

= Tropical Storm Debra (1978) =

Tropical Storm Debra was the second of two tropical storms to hit the United States in the 1978 Atlantic hurricane season . The fourth named storm of the season , Debra developed from the interaction between a high @-@ altitude cold low and a lower tropical wave in the Gulf of Mexico . Forming on August 25 , it was upgraded to Tropical Storm Debra based on data from a Hurricane Hunter aircraft . As Debra approached the coast , it attained peak winds of 60 mph (95 km / h) . The storm made landfall on the coast of Louisiana , east of the Texas border . Two deaths were caused by the storm . Debra weakened as it moved inland and ultimately dissipated on August 29 over Arkansas .

= = Meteorological history = =

Debra originated in an upper @-@ level cold @-@ core low pressure system that developed over southwestern Florida in late August 1978 . The low moved southwest towards the Yucatán Peninsula over the next day , as a tropical wave drifted westwards from the Caribbean Sea . The interaction between the upper @-@ level system and the wave led to the formation of a tropical depression on August 26 around 460 miles (740 km) south of New Orleans .

At first the depression drifted westward but , as the western periphery of a high @-@ pressure area weakened , it tracked towards the north and slowly strengthened . After a reconnaissance aircraft found surface winds of 45 mph (70 km / h) on August 28 , the depression was upgraded to Tropical Storm Debra . The aircraft also recorded a minimum pressure of 1002 mbar (hPa ; 29 @.@ 59 inHg) . While Debra approached the coast of Louisiana , an additional flight into the system found a drop in surface pressure to 1000 mbar (hPa ; 29 @.@ 53 inHg) , as well as peak winds of approximately 60 mph (100 km / h) at 00 : 00 GMT on August 29 . Observation stations off the coast recorded sustained winds of 45 ? 50 mph (70 ? 80 km / h) on August 28 , as Debra passed 150 miles (240 km) to the west .

The storm made landfall between Beaumont , Texas , and Lake Charles , Louisiana , on August 28 . Two stations recorded surface pressures of 1002 mbar (hPa ; (29 @.@ 59 inHg)) . As Debra moved north @-@ northeast through Louisiana and Arkansas , the central pressure rose slightly . In south central Arkansas the residual low pressure system merged with a frontal trough on August 29 ; the frontal wave drifted into southern Illinois and traveled eastbound into the Ohio Valley for the next three days . Five tornadoes were reported from the system in Texas , Louisiana , and Mississippi shortly after Debra 's landfall .

= = Preparations and impact = =

= = = Louisiana = = =

A flash flood watch was issued in advance of Debra for the whole of Louisiana . ExxonMobil , Royal Dutch Shell , Chevron , and other oil companies shut down operations and evacuated about 1 @,@ 000 employees from offshore oil rigs in Texas and Louisiana . Despite these evacuations , a 15 @-@ foot (4 @.@ 6 m) wave killed a person at a rig 80 miles (130 km) offshore from Cameron . Three evacuation centers in Lake Charles , were set up to help those needing shelter and departing the Cameron area , and the Red Cross opened four shelters at the Calcasieu Parish Public Schools . In Louisiana , more than six thousand people were evacuated from Cameron Parish , as well as an undetermined number from Vermilion Parish .

Louisiana had moderate flooding , especially in Rapides Parish . Rainfall amounted to 6 inches (15 cm) at Lake Charles and Lafayette , 3 inches (7 @.@ 6 cm) at Shreveport , and 3 @.@ 5 inches (8 @.@ 9 cm) at Monroe . Flash flood warnings were issued during the storm for Louisiana , Mississippi , Arkansas , Missouri , and Tennessee . By dawn on August 29 , all rainwater had receded from the streets and tides were back to normal levels .

A confirmed tornado at the Ike settlement in Vernon Parish , knocked over a trailer . The greatest amount of rainfall caused by Debra , 10 @. @ 81 in (275 mm) , was recorded in Freshwater Bayou Lock . More than 6 in (150 mm) was recorded across Louisiana , and tides between Atchafalaya Bay and Vermilion Bay were 5 @. @ 7 ft (1 @. @ 7 m) above normal . At Grand Chenier , a wind gust of 65 miles per hour (105 km / h) to 70 miles per hour (110 km / h) was recorded , and there were reports of downed trees and damage to roofs in Lake Charles and New Orleans . Tides at Lake Pontchartrain were 2 feet (0 @. @ 61 m) to 3 feet (0 @. @ 91 m) above normal .

= = = Elsewhere = = =

Gale warnings were prompted from Galveston , Texas , through to Grand Isle , Louisiana , at 18 : 00 GMT on August 28 . A confirmed tornado in Hardin County , Texas , damaged a trailer home and power lines . More than 6 inches (150 mm) of rainfall was recorded within Texas and 7 inches (180 mm) in the Beaumont ? Port Arthur area caused minor street flooding . Tides were 1 ft (0 @. @ 30 m) above normal at Corpus Christi , while tides at Galveston were 2 @. @ 2 ft (0 @. @ 67 m) above normal .

A tornado spawned in Turkey Creek , Mississippi , destroyed three mobile homes and a house , killing one person and seriously injuring another ; this tornado tracked on to Crystal Springs , Mississippi . Many rice stands were knocked over because of the gusts of wind from Tropical Storm Debra . Rainfall of more than 6 in (15 cm) was recorded in locations across Mississippi , Missouri , and Illinois . Tornadoes were reported in Memphis , Tennessee ; Little Rock , Arkansas ; Starkville , Springdale , Cedarbluff and Flora in Mississippi ; Livingston and Ascension parishes and north Lafayette in Louisiana . One person was hurt in the Memphis tornado . Power was knocked out at four blocks of the Memphis International Airport , gas supplies were cut off in Memphis , and downed trees and power poles blocked many streets . Overall damage caused by Debra was minimal .