clear. Most of the debris was roughly sorted and pushed to the curb. Utility workers had already put up new electrical poles. Massive tree trunks had been chain-sawed and carted away. Most of the dead animals had been removed by so-called used-cow trucks, although a faint tang of rot still hung in the air. As we drove through the ruins, we kept passing surreal remnants of domesticity: a bed sitting in a bedroom without walls; interior stairs, complete with carpet, that were now on the exterior of a house; a big brick fireplace standing unharmed in the middle of an empty lot. Every object a middle-class American family might ever want to possess seemed to have been thrown into an open-air blender and scattered on the ground: a Mr. Potato Head, a kayak, a guinea-pig cage, a PlayStation 2, a doorknob, a high-school graduation photo, a microwave, a football magazine, a casino chip, a computer monitor. We saw a pickup truck wrapped around a tree, a Barbie doll wedged into a chain-link fence. We walked down steep stairs into someone's underground storm shelter. A group of church volunteers offered us water. It was all too much, and before long, I could hardly see anything anymore: the chaos exceeded the mind.

When the tornado hit, Nelson told me, he hunkered down in his office with his staff and monitored it the same way everyone else in the state did: by watching Gary England and the other local meteorologists. Weathermen, during severe weather, become a de facto arm of Oklahoma's emergency-response team. The networks' storm-chaser footage helps the police decide which roads to shut down and where to dispatch first responders. "They are lifesavers," Nelson told me.

Nelson said people often ask why anyone would live in Tornado Alley. The way he sees it, every place in America has its risks. Tornado Alley residents, he said, wonder why anyone would ever want to live on the coasts, with their apocalyptic earthquakes and hurricanes.

Although this year's storm season in Oklahoma was historically violent, Nelson said it's not clear that the tornadoes are getting worse. It may just be that there are more targets for them to hit. Oklahoma City, by land area, is one of the nation's largest cities: it covers more than 600 square miles. As it and its suburbs continue to sprawl, there are fewer

empty fields for tornadoes to pass harmlessly through. On May 20, some of the destroyed neighborhoods were just a few years old.

Nelson lives in a small town just a few miles southwest of Moore — the place, he told me, where storms are born. “It’s less dangerous,” he said. “They’ll touch down out there and then track northeast. They always seem to track north and east. I’ve rarely seen one going south. I’ve never seen one going west. It’s always west to east.”

Back at Channel 9, on my first day with England, the radar screens seemed to be showing emergencies everywhere. Long gashes of deep red stretched across the region. But in fact these were just run-of-the-mill violent thunderstorms: winds around 80 M.P.H. hail the size of golf balls, near-constant lightning strikes. If they were trying to generate tornadoes, the storms had made a crucial error: they had organized as lines instead of in isolation, which sapped them of much of their power. (Thunderstorms feed on moist warm air from the atmosphere; when several storms converge, they have to compete for that fuel.) Also they were moving too quickly to do much damage. “Just kind of wandering around,” England told his viewers, and he rattled off the affected cities and towns like an auctioneer: Kingfisher, Guthrie, Chickasha, Norman, Purcell.

The Channel 9 Weather Center seemed to be composed mainly of screens. England’s command module was a horseshoe of 10 of them, inside of which he stood, pivoting and pointing, stooping and straightening, issuing sudden warnings to his viewers. Matt Mahler, one of the station’s younger meteorologists, told me not even to bother trying to count all the studio’s screens — he’d tried it once, and when you start they just seem to multiply. These screens aspire to hold the entire atmosphere of the earth, to translate the complex flows and counter flows of gases and moisture into lines and numbers and blobs of color, which England and his colleagues are trained to translate back into actual weather. Every possible scrap of data seemed to be available, from wind speeds and hailstone sizes to lightning strikes and the precise locations of storm chasers.

In the early evening, things were calm enough that England invited me back to his office to talk. The room is a private museum of tornado culture. There are framed pictures everywhere: old news teams, a portrait of England sitting at one of his early radars, a caricature of him as the Wizard of Oz (“We’re off to see the Doppler”). There is an oversize ticket to the Oklahoma City premiere of “Twister” — a film England consulted on and appeared in — and an image of the gloriously 1970s cover of his first book, “Oklahoma Weather.” Most of all, there are photos of major tornadoes: dozens of funnels that looked, to me, more or less the same but that England knew individually. He walked around the room, introducing me to them. Many were from May 3, 1999, a day that spawned 62 tornadoes, including the strongest ever recorded, with wind speeds over 300 m.p.h. It hit Moore on a path that matched, in some places, the path of this year’s storm.

A photo near the door showed a monster tornado that, England remembers, came out of a supercell in April 1991. It ripped across I-35, one of the state's major traffic arteries, with wind speeds near 300 m.p.h. But for whatever reason, it missed just about everything and killed no one. "There was nothing there," England told me. "Of course, there was nothing left of what wasn't there."

In person, England is short and slight and folksy but radiates a casual authority. He is now 73, with perfect blond TV hair and something orangey about his skin. He reminded me a little of David Letterman: broadcasting icon timing out in front of our eyes. Technically, England's contract runs through October 2016, but his bosses have told him, repeatedly, that he should keep doing the weather until it's not fun anymore.

Resting his feet after a full day of urgent Weather Warnings, drinking a warm Sprite Zero, England looked at me and said, matter-of-factly: "It's not fun anymore."

The job is exhausting, he said. During storm season, he is sometimes on his feet, with no bathroom or food breaks, for 12 hours at a time. His eyes sting; his feet kill him. (Because his feet are rarely on camera, he wears Mizuno running shoes, which look ridiculous with his suit and tie but provide a bit of extra cushioning.) On top of the physical strain, there's the intellectual fatigue of sifting, constantly and publicly, through a real-time avalanche of weather data, as well as the emotional stress of knowing that if he makes a mistake, people could very well end up dead.

These days, it takes a huge storm like the one in Moore — a tornado as serious as tornadoes get — to get England's adrenaline going. What he loves most now, he said, is preparing for a tornado in the days and hours before it hits: going over the maps and the data, trying to predict what will happen and how his team should handle it. The storm itself is usually anticlimactic.

If Gary England wasn't having fun anymore, his younger colleagues sounded as if they were. From his office, we could hear them hooting and gasping about radar images and storm-chaser footage: power lines flashing, clouds lowering. Young meteorologists come from all over the country to forecast Oklahoma's weather, and the month of May is their Super Bowl. England chuckled and shook his head. "The young ones," he said. "Getting excited." His phone kept beeping, loud and shrill, to alert him that the National Weather Service was issuing severe-thunderstorm warnings. He ignored it. Despite all the gasps and alarms, despite the rain coming in sideways, England was confident that this storm was nothing to worry about.

A little later, the sky managed to pull itself together and generate what seemed like a serious threat. Far to the southwest, a Tail-End Charlie had formed: a rotation trailing behind the other storms, which meant it had unlimited access to all the energy left in the

atmosphere, an all-you-can-eat buffet of heat and moisture and wind. Val Castor, the channel's star storm-chaser, raced to the area and spotted a rotating wall cloud. Sirens went off in the studio: the National Weather Service had issued an official tornado warning. Over the phone, the station's newest chaser, the meteorologist David Payne, the man in line to replace England when he goes off the air, shouted: "Hello?! Hello?!" He said he saw a swirl. "Looks like it's going to try to do something," he said. The cloud was lowering, lowering, but for some reason it couldn't quite manage to reach the ground. This was all happening far away — 130 miles southwest of Oklahoma City — but if it kept growing and caught the jet stream just right, it was possible that it could blow all the way to the metro area. It could even — in a perfect-storm, Armageddon kind of scenario — hit the basketball arena, where a benefit concert was being held for the victims of the May 20 tornado. The storm's velocity couplet — bright contiguous patches of red and green on the radar, the signature of rotation — suddenly spiked to dangerous levels. The young meteorologists ran around exchanging acronyms. Castor shouted, "Woo-hoo!" (One tension of covering severe weather — one I experienced many times during three days in the studio — is that you often find yourself rooting for the storm. You don't want it to do serious damage, of course, but you would like it to be *interesting*, and these desires are often at cross-purposes.)

Gary England insisted that the storm wasn't a big deal, and of course Gary England was right. The rotation was too high. By 7:30, the threat was over. When I opened the studio door to go outside, I was shocked to find the sky bright and quiet, actually quite beautiful, with small clouds drifting steadily across it.

Meteorologically speaking, Tornado Alley — an area that stretches from northern Texas to the Dakotas — is defined by three ingredients, which go pouring into Oklahoma all spring long. The first is warm, wet air, which drifts up from the Gulf of Mexico. The second is hot, dry air, which wafts over from the deserts in the southwest. The third is the jet stream, which fires directly through Tornado Alley, churning those combined airflows into violent storms.

If any one of those three ingredients is absent, or not strong enough, you'll have a beautiful spring day. You might have a picnic or go water-skiing. If they all manage to combine, however, in just the right quantities, you'll get severe storms — in the worst cases, multiple supercells, little atomic thunderstorms that drift around trying to make tornadoes. Not only will your picnic be canceled, but your water skis could end up, along with fragments of your couch and your dresser and some of your shoes, in the middle of a field somewhere in Missouri.

On TV, a tornado looks like a supernatural beast. Watching the footage from Moore, I kept wondering: What on earth *is* that thing? Where does it come from? What does it want from us?

The truth is we hardly know.

Tornadoes occupy a space at the intersection of knowing and not knowing. We know everything about the conditions that help them form but almost nothing about why they actually do form. We know the paths they take but not why they take them. We know where and when, throughout Oklahoma's history, tornadoes have done the most damage — Snyder in 1905, Woodward in 1947, Moore in 1999, Moore again in 2013 — but we don't know exactly why they hit those spots instead of 100 miles north or 50 miles south. We know that tornadoes frequently spawn in families that they make some walls collapse inward and others fall outward, that they're often preceded by green light and giant hail and an eerie calm, that their parent storms kill them, eventually, with cold wind. We know that the bad ones like to form at the very back edge of a storm and that, in our part of the world, the funnels tend to rotate counterclockwise.

But there's still a lot of guesswork involved. There is no reliable way to directly measure a tornado's wind speed, so we have to infer its strength from the damage it leaves behind. EF1 means that windows have been broken and mobile homes overturned; EF2 means that the bark has been stripped off trees; EF5 means buildings made with reinforced concrete, like malls and schools and hotels, are ruined. When you get to that stage, as they did in Moore, tornado damage is timeless: all the disaster photos look basically the same, just with different models of cars.

I asked England what tornadoes are, exactly. "Well, they're kind of like a human," he said. "They're born, and they grow and they grow. And when they reach a mature size and they run out of conditions — they have to have warm, moist air — they'll start to die. And they go away. They're just like humans, except they don't last very long. But I've known some humans about as mean as them."

On May 30, Day 2 of the new storms, I arrived at Channel 9 to find the mood somber and focused. It was the worst possible kind of day for a meteorologist: unpredictable. The night before, scrutinizing the forecast data, England said he wouldn't bet a "plug nickel" on what was going to happen — an idiom that mystified his younger colleagues. The dry line, where dry air meets moist air and storms are typically born, was setting up relatively close to Oklahoma City, and the various winds (mid, upper, jet) all promised to be strong — conditions that create the kind of lifting and twisting that can generate tornadoes. Some of the data, as one of the young meteorologists put it, looked "freaking nuclear." But they had no idea where, or even if, things would hit.

Early in the afternoon, the radar came alive. Multiple storms were forming and spinning, isolated and strong, trying to lower, but each of them seemed to lack some key ingredient. Still, there was a feeling that anything could happen. Forecasting was abandoned in favor of “now casting” — just trying to keep up with what was going on.

Finally a nasty storm — strong rotation, high velocity — formed over Marlow, a small town to the south. On the radar, a small upside-down triangle appeared, a tornado vortex signature, and England gave viewers his traditional warning: “If you can’t get underground, get as many walls between you and the tornado as possible. Helmet, goggles, boots, long-sleeved shirt. . . . If I lived in Marlow, I’d be in the cellar.” People driving toward Marlow were advised to turn around.

The storm was dropping hail the size of baseballs, softballs, grapefruits. Small vortices were touching down. Footage came in of a storm sucking water out of a lake, which made Mahler squeal in amazement. A storm chaser reported a low, twisting, rain-wrapped wall cloud northeast of Oklahoma City, where another upside-down triangle appeared on the radar. One big storm split into two storms. Another big storm ate a smaller storm, at which Mahler gasped, “Ooohh, doggy!”

The big drama of the day turned out to be a storm headed right toward a huge summer camp with several thousand children. It was crawling closer and closer, at 10 or 20 M.P.H., spitting lightning and giant hail, trying to make a tornado. An adult at the camp told the news desk that there were no real storm shelters there. The Channel 9 Weather Center felt like an emergency room: beeps and sirens everywhere, phones ringing constantly, young meteorologists running around trading jargon in urgent whispers.

In the end, the atmosphere simmered down. The storm died before it hit the camp. Channel 9 cut back to its regular programming. England, having sparred yet again with the unknown, went home to put his feet up.

For decades, Channels 9 and 4 in Oklahoma City have been locked in an arms race for meteorological supremacy. If Channel 9 has footage of a storm two minutes before Channel 4, there will be hoots of celebration in the studio. I suspect the same is true at Channel 4. England told me that people sometimes ask him if the networks collaborate in reporting the weather, to which he responds that they must be joking. “We hate each other,” he says, and it’s hard to tell how much he’s joking.

In the war of the stations, no weapon has been more critical, or more controversial, than the storm chasers. This year, several months before storm season, Channel 9 poached Channel 4’s star chaser, David Payne. Channel 4 responded by hiring, as its new marquee chaser, a former reality-show star named Reed Timmer, who drives possibly the most amazing vehicle in the world: a 10,000-pound S.U.V. called the Dominator, which is

basically a homemade tank. The Dominator features bulletproof steel and Kevlar, a hydraulic stabilization system, spikes to anchor it during a storm and cannons that launch probes, on parachutes, directly into a tornado. It is designed to withstand a direct hit from a tornado and has done so multiple times.

For some, the Dominator is a rolling symbol of the sensationalism that has tainted storm chasing. But chasing has always been an uncomfortable combination of science, thrill-seeking and self-aggrandizement. The tradition goes back at least to Benjamin Franklin, who chased twisters on horseback, watching them chew paths through virgin Colonial forest. In the 20th century, aided by cars and cameras, the pastime exploded in popularity and eventually — with the invention of portable video cameras and satellite links — became a full-time profession. In the old days, England had to bribe reporters with beer to get decent storm footage. (England himself, having grown up surrounded by storms, prefers to stay in the studio.) Now the footage is everywhere, all the time, on the networks and cable and YouTube. When serious weather starts bubbling up over the Great Plains, the roads become clogged with hundreds of cars — students, journalists, mercenaries, even tour groups, all competing for the most incredible footage. Greg Carbin, a meteorologist at the National Weather Service, told me, half seriously, that he would like to see the largely unpopulated area of western Kansas set aside as Storm Chaser National Park, where all the adrenaline junkies could drive around freely, at their own risk, without getting in the way of residents or emergency vehicles.

Storm chasers, in their defense, are at least partly necessary. The most extreme weather registers, on the radar, as an absence of information. Softball-size hail or the debris cloud being thrown around in a huge tornado, looks like a big hole in the image. Radar data, like starlight, is information about the past. It tells you about the distant object it bounced off seconds or minutes ago. This can tell you a lot — that conditions are perfect for a big storm, that *something* is in the air — but it can't actually look at the storm for you. For that you still need people. Storm chasers provide the studios with what they call ground truth.

On the third day, as predicted, the weather got bad.

Oklahoma City prides itself on the smooth flow of its traffic. The standard line is that you can get anywhere in 15 minutes. Even traffic jams, people say, travel the speed limit. On May 31, in the middle of the afternoon, the traffic was locked. Storms were already firing up to the west, aiming themselves directly at the metro area, and everyone was trying to get to safety. Businesses were closing early. Even at Channel 9, some employees had already been sent home. Getting from downtown to the station took 45 minutes — by O.K.C. standards, an unheard-of odyssey.

At the Weather Center, it felt as if we were all living through history. Jed Castles, the morning meteorologist, had strapped his iPhone to a banister to live-stream behind-the-scenes footage. Three strong storms were coming, and more were already popping up. Mahler was simultaneously updating four or five Twitter and Facebook accounts, including England's. Nick Bender, another young meteorologist, was standing inside a pen of screens, tensely directing the storm chasers. At times he had two phones pressed to his ears at once, like a cartoon of a frantic person.

Outside, meanwhile, it was a severe-weather fantasy smorgasbord. There was so much moisture just hanging in the air that you could see it on the radar. The storms were moving slowly through it, feasting, growing stronger. In the studio, voices were flying from every direction, talking to one another and past one another and over one another.

"This is happening," Bender said.

"As serious as can be," Castles said.

"Bad things happening, simply put," one storm chaser said.

A wedge tornado came down near El Reno.

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Every storm seemed to be dropping tornadoes. Every chaser seemed to have a clear shot of one. El Reno was being pounded by baseball-size hail. The chasers were getting stuck in traffic. Bender’s voice was trembling as he directed them. England warned Payne and Castor that they were in danger, underneath the circulation. Near the biggest tornado, the traffic on Highway 81 was bumper to bumper. On the radar, the velocity couplet, which in a normal tornado is green and red, was purple and blue. Mahler emitted a weird laugh.

“This thing is going to blow away anything it hits,” England said.

Another storm had isolated itself behind all the others and was headed toward Oklahoma City. The air outside the Channel 9 weather studio turned green — the actual air, not the radar image of it — and huge warm raindrops were falling. I asked about the nearest safe room. It turned out to be the women’s bathroom.

Then the big tornado, the one near El Reno, did a strange thing. Most tornadoes go northeast, plowing a relatively straight path through whatever is in front of them. But this one suddenly turned. It went south. It crossed Highway 81, where all the traffic was. It was impossible to tell, from the radar, if it was still on the ground. There were reports that it was maybe a mile wide. The radar showed a debris ball in the air over El Reno, but there was no way to know exactly what damage had been done.

Then the tornado turned again, this time to the north. It crossed another traffic jam on I-40.

At Channel 9, the young meteorologists started to speak in dialogue out of disaster movies.

“Mother of God,” Bender said. “I’ve never seen this in my life.”

“This thing needs to just die already,” Mahler said.

As the storm shifted, Emily Sutton was one of a handful of chasers unexpectedly caught up in it. Sutton, 28, is the morning meteorologist for Channel 4 and a rising star of the Oklahoma City weather media. In the first big storm of the year, on May 19, things hadn’t gone so well. Sutton found herself face to face with a tornado near Shawnee and, feeling ignored, started shouting to get the attention of the station’s chief meteorologist, Mike Morgan. “Mike! Mike! Mike! Mike! Mike! Mike!” she shouted on the air. For some locals, this outburst was high comedy.

On May 31, Sutton was determined to stay calm. She could tell, early in the day, that this would be difficult. Sitting in an S.U.V. on a country road outside the tiny town of Okarche, reviewing the data, Sutton braced herself. She was paying particular attention to the Significant Tornado Parameter, an index that helps to predict destructive tornadoes. Serious tornadoes tend to occur when the number is higher than 1. People really start to worry when it gets up to 3. On May 20, when Moore was destroyed, the number was as high as 8. Today it was 11. Sutton had never seen it so high. The National Weather Service's Storm Prediction Center had declared a Particularly Dangerous Situation — a distinction it gives to very few tornado watches. (Even on May 20, despite the devastation it caused, it wasn't a large-enough system to merit a P.D.S.) Sutton sat there, a little scared, chewing gum, waiting for the sky to explode.

Finally, it did. She drove south, toward El Reno, and it wasn't long before she saw a lowering. A cloud ahead of her was dropping suction vortices — baby tornadoes — spread apart like fingers, the precursor to a wedge. According to radar, the tornado was heading southeast, which was unusual. Sutton drove after it, getting some great video and eventually pressed east across Highway 81, into territory that felt increasingly dangerous.

On the air, Morgan said something about the tornado beginning to turn again, and suddenly Sutton got what she came for: a clear view, in the distance, of a full-on wedge tornado.

From the passenger seat, Sutton's storm-chasing partner, the photojournalist Kevin Josefy, yelled at her to back up.

She ignored him: the view was good, and she felt they were safe.

He yelled at her again, more strenuously, to back up.

She started backing slowly down the country road, in a zigzag pattern, overcorrecting, still staring at the tornado. She could see that it was acting abnormally. It had, indeed, turned.

Then the wind started going crazy. Through the front windshield, Sutton saw leaves coming from behind her, blowing over her hood and flying toward the tornado. A branch followed the leaves, and suddenly tree parts filled the air, battering her car and flying over the hood at probably 100 m.p.h. The whole landscape was trying to accelerate forward, toward the tornado, while Sutton tried to back away. For a second she thought it might be too late: that they were already inside of it. Soon she felt debris hitting the back of her neck — dirt, twigs, leaves, glass — and realized that the wind had blown out her rear windshield. She ducked but kept driving. She could hear Morgan, on the air, yelling:

“Emily! Emily!” She felt the car hit something solid, which turned out to be the guardrail. On TV, in a clip that was to circulate many times across CNN and MSNBC and the Weather Channel, viewers saw Sutton’s feed go dead.

Sutton wasn’t the only chaser who was caught in the storm. (She actually hadn’t been inside the tornado proper: she was caught in its peripheral winds.) As she drove south to escape, with rain pouring directly into her car through the absent back windshield, she stumbled across a few of its other victims. In a ditch next to Highway 81, a car had been flipped over. One of the Weather Channel’s storm-chasing cars had been flung and rolled; on the air, Sutton said it looked as if a giant had stepped on it. The tornado, she discovered, had even dominated the Dominator. It was parked on the side of the road with its hood ripped off. Later Sutton would learn that Tim Samaras, a highly respected and innovative chaser whom she met once, was killed along with his son and chasing partner.

Sutton kept driving south, trying to escape, but she kept seeing more storms. She wasn’t trying to chase anymore. The tornadoes seemed to be chasing her.

In the weeks after the May 31 tornado, I kept remembering something Gary England told me in his office. One big regret, he said, is that although he grew up surrounded by Cheyenne people in Seiling, he never asked them about tornadoes. He didn’t know any of the tribes’ severe-weather folklore or survival strategies — the wisdom they must have built up over centuries on the Plains. Greg Carbin, at the National Weather Service, told me something similar. It’s a shame, he said, but not much native lore has survived. Both men had an attitude of sad resignation. Despite all of our Dopplers and Storm Trackers and Dominators, the feeling seemed to be, we have lost the old wisdom forever.

As I combed through the meteorological data about the tornadoes of May 31, this loss kept cycling through my mind. Eventually, in mid-July, after Oklahoma’s tornado season had given way to suffocating summer heat, I e-mailed the Cheyenne Nation and got in touch with a chief named Gordon Yellowman. Yellowman wouldn’t tell me everything he knows about surviving tornadoes. The rituals are sacred, he said, and have never been shared with outsiders. But he did tell me some things.

The Cheyenne language has several words for tornadoes and their related storms: *hevovetaso* (tornado), *ma’xehevovetaso* (big whirlwind), *ehohaatamano’e* (threatening weather). For the Cheyenne, the tornado is not some kind of evil predatory force or a random assault from a blind and dumb atmospheric soup with any concern for human life. A tornado has a job, Yellowman told me, and that is to restore balance to the environment. The tornado speaks to the native people, in their respective tribal languages, in a voice that sounds like fire. Before it reaches the tribal land, the tornado tells the elders how big it’s going to be, not in the

technical language of the EF scale but in colloquial terms: small, medium, big, huge. The tornado of May 31 was huge.

Yellowman is 55 and lives in El Reno. Late on the afternoon of May 31, as the EF5 was bearing down on his city, he and four other Cheyenne holy men stood in their homes and enacted the ancient rituals. They spoke with the tornado. They asked it to have pity and turn away.

This, Yellowman said, was when, against all meteorological expectation, the tornado turned south — baffling Gary England, breaking Emily Sutton's windshield, tossing the Weather Channel car, mangling the Dominator. It was later determined that the El Reno tornado was 2.6 miles wide — the widest in recorded history.

Just before 7 p.m. on May 31, the last of the day's major storms reached Oklahoma City. It ripped part of the roof off the airport. Downtown, flash floods knocked over trees and forced drivers to climb onto the roofs of stranded cars. A red wolf escaped from its enclosure at the zoo. In the run-down neighborhood where I was staying, a house went up in flames. Neighbors whispered that it was a meth lab that had exploded.

At the end of the night, after the threats had passed, after he had narrated the deadly progress of another round of tornadoes, Gary England staggered out of his command module of screens. He looked depleted. I asked him how he could possibly unwind after so much drama. He told me he was going to do what he always did: go home, drink a glass of wine and eat a big plate of nachos. But he spoke without enthusiasm. "I've been eating too many nachos lately," he said. With that he walked out to the station's garage, climbed into the most hail-damaged vehicle I have ever seen and drove out through a wall of rain, into the flood. Seven weeks later, it was officially announced that Gary England was leaving the air.