

= 1989 ? 90 South @-@ West Indian Ocean cyclone season =

The 1989 ? 90 South @-@ West Indian Ocean cyclone season was an average cyclone season , with nine named storms and five tropical cyclones ? a storm attaining maximum sustained winds of at least 120 km / h (75 mph) . The season officially ran from November 1 , 1989 , to April 30 , 1990 . Storms were officially tracked by the Météo @-@ France office (MFR) on Réunion while the Joint Typhoon Warning Center (JTWC) in an unofficial basis . The first storm , Cyclone Alibera , was the second longest @-@ lasting tropical cyclone on record in the basin , with a duration of 22 days . Alibera meandered and changed directions several times before striking southeastern Madagascar on January 1 , 1989 , where it was considered the worst storm since 1925 . The cyclone killed 46 people and left widespread damage . Only the final storm of the year ? Severe Tropical Storm Ikonjo ? also had significant impact on land , when it left \$ 1 @.@ 5 million in damage (1990 USD) in the Seychelles .

Of the remaining storms , several passed near the Mascarene Islands but did not cause much impact . In early February , Severe Tropical Storm Cezera and Tropical Cyclone Dety were active at the same time and interacted with each other through the process of the Fujiwhara effect . Cyclone Gregoara was the strongest of the season , which originated as Cyclone Walter from the adjacent Australian basin . Gregoara attained peak winds of 170 km / h (110 mph) over the open waters of the Indian Ocean in March , although the JTWC considered Alibera to be stronger . In April , Moderate Tropical Storm Hanta approached the northwest coast of Madagascar , but dissipated over the Mozambique Channel .

= = Season summary = =

During the season , the Météo @-@ France office (MFR) on Réunion island issued warnings in tropical cyclones within the basin . Using satellite imagery from National Oceanic and Atmospheric Administration , the agency estimated intensity through the Dvorak technique , and warned on tropical cyclones in the region from the coast of Africa to 90 ° E , south of the equator . At the time , the World Meteorological Organization recognized the MFR as a Regional Tropical Cyclone Advisory Centre , and would later label the agency as a Regional Specialized Meteorological Center in 1993 . The Joint Typhoon Warning Center (JTWC) , which is a joint United States Navy ? United States Air Force task force , also issued tropical cyclone warnings for the southwestern Indian Ocean . The season 's nine named storms and five tropical cyclones ? a storm attaining maximum sustained winds of at least 120 km / h (75 mph) ? is the same as the long term average for the basin .

Operationally , the MFR considered the tropical cyclone year to begin on August 1 and continue to July 31 of the following year . However , the JTWC began the year on July 1 and it lasted through June 30 of the following year . The latter agency tracked two short @-@ lived tropical cyclones in July 1989 , labeling them Tropical Cyclone 01S and 02S , but they are not considered part of MFR 's season . After these early storms , another tropical depression formed east of Diego Garcia on September 21 , classified as Tropical Cyclone 03S . Forming from the near @-@ equatorial trough , the system moved generally to the southwest , dissipating on September 27 as it approached Mauritius . In the next month , Tropical Cyclone 04S formed closer to Diego Garcia on October 11 . The JTWC classified it as a tropical depression on October 13 but dropped advisories the next day . The system initially drifted to the south but later turned to the northwest , dissipating on October 17 . The final of a series of early tropical systems was a tropical depression that formed east of Diego Garcia on October 28 . It moved southeastward , classified by the JTWC as Tropical Cyclone 05S on October 31 . The agency briefly estimated peak winds of 65 km / h (40 mph) , making it a tropical storm , before the storm looped back to the west and dissipated on November 2 . Later , the precursor to Australian Tropical Cyclone Bessi was tracked in the eastern portion of the south @-@ west Indian Ocean basin in the middle of April . The Australian Bureau of Meteorology (BOM) classified the system as a minimal tropical storm while still west of 90 ° E , although the MFR did not classify the system before it entered the Australian basin on April 15 .

= = Storms = =

= = = Tropical Cyclone Alibera = = =

The first named storm of the season , Alibera formed on December 16 , well to the northeast of Madagascar . For several days , it meandered southwestward while gradually intensifying . On December 20 , Alibera intensified to tropical cyclone status with 10 ? minute winds of 120 km / h (75 mph) , or the equivalent of a minimal hurricane . That day , the Joint Typhoon Warning Center (JTWC) , an unofficial warning agency for the region , estimated peak 1 ? minute winds of 250 km / h (160 mph) , while the Météo @-@ France office in Réunion (MFR) estimated 10 ? minute winds of only 140 km / h (87 mph) . After drifting erratically for several days , the storm began a steady southwest motion on December 29 as a greatly weakened system . On January 1 , Alibera struck southeastern Madagascar near Mananjary , having re @-@ intensified to just below tropical cyclone status . It weakened over land but again restrengthened upon reaching open waters on January 3 . The storm shifted directions while moving generally southward , dissipating on January 5 . It was the second longest @-@ lasting tropical cyclone in the basin since the start of satellite imagery , with a duration of 22 days . Only Cyclone Georgette in 1968 lasted longer at 24 days .

Early in its duration , Alibera produced gusty winds in the Seychelles . Upon moving ashore in Madagascar , the cyclone lashed coastal cities with heavy rainfall and up to 250 km / h (160 mph) wind gusts . In Mananjary , nearly every building was damaged or destroyed , and locals considered it the worst storm since 1925 . Across the region , the cyclone destroyed large areas of crops , thousands of houses , and several roads and bridges . Alibera killed 46 people and left 55 @ , @ 346 people homeless . After the storm , the Malagasy government requested for international assistance .

= = = Tropical Cyclone Baomavo = = =

A tropical disturbance formed on January 2 to the northwest of the Cocos Islands , which was tracked by the JTWC for the preceding few days before being classified as Tropical Cyclone 09S . It originated from the monsoon trough , which is an extended low pressure area within a convergence zone . It gradually intensified as it moved slowly to the southwest due to a high pressure system , or ridge , to the east . On January 3 , the system intensified into Moderate Tropical Storm Baomavo , and two days later attained tropical cyclone status while turning more to the south . The JTWC estimated peak 1 ? minute winds of 155 km / h (96 mph) on January 5 , and on the next day the MFR estimated peak 10 ? minute winds of 150 km / h (93 mph) . An approaching cold front caused Baomavo to weaken while the storm turned southeastward . By January 8 , the system weakened to tropical depression status while looping back to the northwest , steered by a ridge to the southwest . On the next day , Baomavo dissipated over the open waters of the Indian Ocean .

= = = Severe Tropical Storm Cezera = = =

On January 31 , a tropical disturbance formed just east of Agaléga . Moving southeastward , it intensified into Moderate Tropical Storm Cezera on February 1 , the same day that the JTWC began tracking it as Tropical Cyclone 14S . Cezera quickly intensified , and the JTWC upgraded it to the equivalence of a minimal hurricane on February 3 with 1 ? minute peak winds of 150 km / h (93 mph) . By contrast , the MFR only estimated peak 10 ? minute winds of 95 km / h (59 mph) . By February 4 , Cezera began a Fujiwhara interaction with Tropical Cyclone Dety , which was located to the east ; this caused the former storm to turn back to the northwest while gradually weakening . On February 6 , the storm turned to the south and later southeast , weakening to tropical depression status that day . Cezera briefly re @-@ intensified into a moderate tropical storm on February 7 , but weakened again on the next day while passing just north of St. Brandon . After turning more to the

east @-@ northeast , the system turned sharply southward on February 10 , and dissipated the next day .

== Tropical Cyclone Dety ==

A tropical depression developed within the monsoon trough on February 2 to the southwest of Diego Garcia , about 1 @, @ 125 km (699 mi) east of Cezura . The JTWC had been tracking the system for several days previously , classifying it as Tropical Cyclone 16S also on February 2 . With an anticyclone ? a high pressure area over the system ? providing favorable conditions , the depression quickly intensified while moving generally south @-@ southwestward . It became Moderate Tropical Storm Dety on February 3 and a tropical cyclone the next day . The MFR estimated peak 10 ? minute winds of 135 km / h (84 mph) , while the JTWC assessed stronger 1 ? minute winds of 175 km / h (110 mph) . Around that time , Dety began a Fujiwhara interaction with Tropical Storm Cezura to the west , causing the former storm to turn to the east @-@ southeast . Increased wind shear weakened the cyclone , although it maintained much of its intensity through February 7 as a severe tropical storm . However , Dety quickly fell to tropical disturbance status the next day while undergoing a counterclockwise loop . After turning back to the southeast , Dety remained a weak system for several days , dissipating on February 11 .

== Tropical Cyclone Edisoana ==

The MFR began tracking a tropical disturbance on March 1 between Mauritius and Diego Garcia , which was followed by the JTWC for several days previously and classified as Tropical Cyclone 18S . Within a day , it intensified into Moderate Tropical Storm Edisoana while tracking southwestward . On March 4 , the JTWC upgraded the storm to the equivalent of a minimal hurricane , and on the next day the MFR followed suit by upgrading Edisoana to tropical cyclone status . The latter agency estimated peak 10 ? minute winds of 135 km / h (84 mph) , while the JTWC assessed a peak 1 ? minute intensity of 185 km / h (115 mph) . Around that time , the storm passed west of Rodrigues island . Edisoana accelerated southward and gradually weakened , influenced by an approaching trough . On March 7 , the storm began transitioning into an extratropical cyclone , completing it by the next day . The extratropical cyclone rapidly intensified due to the influence of the trough and a nearby ridge , later being absorbed by the westerlies .

== Moderate Tropical Storm Felana ==

On March 7 , a tropical depression formed in the eastern portion of the basin to the east @-@ southeast of Diego Garcia . The nascent quickly intensified into Moderate Tropical Storm Felana by March 8 , the same day that the JTWC began tracking it as Tropical Cyclone 22S . Felana moved steadily to the southwest , although on March 10 it turned to the west @-@ northwest , followed by another turn to the south @-@ southwest on the next day . During this time , the MFR only estimated peak 10 ? minute winds of 65 km / h (40 mph) , although the JTWC assessed a peak 1 ? minute intensity of 85 km / h (53 mph) . Upon turning back southward , Felana passed east of Rodrigues on March 12 . It weakened to tropical depression status on March 15 and dissipated the following day , having curved back to the southeast .

== Intense Tropical Cyclone Walter @-@ Gregoara ==

On March 4 , a tropical low formed from the monsoon trough in the Australian basin southwest of the Cocos Islands . It executed a large loop and later turned back to the west due to a ridge to the south , during which it was named Walter by the BOM . On March 13 , Walter crossed 90 ° E into the south @-@ west Indian Ocean and was renamed Gregoara by the Mauritius Weather Service . However , the MFR did not begin issuing advisories until March 15 , when Gregoara reached 85 ° E . The JTWC classified the system as Tropical Cyclone 23S , which was a separate number from

when the storm existed in the Australian basin . Gregoara moved to the southwest , intensifying into a tropical cyclone on March 16 , the same day that the JTWC upgraded it to the equivalent of a minimal hurricane . On the next day , the cyclone attained peak winds ? the MFR estimated 10 ? minute winds of 170 km / h (110 mph) , while the JTWC estimated 1 ? minute winds of 205 km / h (127 mph) . The storm subsequently weakened slowly , and was below tropical cyclone status by March 19 . Three days later , Gregoara turned to the southeast as a weakened tropical depression , subjected to cooler waters and stronger wind shear , and it became extratropical . For several days , the system moved slowly over the southern Indian Ocean , turning to the southwest and later to the southeast before dissipating on March 27 .

= = = Moderate Tropical Storm Hanta = = =

A tropical disturbance originated on April 11 just north of the Comoros in the Mozambique Channel . Originally it only consisted of a spiral area of thunderstorms , but it gradually organized . It moved southeastward and intensified into Moderate Tropical Storm Hanta on April 12 , passing just north of Mayotte . On the next day , the JTWC classified it as Tropical Cyclone 27S with peak 1 ? minute winds of 85 km / h (55 mph) , although the agency did not include the name Hanta in advisories . By contrast , the MFR only estimated peak 10 ? minute winds of 65 km / h (40 mph) . Hanta approached the northwest coast of Madagascar on April 14 , passing within 11 km (6 @. @ 8 mi) of the Anjajavy Forest before turning back to the west , due to a ridge to the south . Later that day , the system weakened and dissipated .

In the Glorioso Islands north of Madagascar , Hanta produced 50 km / h (31 mph) wind gusts and 32 mm (1 @. @ 3 in) of rainfall . Later , gusts reached 65 km / h (40 mph) on Mayotte , and the storm dropped 75 mm (3 @. @ 0 in) of precipitation over 24 hours .

= = = Severe Tropical Storm Ikonjo = = =

The final storm of the season formed as a tropical disturbance on May 11 west @-@ southwest of Diego Garcia . It moved erratically at first , initially to the west , followed by a turn to the south and later a small loop . Its movement during this time and for its duration was dictated by a powerful ridge to the south . During this time , the system remained weak , although it intensified into Moderate Tropical Storm Ikonjo on May 14 . The JTWC began classifying the storm as Tropical Cyclone 29S about two days prior . After becoming a tropical storm , Ikonjo began a steadier westward movement , gradually curving back to the west @-@ northwest , and bringing it just north of Agaléga on May 16 . Two days later , the storm quickly intensified to attain peak 10 ? minute winds of 95 km / h (59 mph) , which made Ikonjo a severe tropical storm according to the MFR . Around that time it stalled , even drifting slightly to the west , before resuming a northwest motion , influenced by a ridge to the south . Ikonjo subsequently weakened while moving near or through the Outer Islands of the Seychelles . On May 21 , Ikonjo dissipated at the low latitude of 5 ° S.

Late in its duration , Ikonje became a rare storm to affect the nation of Seychelles . It passed nearest to Desroches Island , where it destroyed much of the island 's hotel . On the primary island of Mahé , Ikonje produced strong winds reaching 83 km / h (52 mph) at Seychelles International Airport , strong enough to knock over several trees . Nationwide , the storm caused \$ 1 @. @ 5 million (1990 USD) in damage and two injuries . A ship passing through the center of Ikonjo reported wind gusts of 148 km / h (92 mph) .