

= Typhoon Judy (1989) =

Typhoon Judy of July 1989 was a strong tropical cyclone that caused extensive damage and loss of life in Japan , South Korea and the eastern Soviet Union . Originating from a monsoon trough on July 21 , Judy began as a tropical depression west of the Northern Mariana Islands . Tracking west @-@ northwest , the system gradually intensified into a tropical storm and was given the name Judy on July 23 . By this time , the storm had turned due north . Two days later , Judy attained typhoon status as it began a gradual turn to the west @-@ northwest . Late on July 25 , the storm peaked with winds of 165 km / h (110 mph) . Striking Kyushu on July 27 , interaction with the island 's mountainous terrain caused Judy to quickly weaken as it neared South Korea . The weakened storm struck the country west of Pusan the following day before losing its identity near the border with North Korea . The remnants of Judy were last noted over the Sea of Japan .

In Japan , damaging winds from the typhoon left approximately 4 million people without power . Significant flooding in the country resulted in 11 deaths and \$ 28 @.@ 9 million in damage . In South Korea , heavy rains from the storm exacerbated ongoing floods , leading to at least 20 fatalities . Flooding from the remnants of Judy affected the Soviet Far East , temporarily severing the Trans @-@ Siberian Railway and killing 15 people .

= = Meteorological history = =

In mid @-@ July , a monsoon trough located west of the Northern Mariana Islands produced two tropical disturbances . The first of these tracked due west and later became Tropical Storm Irving . The second of these disturbances remained poorly organized and development into a tropical cyclone was expected to be slow . By July 21 , an area of low pressure formed within the system and convection associated with it increased . Situated underneath an anticyclone , upper @-@ level outflow also improved . Following further organization of the system , the Joint Typhoon Warning Center (JTWC) issued their first advisory on Tropical Depression 11W on July 21 ; at this time , the depression was located about 555 km (345 mi) west of Guam . Further aided by a tropical upper tropospheric trough to the northwest , the depression intensified into a tropical storm on July 23 and was assigned the name Judy by the JTWC .

On July 23 , a subtropical ridge to the northeast of Judy caused the system to turn northward . This turn was not well anticipated by tropical cyclone forecast models . By July 25 , satellite imagery indicated that Judy had intensified into a typhoon . Within hours of reaching this strength , the a weather buoy near the storm recorded a barometric pressure of 974 mb (hPa ; 28 @.@ 76 inHg) and winds of 105 km / h (65 mph) . Strengthening continued throughout the day and Judy soon attained its peak intensity as a Category 2 equivalent typhoon on the Saffir ? Simpson Hurricane Scale , with maximum sustained winds estimated at 175 km / h (110 mph) . Around this time , the Japan Meteorological Agency assessed the typhoon to have attained ten @-@ minute sustained winds of 155 km / h (100 mph) and a pressure of 940 mbar (hPa ; 27 @.@ 76 inHg) .

On July 26 , the typhoon turned towards the northwest and weakened somewhat . Late the next day , Judy struck the southern coast of Kyushu before moving over the Korea Strait . Interaction with the mountainous terrain of the island caused the storm to degenerate . Less than a day after moving over Kyushu , the system weakened to a tropical storm and soon made landfall in South Korea , roughly 205 km (125 mi) west of Pusan . Once onshore , rapid weakening took place with Judy being downgraded to a tropical depression within 12 hours . The remnants of Judy were last noted on July 29 over the Sea of Japan .

= = Impact = =

On July 26 , the Japan Meteorological Agency began warning residents of the typhoon 's imminent arrival , stating that Judy would approach western parts of the country in two days . The following day , heavy rain and strong wind warnings were issued for much of Kyushu . Heavy rains from the storm affected much of southern Japan . Across Kyushu , rainfall rates exceeded 40 mm (1 @.@ 6

in) per hour at times and many areas measured total rainfall over 500 mm (20 in) . Significant flooding and landslides from the storm destroyed 25 homes and damaged many more . In Nichinan , Miyazaki , roughly 1 @, @ 800 people evacuated as a river rose and threatened to flood parts of the city . Damaging winds from the storm , measured up to 180 km / h (110 mph) in Kagoshima , left roughly 4 million households without power . Train service throughout Kyushu was significantly disrupted , with 110 @, @ 000 passengers stranded . Damage throughout the island was placed at \$ 3 @. @ 8 million . Agricultural losses from the storm reached 3 @. @ 5 billion yen (\$ 25 @. @ 1 million) . In all , Typhoon Judy killed 11 people in Japan , destroyed 76 homes and damaged 10 @, @ 664 others .

On July 28 , typhoon and heavy rain warnings were issued for all of South Korea . Numerous people in low @- @ lying areas were evacuated . Thousands of vessels were also called to port to ride out the storm . Winds up to 125 km / h (78 mph) battered coastal areas of South Korea , uprooting many trees and leaving thousands without power . In Yeosu , hundreds of windows were blown out by the winds . Heavy rains , amounting to at least 335 mm (13 @. @ 2 in) along the Yeongsan River , from the storm exacerbated ongoing floods in the country . In Pusan , 15 people were killed by the storm , 9 by landslides and 6 by structural collapse or flooding . Approximately 2 @, @ 000 homes were damaged or destroyed in the city . In some areas , flood waters were " knee @- @ deep . " Throughout the country , 20 people were confirmed to have been killed by the storm ; however , media reports indicated that 24 people perished . According to Korean officials , roughly 47 @, @ 000 people were left homeless and losses reached 1 @. @ 2 billion won (\$ 1 @. @ 8 million USD) . In the wake of Typhoon Judy , the South Korean Red Cross set up soup kitchens .

The remnants of Judy produced heavy rains in the Soviet Far East in early August , resulting in significant flooding . In Primorsky Krai , at least 15 people were killed by the floods which virtually cut off part of the Trans @- @ Siberian Railway and washed out 267 bridges . A total of 109 settlements were also inundated . Approximately 120 @, @ 000 hectares (300 @, @ 000 acres) of land was underwater at the height of the floods . In addition to the loss of human life , 75 @, @ 000 cattle drowned .