

= Typhoon Halong (2002) =

Typhoon Halong , known in the Philippines as Typhoon Inday , passed just south of Guam one week after Typhoon Chataan struck the island and left heavy damage . The seventh named storm of the season , Halong developed near the same location as Chataan on July 5 near the Marshall Islands . For much of its duration , the storm moved toward the northwest , gradually intensifying . Early on July 10 , Halong passed just south of Guam as a tropical storm , producing high waves and gusty winds on the island . The storm disrupted relief efforts from Chataan , causing additional power outages but little damage .

After affecting Guam , Halong quickly strengthened and reached its peak winds on July 12 . The Joint Typhoon Warning Center estimated peak 1 ? minute winds of 250 km / h (155 mph) , while the Japan Meteorological Agency estimated 10 ? minute winds of 155 km / h (100 mph) . Subsequently , the typhoon weakened greatly while curving to the northeast , although it still passed near Okinawa with strong winds that left widespread power outages . Halong struck southeastern Japan , dropping heavy rainfall and producing strong winds that left \$ 89 @. @ 8 million (¥ 10 @. @ 3 billion 2002 JPY) in damage . There was one death in the country and nine injuries . Halong became extratropical on July 16 and dissipated the next day . The typhoon influenced the monsoon trough in the Philippines , contributing to flooding and deaths in the country .

= = Meteorological history = =

In early July , a circulation with an area of convection developed along the monsoon trough near Enewetak Atoll . The system remained nearly stationary , tracking slowly to the southwest . Gradually organizing , the system developed into a tropical depression on July 6 over the Marshall Islands . Without having issued a tropical cyclone formation alert , the Joint Typhoon Warning Center (JTWC) initiated advisories on Tropical Depression 10W at 0000 UTC on July 7 . Late that day , the Japan Meteorological Agency (JMA) upgraded the depression to Tropical Storm Halong near the island of Chuuk in the Federated States of Micronesia . By that time , the storm was moving west @-@ northwestward , steered by a ridge to the north . Halong slowly intensified , although it continued to develop deep convection that wrapped into the center . Early on July 9 , the JMA upgraded the storm to a severe tropical storm . At 1200 UTC that day , the JTWC upgraded Halong to typhoon status about 405 km (250 mi) east @-@ southeast of Guam .

While moving toward Guam , Halong became better organized , developing an eye and well @-@ defined rainbands . After a brief turn more toward the west , the storm passed about 140 km (85 mi) south of the southern tip of Guam at 0200 UTC on July 10 ; at the time , the JTWC estimated 1 ? minute sustained winds of 165 km / h (105 mph) , although the JMA had maintained Halong as a tropical storm until upgrading to a typhoon at 1800 UTC that day . An approaching trough increased shear over Halong , and a weak ridge to the north restricted outflow ; this briefly prevented significant intensification after the convection decreased . Late on July 11 , the thunderstorms increased , and restrengthening resumed . Late on July 12 , the JMA assessed Halong as reaching peak 10 ? minute sustained winds of 155 km / h (100 mph) . Around that time , the typhoon entered the area of the Philippine Atmospheric , Geophysical and Astronomical Services Administration (PAGASA) , which gave it the local name Typhoon Inday . Early on July 13 , the JTWC upgraded Halong to a super typhoon after the storm developed a well @-@ defined eye 63 km (39 mi) in diameter . Shortly thereafter , the agency estimated peak 1 ? minute sustained winds of 250 km / h (155 mph) .

At its peak intensity , Typhoon Halong had gale @-@ force winds that extended 415 km (260 mi) northeast of the center . It was continuing to the northwest toward Okinawa , and threatened to strike the island at near peak intensity . However , the typhoon began rapidly weakening due to increasing wind shear , and the eye quickly deteriorated . At around 1200 UTC on July 14 , Halong made landfall on Okinawa with 10 ? minute winds of 130 km / h (80 mph) . Around that time , the typhoon moved through a weakness in the ridge , turning to the north and later accelerating to the northeast . The combination of cool , dry air , and the persistent wind shear removed the convection

from the center by early on July 15 , weakening Halong to tropical storm status . Later that day , the JTWC discontinued advisories while the storm was approaching Japan , and the agency classified Halong as extratropical . The JMA continued tracking the storm , and Halong struck both the Izu and B?s? peninsulas along Honshu . Late on July 16 , the JMA classified Halong as extratropical , and shortly thereafter the storm dissipated over the Kuril Islands . The extratropical remnants of Halong moved out of the basin late on July 19 , just prior dissipating .

= = Preparations and impact = =

Only a week after Typhoon Chataan struck Guam and left \$ 60 million in damage , Typhoon Halong also threatened the island , although it veered to the south in the day before it would have struck . Due to the storm , all flights were canceled in Guam and the Northern Marianas Islands , and officials advised residents in low @-@ lying areas to evacuate . While passing to the south , Halong produced waves as high as 6 m (20 ft) in Inarajan . The waves left beach erosion along Guam 's southern coast , and were higher than during Chataan 's passage . The typhoon produced peak sustained winds of 69 km / h (43 mph) , with gusts to 90 km / h (56 mph) ; both observations were recorded at Guam 's National Weather Service . Damage on the island was estimated at \$ 40 @,@ 000 . The storm disrupted work to repair damage from Chataan . Portions of the island , including Guam Memorial Hospital , had their power restored after Chataan , only to lose electricity during Halong . The additional damage caused by Halong contributed to Governor Carl T.C. Gutierrez declaring the island as a state of emergency on July 22 , which activated the Guam National Guard .

While passing northeast of the Philippines , Halong enhanced the monsoon , and combined with the effects from previous typhoons Rammasun and Chataan , as well as Severe Tropical Storm Nakri , there were 85 deaths , with 45 people injured in the Philippines . About ten of the deaths were estimated to have been caused by Halong . The combined damage in the country totaled \$ 10 @.@ 3 million (? 522 million 2002 PHP) .

In Japan , Halong dropped heavy rainfall that peaked at 362 mm (14 @.@ 3 in) in Nagano Prefecture . The highest rainfall in Okinawa was 258 mm (10 @.@ 2 in) . Near Tokyo , a station recorded winds of 112 km / h (69 mph) , although winds gusted to 183 km / h (114 mph) at Kadena Air Base on Okinawa . In the Ryukyu Islands of Japan , including Okinawa , Halong left more than 48 @,@ 800 houses without power due to the strong winds . Officials canceled bus service in Naze , Kagoshima during the storm . Throughout the country , the typhoon destroyed six houses and damaged 223 others to varying degrees . Halong also flooded 301 houses , forcing about 4 @,@ 000 people to evacuate their homes , many along rivers . Officials canceled 54 airline flights , 10 of them international , and due to the storm , 171 schools were closed . In Sendai , Halong damaged roads in 550 locations and railroads in seven locations . Nine levees were breached , and there were at least 270 landslides . Damage totaled \$ 89 @.@ 8 million (¥ 10 @.@ 3 billion 2002 JPY) across the country , mostly from agriculture . During its passage , the typhoon injured nine people , one of them severely , and there was one death .