

= Cyclone Orson =

Severe Tropical Cyclone Orson was the fourth most intense cyclone ever recorded in the Australian region . Forming out of a tropical low on 17 April 1989 , Orson gradually intensified as it tracked towards the west . After attaining Category 5 intensity on 20 April , the storm began to track southward and accelerated . The following day , the cyclone reached its peak intensity with winds of 250 km / h ( 155 mph 10 @-@ minute sustained ) and a barometric pressure of 904 hPa ( mbar ) . Orson maintained this intensity for nearly two days before making landfall near Dampier . The cyclone rapidly weakened after landfall as it accelerated to the southeast . After moving into the Great Australian Bight on 24 April , the storm dissipated .

Despite Orson 's extreme intensity , damage was relatively minimal as it struck a sparsely populated region of Western Australia . Five people were killed offshore and damages amounted to A \$ 20 million ( US \$ 16 @.@ 8 million ) . The storm damaged a new gas platform that explored a possible oil field , believed to contain nearly 200 million barrels ( 32 @,@ 000 @,@ 000 m<sup>3</sup> ) of oil . The damage delayed the project for nearly two weeks . The most severe impacts took place in Pannawonica , where 70 homes were damaged . Following the storm , cleanup costs reached A \$ 5 million ( US \$ 4 @.@ 1 million ) . Due to the severity of the storm , the name Orson was retired after the season .

= = Meteorological history = =

Cyclone Orson originated out of a tropical low , monitored by the Australian Bureau of Meteorology , that formed northwest of Darwin , Australia on 17 April 1989 . The system tracked southwest throughout the day before turning due west and strengthening into a tropical cyclone , at which time it received the name Orson . At this time , the Joint Typhoon Warning Center ( JTWC ) also began monitoring the storm as Tropical Storm 28S . The forward motion of the storm gradually slowed as it intensified and on 19 April , Orson attained Category 3 status on the Australian tropical cyclone intensity scale , classifying Orson as a severe tropical cyclone . Later that day , as the storm attained Category 4 status , an eye developed . By this time , Orson began to turn towards the southwest and on 20 April , the storm intensified into a Category 5 cyclone with winds of 210 km / h ( 130 mph 10 @-@ minute sustained ) .

The JTWC also reported significant strengthening during the same period . They assessed Orson to have attained an intensity equivalent to a Category 5 hurricane on the Saffir ? Simpson hurricane scale on 22 April with winds of 260 km / h ( 160 mph 1 @-@ minute sustained ) . Around this time , the storm tracked directly over the North Rankin gas platform . The platform was in the 40 km ( 25 mi ) wide eye of Orson for roughly 40 minutes . A weather station there recorded a barometric pressure of 904 hPa ( mbar ; 26 @.@ 69 inHg ) and wind gusts of 250 km / h ( 155 mph ) before the station was damaged . This was , at the time , the lowest pressure ever recorded in the Australian region since records began . It was later surpassed by Severe Tropical Cyclone Gwenda in 1999 when that storm attained a pressure of 900 hPa ( mbar ) . By this time , Cyclone Orson was roughly 555 km ( 345 mi ) in diameter .

Continuing on a southerly track , accelerating ahead of an approaching cold front , Cyclone Orson made landfall , near Dampier , around 4 : 45 am AWST on 23 April ( 2045 UTC 22 April ) . with winds of 220 km / h ( 140 mph 10 @-@ minute sustained ) . The JTWC also reported that Orson had weakened , with winds at landfall estimated at 230 km / h ( 145 mph 1 @-@ minute sustained ) . Tracking at 28 km / h ( 17 mph ) , the weakening storm passed over Pannawonica . Less than 12 hours after landfall , the storm weakened below Category 3 status . By this time , the JTWC was no longer monitoring the system . Around 5 : 00 am AWST on 24 April ( 2100 UTC 23 April ) , Orson weakened to a tropical low while situated over southern Western Australia . Continuing to accelerate to nearly 50 km / h ( 31 mph ) , the remnants of the storm moved over the Great Australian Bight late on 24 April . Several hours after moving back over water , the storm dissipated .

The Australian Bureau of Meteorology uses 10 @-@ minute sustained winds , while the Joint Typhoon Warning Center uses one @-@ minute sustained winds . The conversion factor between

the two is 1 @. @ 14 . The Bureau of Meteorology 's peak intensity for Orson was 250 km / h ( 155 mph ) 10 @- @ minute sustained , or 290 km / h ( 180 mph ) one @- @ minute sustained . The JTWC 's peak intensity for Orson was 260 km / h ( 160 mph ) one @- @ minute sustained , or 220 km / h ( 140 mph ) 10 @- @ minute sustained .

= = Preparations and impact = =

As Cyclone Orson approached the coast of Western Australia , residents were urged to prepare for the storm ; people proceeded to clean up litter , secure outdoor items and make sure their disaster kits were stocked . All 200 personnel from a A \$ 1 @. @ 5 billion gas platform off the coast were evacuated ahead of the storm . Since Cyclone Orson made landfall in a sparsely populated region , its effects were relatively light compared to its intensity . More than 20 fishermen were reported missing during the storm .

On 23 April , a rescue mission with three aircraft recovered roughly 20 fisherman , while one was still missing . Offshore , the storm killed four Indonesian fishermen after their ships sank in swells up to 20 m ( 66 ft ) produced by the storm . The North Rankin gas platform sustained minor damage despite wind gusts reaching 270 km / h ( 165 mph ) and waves estimated at 21 m ( 69 ft ) . The large swells also delayed the find of a major oil field that contained more than 200 million barrels ( 32 @, @ 000 @, @ 000 m<sup>3</sup> ) of oil . The waves knocked a drill rig used to find oil out of position ; it would take several days for the drill rig to be repositioned . After an assessment of damage , it was found that the drill rig snapped off and broke the chains of two anchors before drifting nearly 2 km ( 1 @. @ 2 mi ) from the platform . The repositioning and cleanup of the drill rig delayed the project by nearly two weeks . The damages from Cyclone Orson increased the total cost of the platform to roughly A \$ 20 million ( US \$ 16 @. @ 8 million ) .

Upon making landfall , Orson produced a storm surge of 3 @. @ 1 m ( 10 ft ) . This came during low tide , having a height of 1 @. @ 6 m ( 5 @. @ 2 ft ) . Severe erosion was recorded along coastal areas , some losing nearly 20 m ( 66 ft ) of rocks . Wind gusts in Dampier reached 183 km / h ( 114 mph ) and a station near where Orson made landfall recorded a wind gust of 211 km / h ( 131 mph ) . Harbour officials stated that several ships were knocked off their moorings and washed up onshore . In Karratha , the local weather radar sustained roughly A \$ 900 @, @ 000 ( US \$ 760 @, @ 000 ) in damages . A nearby airport was also damaged . The jetty at Point Samson was severely damaged and eventually removed .

The most severe damage took place in the mining town of Pannawonica , where 70 homes were damaged by the storm . Numerous trees and power lines were downed along the storm 's path . Before dissipating , the storm left one additional person missing after contact was lost with his yacht . Later reports confirmed that the missing person drowned during the storm . Twenty people were also injured during the storm , 60 were left homeless and about 1 @, @ 000 were affected . Total damages from the storm were estimated at A \$ 20 million ( US \$ 16 @. @ 8 million ) and repair costs reached A \$ 5 million ( US \$ 4 @. @ 1 million ) . Due to the severity of the storm , the name Orson was retired after the season .