

= Hurricane Celeste (1972) =

Hurricane Celeste of August 1972 was the first known tropical cyclone to strike Johnston Atoll as a hurricane . Forming from a disturbance in the East Pacific on August 6 , the storm began a general westward movement it would take throughout most of its life . The storm intensified steadily , becoming a Category 1 hurricane on August 10 . It kept steady at this intensity until it reached the Central Pacific . Upon entering the Central Pacific , intensification began anew , and by August 14 , the hurricane reached a peak intensity of 135 mph (217 km / h) . After maintaining this intensity for twelve hours , the hurricane began to weaken while passing south of Hawaii . The weakening phase was similar to its intensification in that the storm lost intensity slowly . Celeste then made a turn to the northwest and dropped below hurricane intensity on August 21 . The storm then entered an area of vertical wind shear , causing it to dissipate soon after .

Celeste was responsible for damage to shipping and for causing high waves to hit Hawai'i . The biggest impact from the hurricane , however , was on Johnston Atoll . There , the hurricane caused damage to a meteorology station on the island as well as damaging several military installations , including those related to Program 437 , an anti @-@ satellite weapons system . Additionally , there was a threat of contamination on the island from stored Agent Orange and other herbicides brought from Vietnam by the Defense Department for eventual destruction at sea by the Dutch @-@ owned incinerator ship MT Vulcanus . An inspection of the island following the hurricane indicated that there was no contamination , but the 1 @,@ 800 @,@ 000 gallons of herbicides sat in steel barrels on salt beaches for nearly 5 years . Overall , damage from the hurricane totalled \$ 3 @.@ 5 million .

= = Meteorological history = =

The precursor to Celeste was a tropical disturbance that had stalled roughly 520 miles (840 km) south of La Paz , Mexico on August 4 , though the disturbance was tracked starting two days before . The disturbance slowly intensified into a tropical storm on August 6 and was given the name Celeste . The next day , a ship called the Star Track reported winds of 25 mph (40 km / h) and an atmospheric pressure of 1 @,@ 006 millibars (29 @.@ 7 inHg) at a point 105 miles (169 km) south of the center of the storm . At this point , the storm began a general westward motion it would continue on for most of its life due to high @-@ pressure areas north of its track . While traversing the East Pacific , the storm kept a consistent intensity until late on August 9 , when it started intensifying again , becoming a hurricane the next day . On August 12 , the hurricane passed 140 ° W longitude and entered the Central Pacific just as it reached Category 2 strength .

Upon entering the Central Pacific , the hurricane began intensifying at a steady rate . On August 14 , it peaked as a minimum Category 4 hurricane , an intensity it would keep for twelve hours . Afterwards , the hurricane began a slow weakening trend , despite reaching its lowest pressure ? 940 millibars (28 inHg) ? after its wind speeds decreased . On August 16 , the hurricane made a turn to the west @-@ northwest , which brought it on a path towards Johnston Atoll . The hurricane passed 30 miles (48 km) to the northeast of Johnston on August 19 , subjecting the atoll to nearly six hours of hurricane @-@ force winds . After passing the atoll , Celeste turned to the northwest and eventually weakened to a tropical storm on August 21 . Shortly after weakening to a tropical storm , it entered an area of higher vertical wind shear which ultimately led to its dissipation by August 22 .

The best track intensity of Celeste largely varies between the HURDAT and the Central Pacific Hurricane Center (CPHC) . The best track on HURDAT lists Celeste as strengthening in intensity from tropical storm to its Category 4 peak and then weakening to dissipation in a straightforward manner , skipping Category 3 intensity while strengthening . The CPHC track , however , varies in that it shows a weakening to Category 1 shortly after entering the basin , followed by reintensification into a Category 3 . Another difference is that the CPHC shows Celeste as having reached Category 3 a second time on August 18 after prior weakening , during which it reached its peak intensity . Finally , the CPHC best track gives a peak intensity of Category 3 rather than Category 4 .

= = Impact = =

During its initial intensification in the East Pacific , Celeste was responsible for damaging a ship in the area . The ship , the barquentine Regina Maris (schooner) with 58 people aboard was impacted by high winds and rough seas , resulting in damage that led to the ship taking on 2000 gallons of water an hour . A Hurricane Hunter aircraft en route to the hurricane found the ship after receiving news that it was in the area and helped guide a rescue aircraft to the vessel before resuming its reconnaissance flight . The Vishva Tirth an Indian freighter , was the first vessel to arrive and it towed the Regina Maris to Los Angeles which took about 10 days . The Vishva Tirth took aboard most of the passengers from the Regina Maris . The Captain , Paul Maskell , along with the crew stayed on board the Regina Maris . The US Coast Guard Cutter Mellon arrived the day after the Vishva Tirth took the Regina Maris under tow and escorted both vessels for a few days . The Regina Maris was towed the entire way to Los Angeles by the Vishva Tirth . The towing was affected by Celeste and later by Hurricane Diana . While stranded , two people were treated for injuries on board the vessel . Another rescue attempt was affected when a homemade yacht called the Little Ark was briefly threatened by the hurricane . Prior to Celeste , it had rescued the crew of the ship Pipedream II , which had been damaged 700 miles (1 @, @ 100 km) off the coast of California . However , the Coast Guard reported that the yacht would have little trouble in avoiding the hurricane . While passing south of Hawaii , the hurricane affected the Puna , Kau , and South Kona Coasts of the Big Island with waves measuring 15 feet (4 @. @ 6 m) high . In addition , the threat of swells caused high surf warnings to be posted for the entire Hawaiian chain .

The worst impact was on Johnston Island , which had never experienced a hurricane prior to Celeste . The year before , 13 @, @ 000 tons of nerve gas and mustard gas had been transferred to the atoll from Okinawa . After a hurricane watch was posted , the idea of evacuation was considered and a decision was to be reached the day before the storm was to arrive . However , the threat of the stored gas being dispersed led to the island being evacuated as a precaution . The need of evacuation was increased by the hurricane gaining speed towards the island . After the decision , the arsenal on the island was secured and most of the personnel on the island were evacuated to Honolulu . Initially , ten people , including the base commander , volunteered to stay behind in shelters in order to clear the runway using bulldozers after the hurricane passed . However , the ten volunteers were evacuated after the risk was found to be too great . During the hurricane , the island was hit by high winds and 45 feet (14 m) waves for six hours , although fears that the island would be inundated never materialized . A total rainfall of 6 @. @ 21 inches (158 mm) was measured , but this is likely lower than the actual total since the instrument measuring the rainfall was partially clogged by a piece of coral . After the storm had passed , a flight had reported that damage looked minor . A decontamination team then arrived at the island to inspect whether any gas had escaped and whether the runway was usable . The unit later reported that the island was all clear . The north and northwest sides of structures on the island were reported to be hit by a combination of sand and coral . Roofs were blown off and the weather station on the island had lost one third of its roof and ceiling tiles , but the interior and instruments remained intact . None of the vehicles and heavy equipment on the island were reported to have been moved by the storm . An inspection by UNIVAC indicated that several computers on the island incurred rust , corrosion and , in one case , fungal growth . The biggest impact was to Program 437 , a defense project that used anti @-@ satellite weapons , with facilities and guidance computers destroyed . The system was repaired but Program 437 was terminated shortly afterwards on 6 March 1975 . During Hurricane Keli in 1984 , a figure of \$ 3 @. @ 5 million in damage was reported as having been caused by Celeste .

= = = Records = = =

In addition to being the first hurricane to strike Johnston , Celeste set many other records while active , most of them related to its impact on Johnston . The evacuations marked the first time that a major U.S. base was left unmanned , although the base was still under surveillance . Following the

storm , the weather station on the island measured a wind speed of 105 mph (169 km / h) , the highest recorded in 13 years of measurements , besting the previous record of 49 mph (79 km / h) recorded on two occasions . However , the gust recorder at the station remained inactive during the storm . The station also recorded a record low pressure of 983 millibars (29 @. @ 0 inHg) . The previous lowest was 1 @, @ 003 millibars (29 @. @ 6 inHg) at an unknown time .