

= Cyclone Percy =

Cyclone Percy was the seventh named storm of the 2004 – 05 South Pacific cyclone season and the fourth and final severe tropical cyclone to form during the 2004 – 05 South Pacific cyclone season .

Percy was also the most damaging of the February cyclones as it battered the Cook Islands , which were still recovering from the impacts of Cyclones Meena , Nancy and Olaf . Percy then devastated the island of Tokelau , leaving many homeless and millions in dollars in property damages (although exact damage figures are unavailable) . Because of warnings in anticipation of the storm , there were no deaths and there were only a few injuries .

= = Meteorological history = =

On February 23 , the Fiji Meteorological Service 's Regional Specialised Meteorological Centre in Nadi reported that Tropical Disturbance 10F , had developed within the monsoon trough about 700 kilometres (435 mi) to the west of the Tuvaluan atoll : Funafuti .

10F was first identified as a tropical disturbance embedded in an active monsoon trough at 23 / 0000 UTC , approximately 380 miles to the west of Funafuti and moving eastwards about 05 to 10 knots . The system was then located just south of a 250 @-@ hPa ridge axis , in a diffluent region . Shear and diurnal variations were evidently influencing development . SST was around 31 ° C. Later on the 24th , shear had decreased markedly . Outflow was favourable and developing in all quadrants . Overnight , the depression underwent explosive development with the deep convection increasing spatially and in organization whilst cooling . Spiral bands were also wrapping tightly around the llcc . By 24 / 1800 UTC , TD10F was named Tropical Cyclone Percy , while located roughly 100 miles to the east of Funafuti and moving east @-@ southeast at 14 knots under a deep west @-@ northwest steering flow .

A discernible area of low pressure formed east of Tonga on February 23 . The area of low pressure moved eastward , where it strengthened into Tropical Depression 10F a day later . Since the depression was located in an area of low wind shear and warm water temperatures , it was able to quickly strengthen into Tropical Storm Percy . At this point in time , Percy was located 120 miles (190 km) east of Fongafale , Tuvalu , and was moving towards the east @-@ southeast at 14 kt (16 mph , 26 km / h) . On February 26 , Percy reached Category 1 status , while located 400 miles (644 km) north of American Samoa . While Percy moved east @-@ southeast , a shortwave trough developed southwest of the storm . The trough caused the cyclone to intensify even further to a Category 3 storm as it passed between Fakaofa and Swains Island . Percy then reached Category 4 status north of Pago Pago as its winds reached over 135 mph (115 knots , 213 km / h) and the barometric pressure at its center fell to 925 millibars . On February 27 , Cyclone Percy encountered a high pressure ridge which slowed its forward speed . Because of this , the cyclone 's structure became elliptical , which caused the cyclone to weaken back to Category 3 status . By February 28 , Percy bypassed the Pukapuka and Nassau Islands as a Category 3 cyclone as it continued to move east @-@ southeast .

By then , the cyclone was re @-@ organizing as the storm steered to the southeast . On March 2 , Percy reached its second peak intensity . Its winds reached 160 mph (140 knots , 265 km / h) on the Saffir @-@ Simpson Hurricane Scale , and an estimated barometric pressure of 900 millibars . Cyclone Percy maintained Category 5 status for 18 hours , while located 110 mi (177 km) west of Palmerston Island . After reaching Category 5 status , Percy began to weaken , due to increasing wind shear . During its weakening phase , Cyclone Percy passed south of Tropical Depression 20S . Pulled by an upper level trough , Percy swung to the east , passing Tropical Depression 24S in the process , before being caught up by another trough . By March 4 , the center of Percy became detached from the main area of convection and Percy quickly weakened to a tropical storm . Tropical Storm Percy then quickly accelerated to 20 kt (23 mph , 37 km / h) as it became an extratropical storm . Percy briefly entered the New Zealand area of responsibility before becoming extratropical at 1200 UTC . By March 5 , the remnants of Percy finally dissipated 700 mi (1127 km)

southwest of Rarotonga .

= = Preparations = =

When Percy quickly reached cyclone strength , forecasters began to issue watches and warnings for the American Samoa and Tokelau areas , which were impacted by earlier storms Nancy and Olaf . As Percy continued to move eastward , forecasters predicted the storm to strengthen into a Category 2 or Category 3 storm within 12 ? 24 hours. meanwhile , forecasters issued gale warnings for Tokelau . On 26 February , forecasters predicted Percy would stay on its current track and miss the island of Atafu by 50 ? 70 miles (80 ? 113 km) , even though the storm could bring damaging gale force winds and heavy rains to the island . However , forecasters predicted Percy would make landfall on Tokelau . In American Samoa , hurricane warnings were issued for Swains Island , while the rest of American Samoa remained under a hurricane watch . Later , the gale warnings for Tokelau were changed to hurricane warnings as Percy moved to within 75 miles (121 km) north of Atafu . In Nukunou and Fakaofu , forecasters predicted that the cyclone would bring 60 @-@ 70 mph (95 ? 111 km / h) winds , heavy rains and possible flooding in low lying areas .

Forecasters predicted that Cyclone Percy was going to turn to the southeast and hit the islands of Pukapuka and Nassau directly . Because of this , evacuations were ordered and emergency shelters were activated in Rarotonga . Forecasters also predicted that Percy was going to cause a strong storm surge . The Joint Typhoon Warning Center and NOAA also predicted that the storm was going to strengthen further within 12 ? 24 hours . In addition , forecast models predicted that Cyclone Percy would take a similar track like Cyclone Olaf weeks earlier . That prompted officials in the southern Cook Islands to order evacuations .

= = Impact = =

Like the earlier cyclones Meena , Nancy , and Olaf , Percy left widespread damage across Swains Island , Tokelau , and the northern Cook Islands . However , because of well @-@ executed warnings , there were no deaths and there were only a few injuries . Percy was the worst cyclone to strike Tokelau since a similar cyclone hit the area in 1966 .

= = = American Samoa and Tokelau = = =

The strong winds from Percy knocked out power and communications infrastructure in Swains Island . Efforts to re @-@ establish contact with the island were unsuccessful for a week . After the storm , however , all eight people who rode out the storm survived , though nine of the eleven buildings on the islands were destroyed or severely damaged . Damage in American Samoa was minimal . In Tokelau , Percy damaged trees and knocked down powerlines . During the height of the storm , one person was injured by flying debris , and two others were swept out to sea , but all three survived . In Nukununu , the cyclone destroyed the only school and damaged 80 % of the structures . The local hospital completely lost power during the storm and its emergency generator was overwhelmed by the flooding .

In Fakaofu , the storm surge from Percy damaged a sea wall and caused major beach erosion . One house was destroyed while others were severely damaged . Percy also damaged much of the coconut harvest and 50 % of the livestock were killed by the cyclone . Atafu also suffered similar damage as the storm damaged a UHF tower and several storage sheds . Damage to crops was also significant as the storm damaged much of the banana and pandanus harvests . The schools in Atafu suffered only minimal damage (mostly wind damage) .

= = = Cook Islands = = =

The northern Cook Islands were hardest hit by Percy as the storm left 640 people homeless , of which 600 were in Pukapuka , and 40 were in Nassau . Of the buildings and houses destroyed or

severely damaged , only ten were left standing . One person was rescued when his fishing boat stalled during the storm . Percy also damaged a solar power station , making it inoperable . Percy also battered the southern Cook Islands while weakening , although the damage there was minimal .

= = Aftermath = =

Relief efforts followed after Cyclone Percy . In Swains Island , a rescue plane dropped food and supplies . In Tokelau and northern Cook Islands , the governments of Australia and New Zealand offered over \$ 200 @, @ 000 dollars (2005 USD) in relief aid .

In Tokelau , many of the local officials feared about contamination since the cyclone had scattered human waste , trash , and other debris in the ocean and across the island . There was also an increase of mosquitoes and other insects , increasing the threat of a dengue fever outbreak . In addition , the storm damaged many of the hospitals , making treatment of the injured or displaced difficult . Criticism of government preparedness followed after Percy as emergency plans were not easily understood by the local population . In Nukunonu , the school , which was destroyed by Percy , was poorly built and vulnerable , and there was no early warning system . Also , many of the population had little time to prepare for the storm because of a social event held hours earlier .