

= Typhoon Longwang =

Typhoon Longwang (0519) , known in the Philippines as Typhoon Maring , was the deadliest tropical cyclone to impact China during the 2005 Pacific typhoon season . Longwang was first identified as a tropical depression on September 25 north of the Mariana Islands . Moving along a general westward track , the system quickly intensified and reached typhoon status on September 27 . After reaching Category 4 @-@ equivalent intensity on the Saffir ? Simpson hurricane scale , adverse atmospheric conditions along with internal structural changes resulted in temporary weakening . The structural change culminated in Longwang becoming an annular typhoon and prompted re @-@ intensification . The storm attained peak strength with winds of 175 km / h (110 mph) and a pressure of 930 mbar (hPa ; 27 @.@ 46 inHg) on October 1 as it approached Taiwan . Interaction with the mountainous terrain of the island and further structural changes caused some weakening before the typhoon made landfall near Hualien City early on October 2 . Crossing the island in six hours , Longwang emerged over the Taiwan Strait before moving onshore again later that day , this time in Fujian Province , China as a minimal typhoon . Once over mainland China , the storm quickly weakened and ultimately dissipated late on October 3 .

Prior to the storm 's arrival , officials in Taiwan activated all emergency operations centers and urged residents to take serious precautions . The storm brought record @-@ breaking winds , peaking at 234 km / h (145 mph) in Hualien City , and torrential rains . Despite the intensity of the storm , damage was relatively limited there . Two people lost their lives , 73 were injured , and damage reached NT \$ 570 million (US \$ 17 @.@ 7 million) . Large @-@ scale evacuations took place in mainland China , with 684 @,@ 860 people relocating . Losses were extensive in Fujian Province where 1 @-@ in @-@ 100 year rains caused disastrous flooding in Fuzhou , killing 62 people . In Minhou County , 85 paramilitary police perished when a landslide destroyed their barracks . Throughout China , 147 people were killed and damage amounted to 7 @.@ 81 billion RMB (US \$ 944 @.@ 6 million) . Due to the severe damage , the name Longwang was later retired .

= = Meteorological history = =

On September 24 , 2005 , the Joint Typhoon Warning Center (JTWC) began monitoring a tropical disturbance a tropical disturbance north of the Mariana Islands . Convective banding features soon consolidated around a low pressure area associated with the system , prompting the issuance of a Tropical Cyclone Formation Alert the following day . Later on September 25 , the Japan Meteorological Agency (JMA) declared the system a tropical depression . Situated in a region characterized by low wind shear and favorable upper @-@ level divergence , steady intensification ensued . Early on September 26 , the JTWC also classified the system as a tropical depression , designating it as 19W . Hours later , both agencies assessed sustained winds to have reached 65 km / h (40 mph) , indicating tropical storm intensity . As such , the JMA named the storm Longwang . Situated to the southwest of a ridge , the storm tracked slowly west @-@ northwest , while strengthening at an increasing rate . A temporary turn northwest occurred on September 26 as Longwang approached a weakness in the ridge which had previously steered it west @-@ northwestward . In the 24 hours following the storm 's naming , Longwang quickly intensified into a typhoon . Once at typhoon status , the storm resumed a more westerly track as a second ridge extending from eastern Asia became the dominant steering factor .

On a westerly course toward Taiwan and eastern China , Longwang underwent a period of rapid intensification from September 27 ? 28 . At the end of this phase , the JMA assessed peak winds at 155 km / h (100 mph) while the JTWC rated it as a Category 4 @-@ equivalent typhoon on the Saffir ? Simpson hurricane scale . On September 29 , the Philippine Atmospheric , Geophysical and Astronomical Services Administration assigned the typhoon the local name Maring as it entered their area of responsibility . The following day , Longwang underwent a structural change , transitioning from asymmetrical banding to symmetrical , making it an annular tropical cyclone . During the transition , upper @-@ level divergence and outflow significantly decreased , resulting in temporary

weakening of the typhoon . Additionally , an increase in westerly wind shear caused the interior structure to become asymmetric , with a southwest to northeast tilt noted by dropsondes released by the Dropwindsonde Observations for Typhoon Surveillance project . Once the transition into an annular cyclone completed , Longwang re-intensified and attained its peak intensity on October 1 while situated 400 km (250 mi) south of Okinawa . The JMA assessed winds at 175 km / h (110 mph) along with a barometric pressure of 930 mbar (hPa ; 27 @. 46 inHg) . The JTWC estimated Longwang to have been slightly stronger , with one @- minute sustained winds of 230 km / h (145 mph) .

At the time of peak intensity , an unmanned weather reconnaissance vehicle , known as Aerosonde , was flown into the typhoon and recorded peak winds of 211 km / h (131 mph) at an altitude of 3 km (1 @. 9 mi) . As the storm approached Taiwan late on October 1 , an eyewall replacement cycle began , with a large secondary eyewall forming around the inner one . At 1848 UTC , Doppler weather radar velocity estimates indicated winds of 240 km / h (145 mph) at an altitude of 3 km (1 @. 9 mi) . An interpolated surface pressure of 924 @. 5 mb (hPa ; 27 @. 30 inHg) was obtained based on data from the Aerosonde . After flying in the storm for ten hours , the unmanned vehicle encountered severe turbulence and crashed about 80 km (50 mi) east of Taitung City . Interaction with the mountainous terrain of Taiwan caused Longwang to weaken somewhat . The system ultimately made landfall near Hualien City at 0500 UTC on October 2 . Just six hours after moving inland , Longwang emerged over the Taiwan Strait with its circulation mostly intact ; however , weakening continued as it approached eastern China . Remaining over water for less than 12 hours , the typhoon made its second and ultimate landfall in Fujian Province late on October 2 . The storm quickly degraded over the following day , with winds decreasing below gale @- force within 12 hours . The former typhoon slowed and turned northward over western Fujian before dissipating late on October 3 .

= = Preparations = =

The first indications of Longwang impacting Taiwan were on September 27 when the Central Weather Bureau (CWB) stated that the storm was on a westerly course to the island . On September 30 , the CWB issued a sea warning for areas surrounding Taiwan . Shortly thereafter , the island 's Central Emergency Operations Center was activated . Early on October 1 , the whole of Taiwan was placed under a storm warning , prompting the Emergency Center to go to its maximum level of alert . Daily meetings held by the Emergency Center provided officials with information on the storm and its expected impacts . Details disseminating from the meetings prompted the activation of all emergency operation centers in Taiwan . Nine counties were placed under debris flow advisories by the end of October 1 . On October 2 , then @- President Chen Shui @- bian urged all residents to take serious precautions . A total of 2 @, 280 people were mountain climbing at the time and were advised to leave , the majority of whom complied . The Taiwan Railway Administration suspended operations on four rail lines . Rapid transit lines in Taipei maintained operations , though ran on slower schedules . For southern Taiwan , the main risk was fresh water flooding . Fifteen rivers were placed under high alert while 340 more were under moderate alert . By the time Longwang made landfall , 37 shelters opened across the island , accommodating nearly 1 @, 000 people . Additionally , 5 @, 464 Chinese fishermen temporarily sheltered at Taiwanese ports . All airports were closed on October 2 and sea travel was suspended . With international airports shut down , President Chen , who was returning from a visit to the United Arab Emirates , was forced to land in Indonesia . The landing in Indonesia was seen as a political breakthrough for Taiwan as Indonesia does not recognize them as a separate nation from China .

By October 1 , officials in Mainland China issued warnings for Fujian Province and urged residents to evacuate . An estimated 537 @, 000 people heeded these warnings in Fujian and a further 86 @, 000 and 61 @, 860 evacuated in Zhejiang and Guangdong provinces , respectively . The majority of evacuees were from the cities of Ningde , Fuzhou , Putian , Quanzhou , Xiamen , and Zhangzhou , with 376 @, 000 evacuating from Xiamen alone . Along the coast , roughly 38 @,

000 seagoing vessels returned to port . Thousands of officials in the province oversaw flood preparations . Public transportation across Fujian Province was temporarily suspended as well . The local airport in Xiamen shut down late on October 2 as rain bands from the storm began impacting the area . Throughout Fujian , more than 120 flights were canceled .

= = Impact = =

On October 1 , Typhoon Longwang brushed the southern Ryukyu Islands of Japan . Wind gusts in excess of 120 km / h (75 mph) battered the islands of Ishigaki , Iriomote , and Yonaguni ; a peak gust of 159 km / h (99 mph) was measured on Ishigaki . These winds caused travel disruptions , minor damage , and scattered power outages . Four people sustained minor injuries in Ishigaki City after being knocked down by the winds . Heavy rains accompanied the winds and accumulations peaked at 84 mm (3 @. @ 3 in) in the Yaeyama District . Significant agricultural damage took place as well , with losses in the sector reaching ¥ 1 billion (US \$ 8 @. @ 7 million) . Further south , the Batanes Islands of the Philippines experienced winds of 30 to 60 km / h (19 to 37 mph) in relation to the typhoon .

Due to the substantial loss of life and damage , the name Longwang was retired and replaced with Haikui (Chinese : ??) in 2006 .

= = = Taiwan = = =

Striking Taiwan as a powerful storm early on October 2 , Longwang brought destructive winds to many areas along the island 's east coast . Hualien City experienced the brunt of the impact with sustained winds reaching 163 km / h (101 mph) and gusts up to 234 km / h (145 mph) . These gusts were the highest ever recorded in the city , surpassing the previous record set during Typhoon Louise in 1959 . On the west coast of Taiwan , gusts reached 153 km / h (95 mph) in Wugi . Torrential rains impacted many areas , with a peak 24 hour accumulations in Hualien County reaching 764 @. @ 5 mm (30 @. @ 10 in) . A one @- @ day total of 576 mm (22 @. @ 7 in) was also measured in Yilan County .

At the height of the storm , 749 @, @ 621 households lost power while 24 @, @ 817 lost telephone service . In Hualien County , a man was killed after being struck in the head by an iron bar that crashed into his home ; 33 others were injured in the county . At least one home collapsed and six others were damaged in the county . High waves broke a 200 m (660 ft) stretch of a levee near ChiAnn , a coastal community in Hualien , and flooded nearby homes . Part of the entrance to the Hualien Martyrs Shrine collapsed amid strong winds . Numerous billboards and trees fell across Hualien City , littering the streets with debris . Elsewhere on the island , 13 others sustained injuries and one person was reported missing . In Chiayi City , a bus and truck collided , injuring 16 and on Provincial Highway 16 , 11 people were injured when their coach bus crashed into a telephone pole . It is unknown how much , if any , of a role the typhoon was in these accidents . In Kaohsiung , a concrete slab was torn off a building and wedged into a high rise apartment . One woman died after being swept away by flash flooding in the central town of Hoping . Within the Alishan National Scenic Area 106 landslides occurred , covering an area of 1 @. @ 29 km² (0 @. @ 8 mi²) . Along the coast , a 7 @, @ 000 ton cargo vessel broke loose from its mooring and drifted for 1 km (0 @. @ 62 mi) before running aground and breaking apart .

Overall , 2 people lost their lives and 73 more were injured across Taiwan . Infrastructural damage was less than feared with losses amounting to NT \$ 70 million (US \$ 2 @. @ 2 million) . Then @- @ Premier Frank Hsieh stated that the relative lack of damage " was some good fortune in the midst of this misfortune . " Substantial agricultural took place , with rice , bananas , Chufeng grapes , and leafy vegetables being the hardest hit . Losses in the sector exceeded NT \$ 500 million (US \$ 15 million) . Though unrelated to the typhoon , a magnitude 5 @. @ 4 earthquake struck Taiwan late on October 1 , sending residents in Hualien panicking into streets despite the ongoing typhoon .

= = = East China = = =

Typhoon Longwang , weakened from its passage of Taiwan , struck mainland China late on October 2 as a low @-@ end typhoon . Off the coast of Lianjiang County , gusts reached 164 km / h (102 mph) on Xiayu Island . Gusts onshore peaked at 137 km / h (85 mph) in Changle within Fuzhou City . Though the storm brought typhoon @-@ force winds , they were mostly confined to coastal areas and its greatest impacts resulted from torrential rains . Much of Fuzhou City experienced over 200 mm (7 @.@ 9 in) of rain , with a maxima of 332 mm (13 @.@ 1 in) in Changle . Of that total , 316 mm (12 @.@ 4 in) fell in a 12 ? hour span . Furthermore , one hour accumulations peaked at 152 mm (6 @.@ 0 in) . These rains were described as a 1 @-@ in @-@ 100 year event . Zhejiang and Jiangxi Provinces also experienced heavy rains ; 292 mm (11 @.@ 5 in) fell in Taizhou , Zhejiang while 128 mm (5 @.@ 0 in) was recorded in Nanfeng County , Jiangxi .

The greatest damage from Longwang took place in Fujian Province , especially within the city of Fuzhou where torrential rains overwhelmed the Jinan River and its tributaries . The ensuing flood inundated a 13 @.@ 69 km² (8 @.@ 5 mi²) of the city and resulted in 62 fatalities and left 24 people missing . Direct losses from the flood in Fuzhou alone reached 2 @.@ 2 billion RMB (US \$ 264 million) . Some areas were submerged by flood waters 2 m (6 @.@ 6 ft) deep and many landslides caused significant damage . A large auto plant owned by the Fujian Motor Industry Corporation , covering 83 hectares , was completely flooded . Many auto parts sustained heavy damage and losses at the plant reached 330 million RMB (US \$ 39 @.@ 9 million) . In Minhou County , Fuzhou , a landslide destroyed a barracks of the Chinese paramilitary police where 142 officers were staying . Roughly 7 @,@ 000 soldiers were deployed to the area for search and rescue . Ultimately , 47 people were rescued (39 of whom were hospitalized) and 85 bodies were recovered .

Striking during the week @-@ long holiday following Chinese National Day , tourism suffered greatly in the region . Across China , 4 @.@ 7 million people were directly affected by the typhoon , 4 million of whom were in Fujian Province . Preliminary assessments indicated that 9 @,@ 400 homes were destroyed , leaving 129 @,@ 400 people homeless . Fifty schools were damaged or destroyed as well . A total of 160 @,@ 000 hectares (3 @.@ 9 million acres) of farmland was damaged and 40 @,@ 900 heads of livestock were lost . Collectively , 417 km (259 mi) of roadways washed away or sustained damage and 103 km (64 mi) of river embankments were lost . Total losses reached 7 @.@ 81 billion RMB (US \$ 944 @.@ 6 million) , nearly half of which took place in the industrial sector . Typhoon Longwang was the deadliest storm to strike China in 2005 with 147 lives lost .

Reconstruction and restoration within Fujian Province began shortly after the storm 's passage . By October 6 , power had been restored to most areas and roads were cleared . On November 13 , five officers stationed at the barracks that was destroyed were punished as accountable for the deaths of the 85 cadets . Following an investigation by the Central Military Commission and State Council , all five were dismissed from their posts while Hou Yongjun , the director of the brigade , was to be prosecuted .