

### **3.4.3 Tropical Cyclones Striking Mindanao**

While rare, Mindanao can get hit—typically by small, but intense typhoons. Typhoon Ike, with 115 kt winds in 1984, killed over 1000 people and caused considerable destruction near Suragao. During 1990 and 1991, only two tropical cyclones struck Mindanao, and with only very minimal impact. The nearness of Mindanao to the Equator (and the commensurate small value of  $f$ ) reduces the likelihood of tropical cyclones affecting the island. Also, the monsoon trough moves poleward during the Northern Hemisphere summer, and thus removes this TC genesis region from the vicinity of Mindanao, until its return in late fall. The departure of the monsoon trough during the Northern Hemisphere summer, combined with the sparsity of TC passages, provides much of the island with less than 100 inches of rain per year (see Appendix C). There are exceptions such as at Hinatuan, located on the northeast coast (see Fig. 1.1), where the northeast trade wind enhances its average rainfall to about 175 inches. Nevertheless, the island, in its position so near to the Equator, was covered with cloudiness during a majority of the time during the past two years. Appendix C indicates that all the stations (except one) in Mindanao have an average cloud cover of 6 octas (6/8). Although they are not discussed in detail, the only two TCs to affect Mindanao during 1990 or 1991 are shown in Figs. 3.17(a)&(b).

#### **Typhoon Marian, 9–20 May 1990**

Marian was the only significant tropical cyclone to form in the western North Pacific Ocean during May 1990. After forming southeast of Koror, Marian moved toward 280°, passing over the southern tip of Mindanao four days later—still as a disturbance (see Fig. 3.17(a)). Its delay in development was attributed to restricted outflow aloft, and then to interaction with Mindanao to inhibit low-level development. From its inception, Marian traveled about 1200 nm before being designated a tropical depression when the first warning was issued at 150600Z May, as it passed by Palawan. Marian then tracked around the western end of the subtropical ridge (not shown) into the South China Sea, becoming a typhoon and later recurving to strike Taiwan as it was caught up in an approaching cold front and commenced extratropical transition.

#### **Super Typhoon Owen, 14 November–5 December 1990**

While Owen was both the longest lasting and one of the most interesting tropical cyclones (the 30th designated) of 1990, it reached Mindanao in its dying (or dissipating) stage (see Fig. 3.17(b)). As the figure shows, Owen actually developed as a convective cluster east of the dateline, 860 nm southwest of Hawaii on 14 November. Owen attained super typhoon status twice, once on 23 November when it slowed to a forward speed of only 4 kt (similar to Super Typhoon Mike described earlier, before it hit Visayas) and again on 27 November when it was moving faster at a speed of 10 kt. Owen caused extensive property and crop damage (plus 2 deaths) during its long track through islands and atolls, but no damage to Mindanao (U. S. NOCC/JTWC 1991).

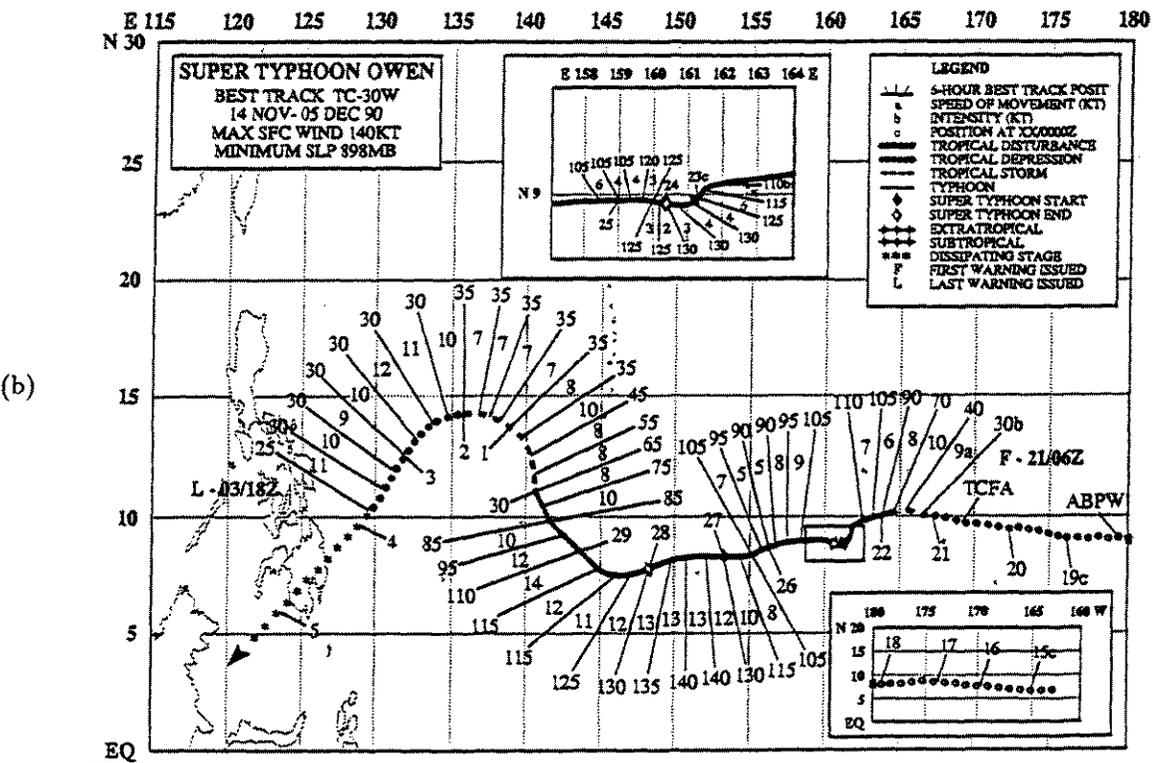
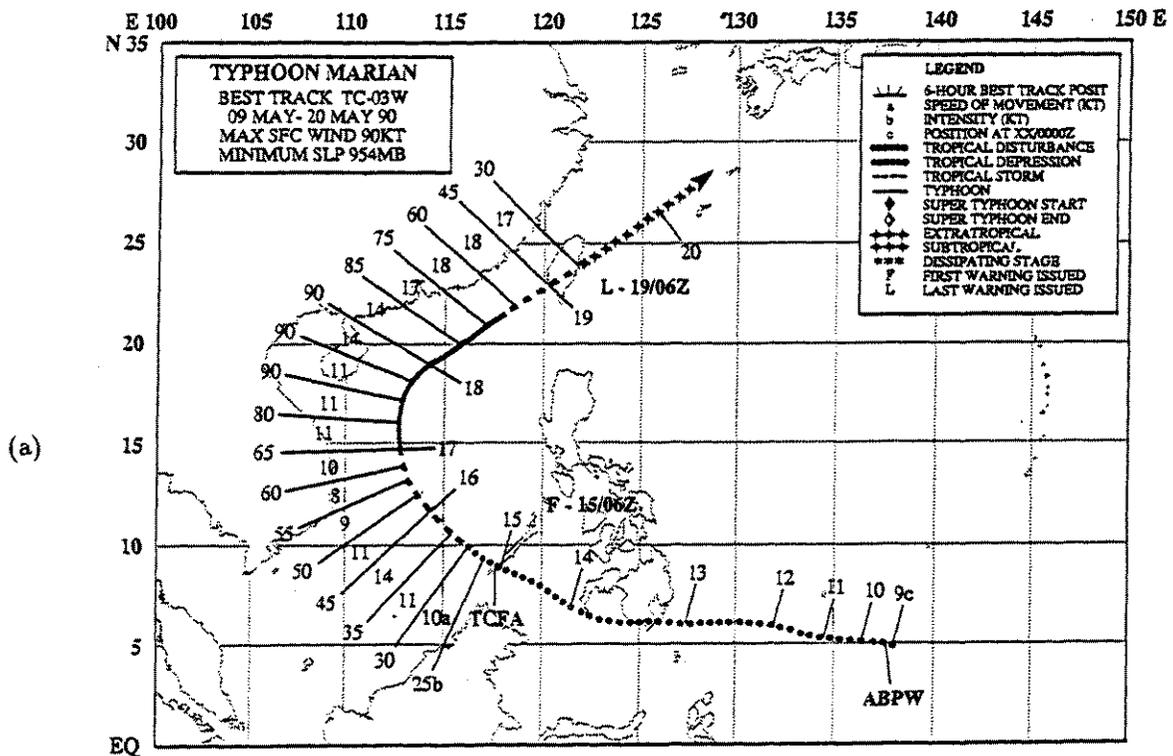


Figure 3.17: Official Best Track of Typhoon Marian (a) and Super Typhoon Owen (b) (adapted from U.S. NOCC/JTWC 1991)