

= Hurricane Norbert (1984) =

Hurricane Norbert marked the first time a core of a hurricane was fully mapped in three @-@ dimensions . First forming on September 14 , 1984 west of the Mexican coast , Norbert gradually intensified , reaching hurricane intensity two days after formation . On September 22 , Norbert peaked in strength as a Category 4 hurricane on the Saffir @-@ Simpson Hurricane Scale . While intensifying , Norbert meandered . It moved east , then north , then west , then south , then back towards the east , and finally towards the northeast . After fluctuating in intensity for two more days , Norbert rapidly weakened . It turned towards the northwest and made landfall in southern Baja California Norte as a tropical storm . The combination of Norbert and several other storms left thousands homeless throughout Mexico . The remnants of Hurricane Norbert produced moderate rain over Arizona .

= = Meteorological history = =

A tropical depression first developed on September 14 over the Pacific Ocean west of the Mexican coast . Six hours later , the depression intensified into Tropical Storm Norbert . Gradually strengthening , Norbert meandered in the weak steering currents for several days . The rate of intensification accelerated early on September 16 , and shortly thereafter Norbert became a hurricane .

On September 17 , Norbert turned from the east to the north , and upon attaining Category 2 status on the Saffir ? Simpson Hurricane Scale at 1800 UTC the next day , Norbert began to turn back to the west . Several hours later , Norbert was upgraded to a major hurricane (Category 3 or higher) . While maintaining its intensity for two and a half days , Norbert then turned to the south and after slight strengthening , back to the east . At 0000 UTC , September 21 , Norbert reached its peak intensity of 130 mph (210 km / h) . Meanwhile , a deep layer ridge over the Rocky Mountains was replaced by an upper @-@ level trough , which extended south of Cabo San Lucas . This change in the steering patterns caused Hurricane Norbert to eventually turn to the northwest .

Norbert fluctuated in intensity ; six hours after its peak Norbert weakened back into a Category 3 hurricane , only to regain Category 4 strength on three separate occasions during the next 48 hours . On September 23 , a Hurricane Hunter aircraft was flown into Norbert and measured a 9 @-@ 9 mi (15 @-@ 9 km) eye and a closed eyewall . On September 24 , while located 300 mi (480 km) south @-@ southwest of Cabo San Lucas , Norbert re @-@ intensified into a Category 4 hurricane for the fourth time . Another aircraft reconnaissance flew into the hurricane and observed that the heaviest precipitation was located east of the center of circulation . It also had an asymmetrical wind field . Repeated penetrations were made into the eyewall , and scientists mapped the storm 's three @-@ dimensional (3 @-@ D) wind field . This marked the first time that the core of a hurricane was completely mapped in 3 @-@ D. The aircraft was also equipped with Doppler weather radar .

Although the hurricane 's motion accelerated , by 0000 UTC September 25 , Norbert was only a mid @-@ level Category 2 hurricane . Later that day , the third and final Hurricane Hunter aircraft flew into Hurricane Norbert , finding a larger eye than the first flight , with a diameter of 16 mi (26 km) . After weakening back into a tropical storm early on September 26 , the system moved ashore near Point Abreojos in the central portion of the Baja California Peninsula while a high @-@ end tropical storm . While the Monthly Weather Review suggests that the cyclone dissipated on September 27 over the peninsula , it was last noted as a tropical depression over Arizona thus becoming one of the eight tropical cyclones to survive into the state .

= = Preparations and impact = =

Hurricane Norbert was described as " big and ugly " by meteorologists . Planes were advised to use caution while navigating in the area . The Mazatlan government marine operator warned shipping to exercise extreme caution from Jalisco to Baja California Sur . The Eastern Pacific Hurricane Center noted the possibility of heavy rains and flooding across portions of the Baja California Peninsula .

Throughout Mexico , a combination of Norbert and several other storms left many people without a home and hotels nearly empty . Scattered and light rainfall fell across portions of Baja California Norte and Sonora , with rainfalls totals of 2 @. @ 38 in (60 mm) and 2 @. @ 44 in (62 mm) at Berto Juarez and Denchiva @- @ San Pedro respectively . In all , rainfall data was reported at 284 locations across Mexico . Upon entering Arizona , sustained winds of 20 to 30 mph (30 to 50 km / h) were recorded in the Tucson metropolitan area . Due to its rapid motion , only moderate rainfall occurred throughout south @- @ central to northeast Arizona , with most locations reporting between 1 to 2 in (25 to 51 mm) of rain . However , Kitt Peak reported a 30 @- @ hour storm rainfall total of 4 @. @ 15 in (105 mm) . Lower than normal pressures were also recorded . Across New Mexico , flash flood warnings were posted due to heavy rainfall .