SUMMARY

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ISAAC'S STORM

BY ERIK LARSON

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Summary of “Isaac’s Storm” by Erik Larson

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Learn about the deadly hurricane that devastated Texas in 1900.

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Introduction

When you think about Texas, what comes to mind? Maybe you think “the Lone Star state” or maybe you think, “Go big or go home!” Either way, we often associate Texas with success and prosperity. We think of it as a state with a rich cultural history, a state with a thriving arts scene, or the hub of wealth, Southern culture, and supersized everything. But did you know about the deadliest hurricane in history? Did you know that this hurricane destroyed Galveston, Texas in the year 1900? Although Texas has since rebuilt and established itself as a pinnacle of American success, this hurricane nearly wrote a very different ending for the Lone Star state. And over the course of this summary, we’ll learn more about that storm and its impact.

The History of The Weather Bureau

Can you imagine life without the weather channel? Can you imagine a day where you didn't have a weather forecaster telling you what to expect outside? It would be a pretty wacky world! Most people want to know what they can expect from the weather and this desire has been a universal part of the human experience long before television was invented. Even when people lacked the appropriate technology to develop reliable weather forecasts, human beings still attempted to make predictions based on signs from the heavens. Weather reporter Dennis Mersereau has conducted his own study on the history of weather forecasting and he observes that:

"The most popular and widely-known saying is "red sky at night, sailor's delight; red sky by morning, sailors take warning." This phrase is at least as old as the Bible, and it has some truth to it. Weather systems in the northern hemisphere generally move from west to east, so if there's a colorful sunrise—meaning clouds to the west—it means rough weather could approach during the day. However, if the clouds catch the sunset as they depart to the east, it means the weather will probably be calm tomorrow.

Later on, with the invention of basic weather instruments, things got a little more scientific. Modern thermometers were common by the 1700s, and barometers came into use over the following century. These new-fangled observation tools made accurate record-keeping possible. Thomas Jefferson, famous for dabbling in writing and architecture, was also a studious weather observer who took near-daily records of the temperature, air pressure, and notable weather events at home in Virginia and on his travels. The next major technological leap came when the electric telegraph in the 19th century allowed people to quickly spread weather information across long distances, leading to the development and use of weather charts. These maps allowed people to see weather conditions and large-scale patterns across entire continents, making it possible to quickly spot hazardous areas.

Although meteorological knowledge wasn't very advanced at this point, people knew how to spot basic patterns and make an educated guess as to what could happen next. For example, rising air pressure is associated with calmer weather, so if the barometer showed air pressure trending upward, people knew to expect calm weather. On the other hand, falling pressures signaled stormy weather ahead. Once the 1900s arrived, the evolution of meteorological tools and knowledge advanced rapidly. Scientists began tying instruments to weather balloons to sample temperature, moisture and winds through the atmosphere. This simple advance became critical in understanding how the weather works and making forecasts."

These simple advancements in weather technology might seem primitive to us in 2021. But the author observes that the slow development of modern weather technology has actually been crucial to the development of society as we know it. One significant advancement is the creation of the Military Weather Service. In 1862, this department of the military was not yet an established entity of its own. It was simply a division of the Army Signal Corps commonly referred to as the Weather Bureau. The National Museum of the United States Army charts the history and progress of the Weather Bureau in an article which explains that:

"For most of history, weather observation was impeded by the lack of adequate technology. In particular, before the advent of the telegraph, rigorous weather analysis was impossible. Only when weather observations could be communicated over distance and their patterns recorded, could storms be tracked more effectively. The Weather Bureau helped establish the science of meteorology and launch the comprehensive weather services we enjoy today. Army contributions to weather analysis began as early as 1814. In order to prevent outbreaks of diseases like yellow fever and malaria, physician and Surgeon General of the United States Army Dr. James Tilton required his staff to keep detailed records to understand the correlation between disease patterns and weather conditions. Thus, it was the Army Medical Department that formalized the routine collection and cataloging of weather data.

In 1870, a series of freak storms killed several people in the Great Lakes region. These devastating weather events prompted Congress to pass a resolution instructing military posts throughout the continental United States to communicate observations of approaching storms to the Division of Telegrams and Reports for the Benefit of Commerce. Rep Halbert Paine of Wisconsin, wrote in the resolution that the Army should execute the law because "military discipline would probably secure the greatest promptness, regularity, and accuracy in the required observations.

That same year, the Army Signal Corps was tasked with the creation of an effective weather service. The Secretary of War, the precursor to the modern Secretary of Defense, assigned Brig. Gen. Albert J. Myer to the newly created post of Chief Signal Officer. Before serving in the Civil War as a surgeon, Myer had worked as a telegraph operator in New York state. Under Myer's care, the Signal Corps' forecasting system grew in scope and effectiveness. Operating primarily as an aid to industrial agriculture, the Signal Corps issued daily weather summaries and predictions, and telegraphed these reports to and from agricultural centers across the country. Furthermore, because only very basic meteorology was taught at universities, the Army instituted its own educational program at Fort Whipple, Virginia.

By the 1880s, the Signal Corps was consumed almost completely by its weather duties and had little time to spare for military endeavors. In 1890, Congress transferred oversight of the Weather Service to the Department of Agriculture where it was renamed the United States Weather Bureau, the predecessor to the National Weather Service. Army involvement in watching the weather for the nation was at an end, but it had been crucial in developing the basis for modern, reliable, nationwide weather observation and reporting. Charles Patrick Daly, a prominent 19th century jurist, author, New York State Assembly member, and President of the American Geographical Society, wrote, 'Nothing in the nature of the scientific investigation by the national government has proved so acceptable to the people, or has been productive in so short a time of such important results, as the establishment of the Signal Service (Weather) Bureau."

Isaac Cline

And this is where our story begins: with the newly established Weather Bureau and a man named Isaac Cline. Although a great deal of thought had been given to the creation of the Weather Bureau, less thought had been devoted to its organization and maintenance. By the year 1900, this division of the military was in total disarray. Misappropriation of government funds was only one part of the problem, even though internal embezzlement had cost the organization hundreds of thousands of dollars. Additional scandals arose when forecasters were caught getting drunk on the job, fabricating forecasts, and generally disrespecting both their office and the United States Army. To put it simply, the Weather Bureau was an absolute disaster!

And that's where Isaac Cline came in. Isaac was a meteorologist from Monroe County, Tennessee. He had grown up fascinated by weather and he spent much of his early career investigating the correlation between the weather and a person's health. He was also fascinated by tumultuous weather patterns; his professional research interests could be traced back to his childhood in Tennessee, a state whose weather is often characterized by tornadoes and freak lightning storms. In addition to his studies of weather, he also possessed a keen interest in linguistics, and he graduated from medical school. By 1889, he was also married with three daughters.

With his long list of qualifications, his sharp mind, and his stable, conventional personal life, Isaac seemed like the perfect solution to the Weather Bureau's problems. So, when the Weather Bureau sent desperate letters to universities, hoping that someone-- anyone!-- could come along and whip their office into shape, the president of Isaac's medical school knew he had just the man for the job. He wrote Isaac a letter of recommendation and Isaac became the head of Galveston, Texas' division of the Weather Bureau.

Isaac's Storm

The Galveston Daily News reports that the town was in its heyday when Isaac Cline and his family moved to Galveston, Texas. The paper affirms that, "At the turn of the century, Galveston was booming. It was the nation's biggest cotton port, its third-busiest port overall, and the second-most-heavily-traversed entry for immigrants arriving from Europe, nicknamed the "Western Ellis Island." The city had more millionaires, street for street, than any other in America. The nation, too, was bursting at its borders with optimism and confidence. Victory in the Spanish-American War granted the U.S. a heady new status as a global power. The nation was also being transformed in other ways, from an agrarian culture to an industrial one, from rural to urban, from scientific backwater to technological powerhouse.Nothing seemed impossible. American warships steamed to China. American engineers prepared to take over construction of the Panama Canal."

But sadly, its glory was short-lived. To this day, it is difficult to pin down a singular account of the events that led to that fatal storm in Galveston. Maybe Isaac Cline was more confident than he should have been. Maybe he thought that, in his wealth of education and wisdom, he had the skills to accurately predict hurricanes. This arrogance must have played some part in his prediction because he famously declared that the idea of a hurricane hitting Galveston was "an absurd delusion." This was partly because his research indicated that hurricanes move north as they swept through tropical areas like Cuba and the Bahamas; this would send them straight into the United States' Eastern Seaboard. If a hurricane followed this pattern, he believed it would hit Florida, Georgia, and North and South Carolina before it ever turned toward Galveston, on the Gulf of Mexico.

Unfortunately, however, his prediction was wrong on multiple counts. It was especially wrong because he neglected to consider the fact that a town just 150 miles away from Galveston had recently been devastated by a hurricane that killed 170 people. An astute analysis would have inferred that this

evidence alone disproves his theory; if a hurricane can hit a town that close to Galveston, that means that it doesn't follow the path he predicted. Therefore, this piece of evidence should have been sufficient to conclude that the town of Galveston needed additional protection against the threat of hurricanes. However, Cline neglected to consider this. The Galveston County Daily News continues to publish updated reflections about the hurricane of 1900 and they observed that, "Based partly on Cline's expert opinion, Galveston dismissed a proposal to erect a seawall, claiming it a needless, wasteful expense. In 1900, Cline's words reflected not only his own opinion but also the spirit -- what would one day be seen as the hubris -- of his time."

The people of the town believed Cline every bit as thoroughly as he believed himself. He thought he knew what he was talking about and the people of Galveston trusted his word. But they would all quickly learn the devastating consequences of their misplaced trust. The Galveston Daily News' reflection asserts that:

"On the evening of that fatal day in 1900, the worst natural disaster in U.S. history roared out of the Gulf of Mexico and confronted Galveston with its own powerlessness in the face of nature's fury. The unnamed storm was born as a small plume of warm air off the African coast. As it moved deliberately but inexorably across the ocean it fed on the heat of the summer waters, drinking in energy until it had grown huge with the potential for destruction. On September 7, cables started arriving in the Weather Bureau's Washington headquarters, relaying ships' encounters with the growing storm in an area off Cuba.

The storm then crossed Florida and arrived in the Gulf, but instead of meandering in the manner of most Gulf storms, it turned and aimed straight for Galveston. The track allowed its winds to blow unobstructed for hundreds of miles over waters made unusually warm by a particularly tropical summer. The storm added to its vast store of energy and pushed a huge wall of water along its leading edge. On the evening of September 8, the tempest of wind and water slammed into Galveston. In the language of today's National Weather Service, it would be called an extreme hurricane, or X-storm.

Within a few hours of making landfall, the storm had scoured vast sections of the city clean of any man-made structure, deposited towering walls of debris in other areas, and killed upward of 10,000 people."

Isaac Cline later wrote that, on that morning of September 8th, he had a sinking suspicion that his theory might not be correct. As the day wore on, his uneasy feeling grew, but he wasn't sure what to do about it. By the time he finally realized just how wrong he had been, it was too late for everyone. Most families in the town had no idea that certain devastation was heading for them until the water was over their heads. This might sound like a bit of an over exaggeration, but in fact, it is the heartbreaking reality. By 2:30 pm, many laws were underwater and the tides were rising. Families scrambled to the top floors of their homes, hoping against hope that their houses could withstand the storm.

Isaac Cline's family did the same, but sadly, they were just as misguided as everybody else. By nightfall, the house was surrounded by more than 15 feet of water and the house was beginning to shake and groan. Eventually, the house was completely underwater. Isaac's family had scattered into the watery abyss; they could see nothing but lightning strikes and the shattered debris of what used to be their home. Eventually, Isaac was able to find his brother and his three daughters. But even though he searched desperately for his wife Cora, he wouldn't find her until the bodies were cleared from the rubble many weeks later.

The final list of casualties was published later in October, a full month after the horror of the hurricane. Cora Cline's name was among the list of 10,000 other people who perished on that fateful day. Although the city eventually rebuilt-- and they did construct the seawall they had previously rejected-- the town of Galveston never regained the prestige and glory it had so carefully constructed in its heyday.

Final Summary

The hurricane of 1900 was the deadliest hurricane in American history at that time. To this day, no one is entirely certain why the storm hit the town of Galveston so hard and why that particular hurricane was so severe. But regardless of the confusion that surrounds the storm's circumstances, the damage it caused is undeniable: over 10,000 lives were lost in a single day, including Isaac Cline's wife Cora. As the director of the Galveston Weather Bureau, Isaac Cline believed he was capable of accurately predicting hurricanes and protecting his town. Unfortunately, however, his mistake cost the lives of thousands of innocent people.