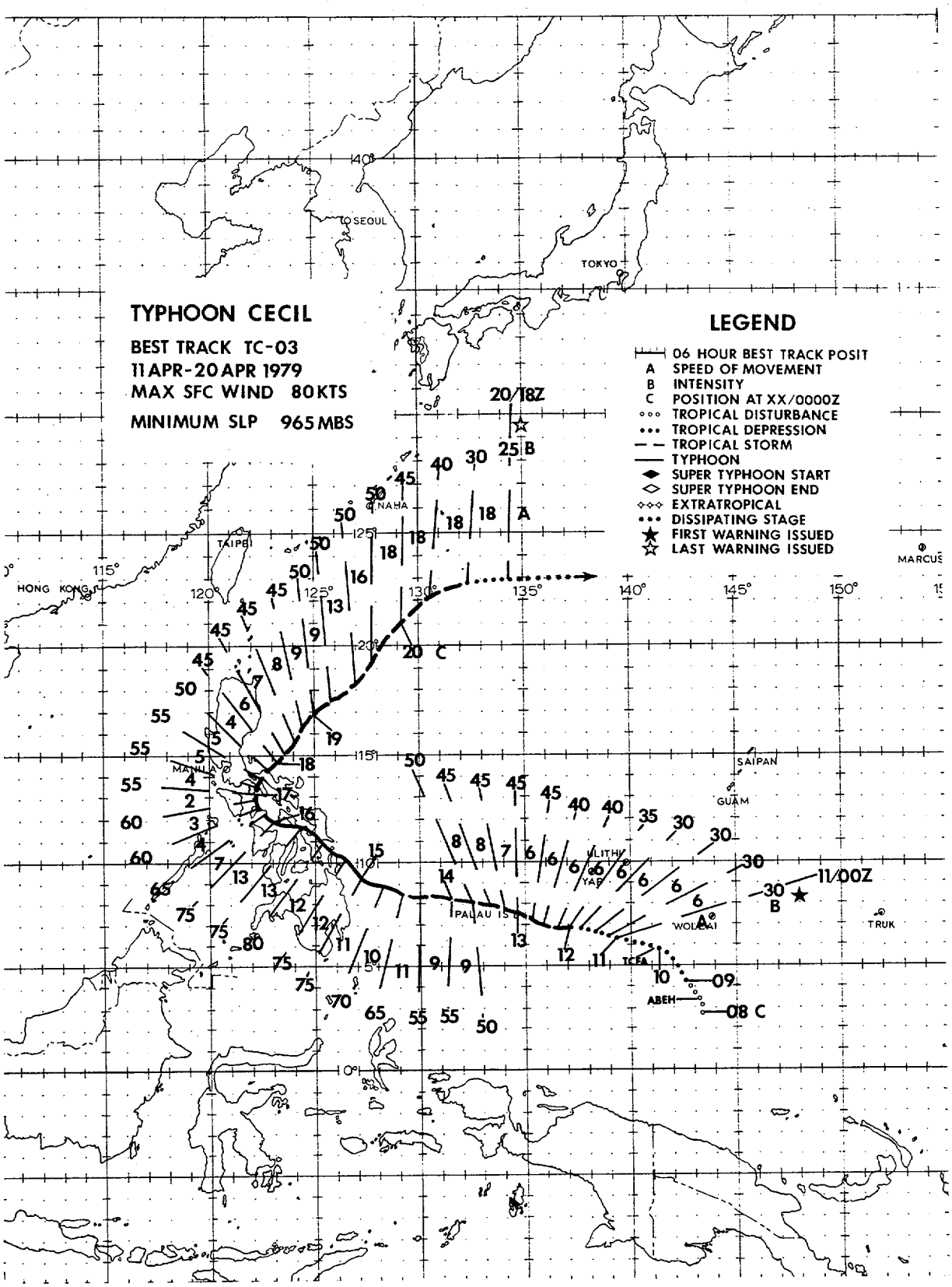
TYPHOON CECIL
BEST TRACK TC-03
11APR-20APR 1979
MAX SFC WIND 80KTS
MINIMUM SLP 965MBS
LEGEND
06 HOUR BEST TRACK POSIT
A SPEED OF MOVEMENT
B INTENSITY
C POSITION AT XX/0000Z
TROPICAL DISTURBANCE
TROPICAL DEPRESSION
TROPICAL STORM
TYPHOON
SUPER TYPHOON START
SUPER TYPHOON END
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED
SEOUL
TOKYO
NAHA
TAIPEI
HONG KONG
MANILA
SAIPAN
GUAM
YAP
PALAU IS
WOLEAI
TRUK
ABEH
MARCUS
20/18Z
11/00Z
09
08 C
140°
135°
130°
125°
120°
115°
145°
150°
20°
15°
10°

Typhoon Cecil, the first tropical cyclone of 1979 in the Northwest Pacific given a male name, generated in mid-April from an easterly wave over the Philippine Sea. Cecil was forecast very well while on a climatological west-northwest track toward the central Philippines. Overall, post-analysis statistics showed that mean forecast errors were better than long-term averages. Nevertheless, JTWC warnings failed to forecast the crucial recurvature point in Cecil's track. Was there sufficient evidence to forecast this recurvature 24-48 hours in advance?

Post-analysis showed that recurvature occurred 36 hours after the 151200Z best track position. Satellite imagery (Fig. 3-03-1) located Cecil just south of Samar. At this time, the 500 mb subtropical ridge axis was at 17N with a small high pressure cell located over Northern Luzon. The 500 mb 36-hour PE prog maintained the ridge. Steering techniques based on this synoptic situation indicated westward movement for 72 hours. Analog techniques indicated west-northwestward movement. As a matter of fact, no objective forecast technique indicated recurvature prior to entrance into the South China Sea. The climatological average location of the 500 mb ridge axis is along 15N for April over the Philippines and the climatological recurvature point is 15-17N. Both synoptic and climatological data indicated a west-northwestward track over the Philippines with recurvature late in the forecast period in the South China Sea as Cecil tracked to the vicinity of 15N. Post-analysis, however, revealed that the ridge axis east of the Philippines abruptly shifted south between 161200Z and 170000Z with westerly winds intruding far to the south over the South China Sea. This pattern shift caused Cecil to recurve much earlier than anticipated. Within 48 hours, Cecil was well east of Luzon (Fig. 3-03-2). The ridge axis shift was the vital piece of information not present in any of the available prognostic tools. Thus, it appears even in post-analysis that forecasting of Cecil's recurvature 36 hours in advance was beyond state-of-the-art capabilities.

Figure 3-03-1. Infrared imagery of Typhoon Cecil 36 hours prior to recurvature with maximum sustained winds of 80 kt (41 m/sec), 15 April 1979, 1225Z. (DMSP imagery)

FIGURE 3-03-2. Cecil after recurvature with maximum sustained winds of 50 kt (26 m/sec), 19 April 1979, 0014Z. (DMSP imagery)