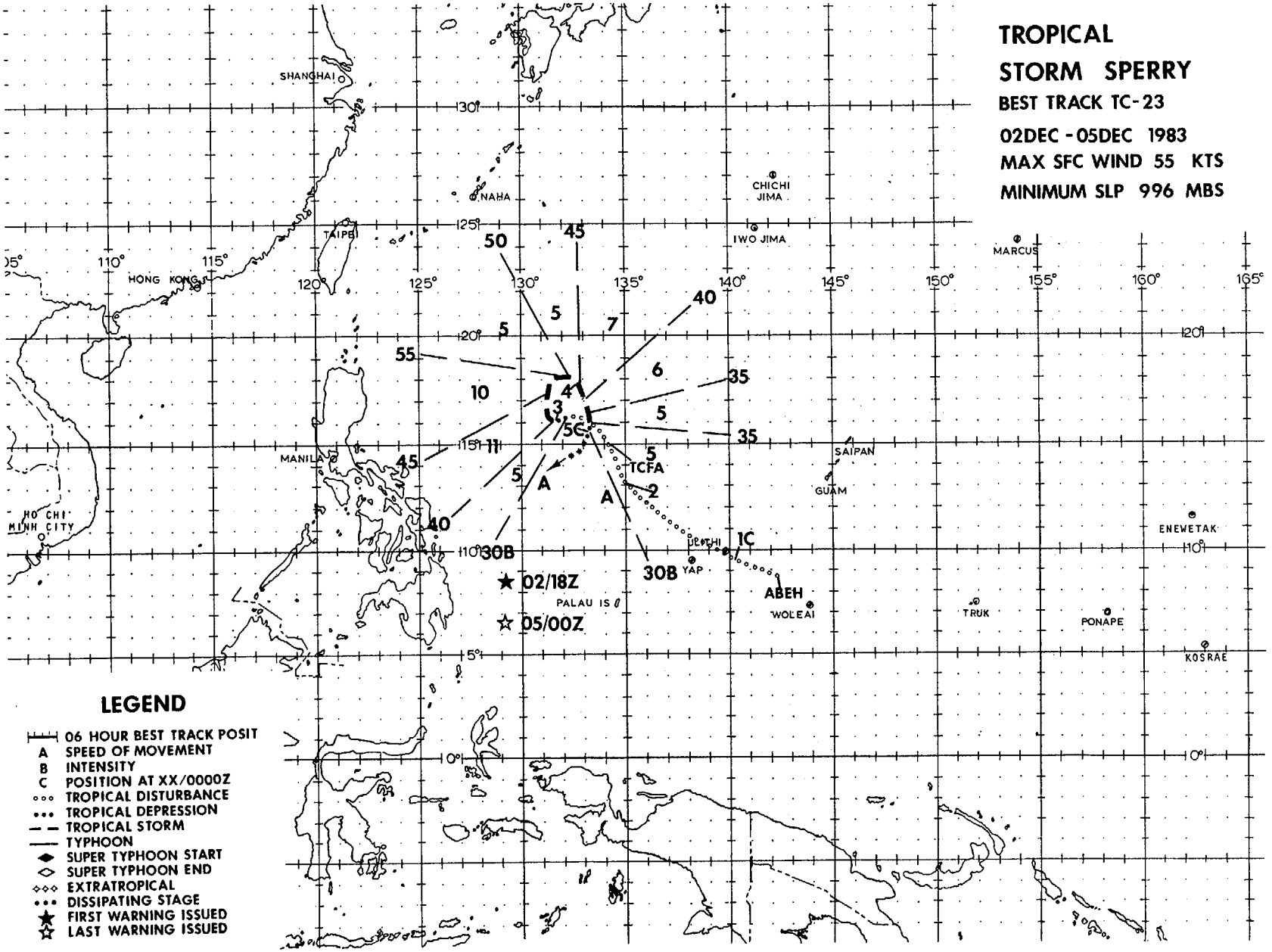
TROPICAL
STORM SPERRY
BEST TRACK TC-23
02DEC - 05DEC 1983
MAX SFC WIND 55 KTS
MINIMUM SLP 996 MBS
SHANGHAI
NAHA
CHICHI JIMA
IWO JIMA
TAIPEI
HONG KONG
MARCUS
MANILA
HO CHI MINH CITY
SAIPAN
GUAM
TCFA
YAP
ABEH
WOLEAI
PALAU IS
TRUK
PONAPE
KOSRAE
ENEWETAK
02/18Z
05/00Z
LEGEND
06 HOUR BEST TRACK POSIT
A SPEED 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

The disturbance which became the 23rd tropical cyclone of the year originated in an elongated band of unorganized convection associated with a near-equatorial trough. This cyclone, eventually called Sperry, was to be a short-lived system, lasting about two and one-half days before dissipating in a manner similar to that of two of its predecessors - Typhoon Orchid and Tropical Storm Ruth.

As the remnants of Tropical Storm Ruth faded away, the monsoon trough became active again and reestablished itself, stretching from the south Philippine Sea eastward to the Marshall Islands. The convective activity covered a broad area between 4-10N and 130-150 E. On the 30th of November, a surface circulation embedded in the trough about 400 nm (740 km) south of Guam appeared to be gaining in organization and intensity. MSLP at this time was 1009 mb and associated winds were 10 to 15 kt (5-8 m/s). Over the following 24 hours, MSLP in the circulation dropped to 1006 mb and convective activity increased significantly.

At this point, it appeared that the circulation was well organized and on its way to becoming a significant tropical cyclone with a few more days of development. However, between 010000Z and 011200Z December, the center of convective activity shifted to a point 500 nm (926 km) to the northwest. This radical shift was accompanied by the development of an upper-level anticyclone over the new location. Continued intensification of the center led to the issuance of a TCFA at 0300Z on the 2nd. Shortly after the issuance of this alert, a reconnaissance aircraft investigated the area and found an elongated surface trough with pressures around 1006 mb and winds of 15-30 kt (8-15 m/s).

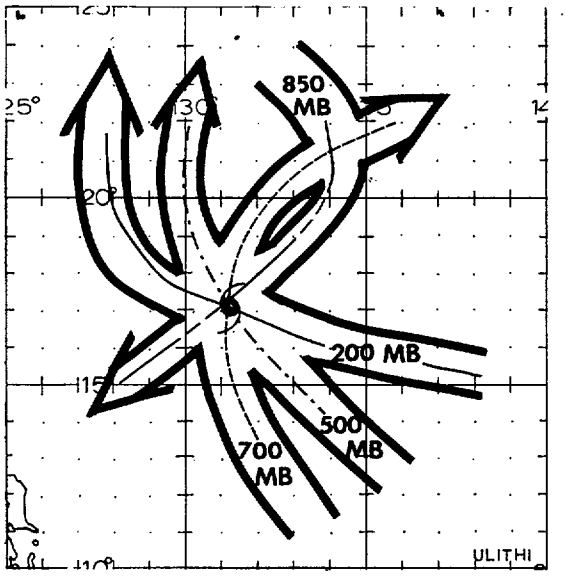

Figure 3-23-1. Diagram illustrating the direction of steering flow at various levels in the vicinity of Sperry.

The first warning on Sperry was issued at 021800Z when analysis of satellite imagery resulted in a Dvorak T-number of 2.5 or 35 kt (18 m/s). The accuracy of this analysis was confirmed a few hours later by reconnaissance aircraft. Data collected by reconnaissance aircraft indicated that Sperry exhibited considerable tilt. The surface center was displaced 30-60 nm (56-111 km) to the south of the 700 mb center. This was not unexpected since the circulation was located in an area of strong vertical shear. Figure 3-23-1 illustrates the steering influences acting on Sperry at the time. Tilting of the system prior to shearing away of the upper portion of the circulation is a common occurrence in this situation. Therefore, it came as a surprise when Sperry regained vertical alignment and intensified. Maximum intensity of 55 kt (28 m/s) was achieved as Sperry turned eastward at 031200Z. Figure 3-23-2 shows Sperry near maximum intensity.

The forecast at this point called for Sperry to complete an anticyclonic loop and dissipate over water as an exposed low-level circulation. This forecast was a radical departure from persistence. Over the previous 18 hours, Sperry had intensified from a tropical depression to an intense tropical storm. At the same time, Sperry's speed of motion doubled as it turned northward, then northeastward. Persistence in this case called for continued northeastward movement and intensification.

Sperry sheared as expected and moved southward while weakening over the next 36 hours. The final warning was issued at 050000Z when data from reconnaissance aircraft indicated that Sperry's MSLP had risen to 1010 mb and maximum sustained winds had dropped to 20 kt (10 m/s).

Figure 3-23-2. Tropical Storm Sperry at maximum intensity while undergoing an anticyclonic loop (031335Z December DMSP infrared imagery).