

# Typhoon Rex (06W)

The paramount forecasting challenge of the 1998 Northwest Pacific tropical cyclone season was Typhoon (TY) Rex (06W). This cyclone formed in the Philippine Sea and was influenced by synoptic features present in the mid and upper troposphere during its meander northeastward. The influence of 3 distinct TUTT cells caused TY Rex's track to deviate from its forecasted northeast track 3 separate times. Seventeen days after initial detection, TY Rex (06W) transitioned to an extratropical cyclone southeast of the Kamchatka Peninsula.

TY Rex (06W) formed in a broad trough east of Luzon late in August, 1998 and was first described as a suspect area on the 210600Z August JTWC Significant Tropical Weather Advisory. The first warning was issued at 240300Z August. The cyclone continued to steadily intensify as it tracked northeastward at 8 kt in response to flow emanating from the mid-tropospheric subtropical ridge to the east. On 260000Z August, TY Rex was designated a typhoon with a maximum intensity of 70 kt with an associated eastward track change noted at around the same time.

The Tropical Upper Tropospheric Trough (TUTT) was very active in August and "cells" or cyclones within this trough affected the track and intensity of Typhoon Rex. The first TUTT cell weakened the subtropical ridge to the east, allowing TY Rex to track eastward from 251200Z to 270000Z August. As the influence of the TUTT cell waned, TY Rex resumed a more northward course and reached peak intensity of 115 kt with a 30 nm diameter eye at 280600Z August. TY Rex began to move northward toward Honshu when a second, much deeper TUTT cell began to weaken the subtropical ridge to the east. In response, TY Rex again began to move east-southeastward around 310600Z August. During this period, TY Rex weakened to 90 kt and later intensified to a 100 kt cyclone at 010000Z September.

After the second TUTT cell began to move westward, TY Rex resumed its northeastward track on 020600Z September. After passing, north of 30 degrees north, TY Rex began weakening due to cooler surface waters and increased vertical wind shear. Around 031200Z September, a third TUTT cell began to interact with TY Rex, causing an eastward jaunt for approximately 18 hours. This TUTT cell, however, was the weakest of the three and rapidly collapsed, allowing Rex to resume its northeastward movement by 041200Z September.

Between 4th and 7th of September, Typhoon Rex continued to track northeastward and then eastward while transitioning into an extratropical system. JTWC issued the final warning on this cyclone at 070300Z September.

Although Rex never made landfall, its proximity to Honshu, Japan caused heavy flooding and 575 mudslides. The media reported 13 fatalities, 30 injuries, and 8,000 homes destroyed.

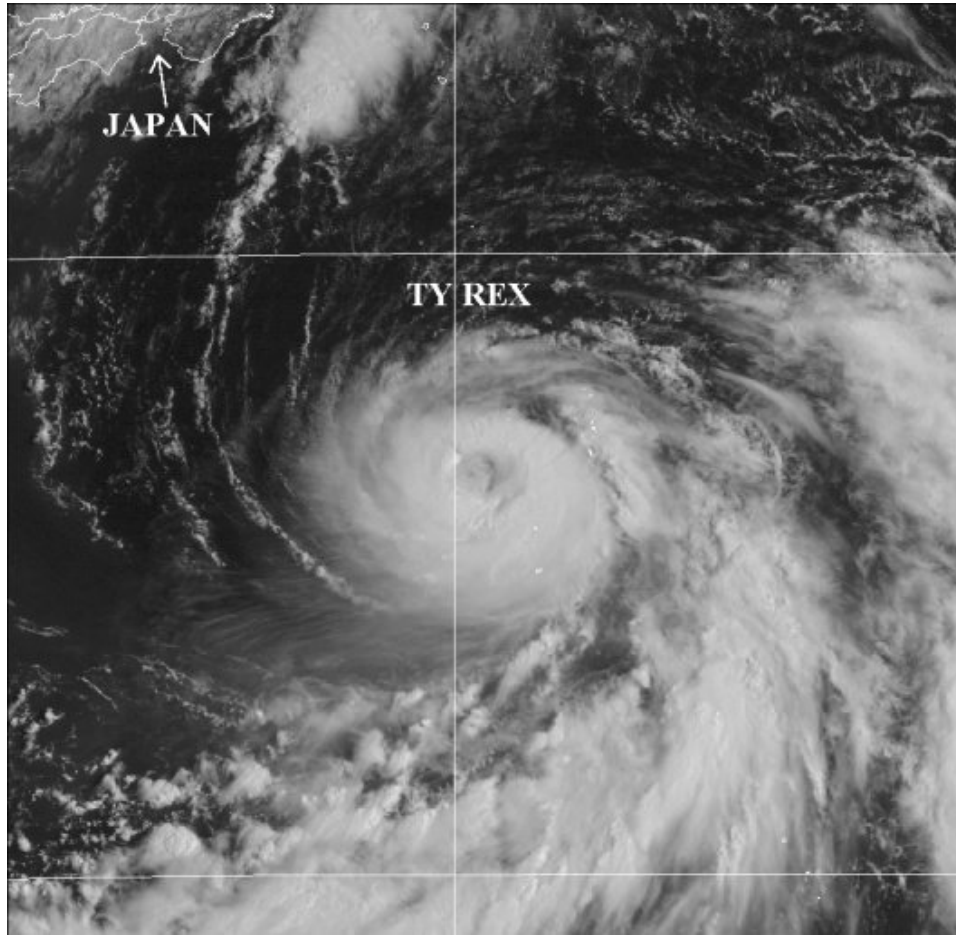


Figure 3-06-1. Visible satellite data of TY Rex at 272334Z August, 1998 when the cyclone was a 110 kt system and about 6 hours away from peak intensity of 115 kt.

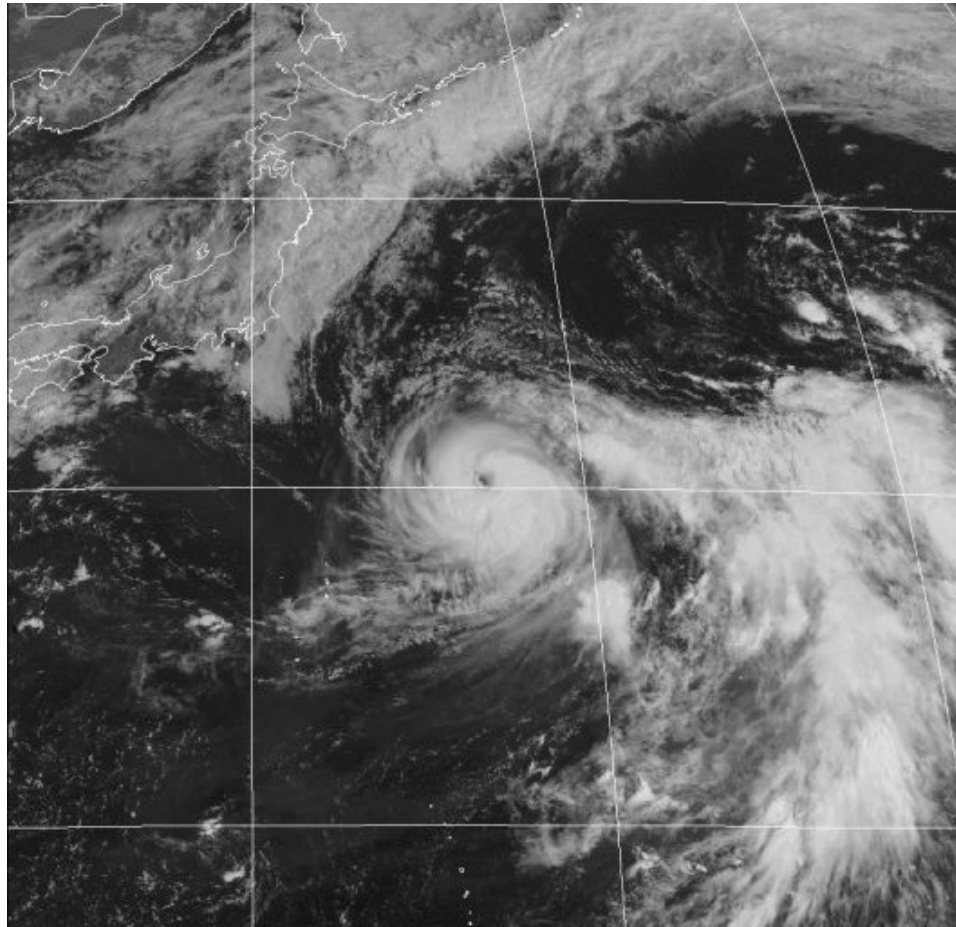


Figure 3-06-2. Visible satellite image of TY Rex at 312334Z August, 1998 undergoing reintensification to a 100 kt cyclone after weakening to 90 kt.

