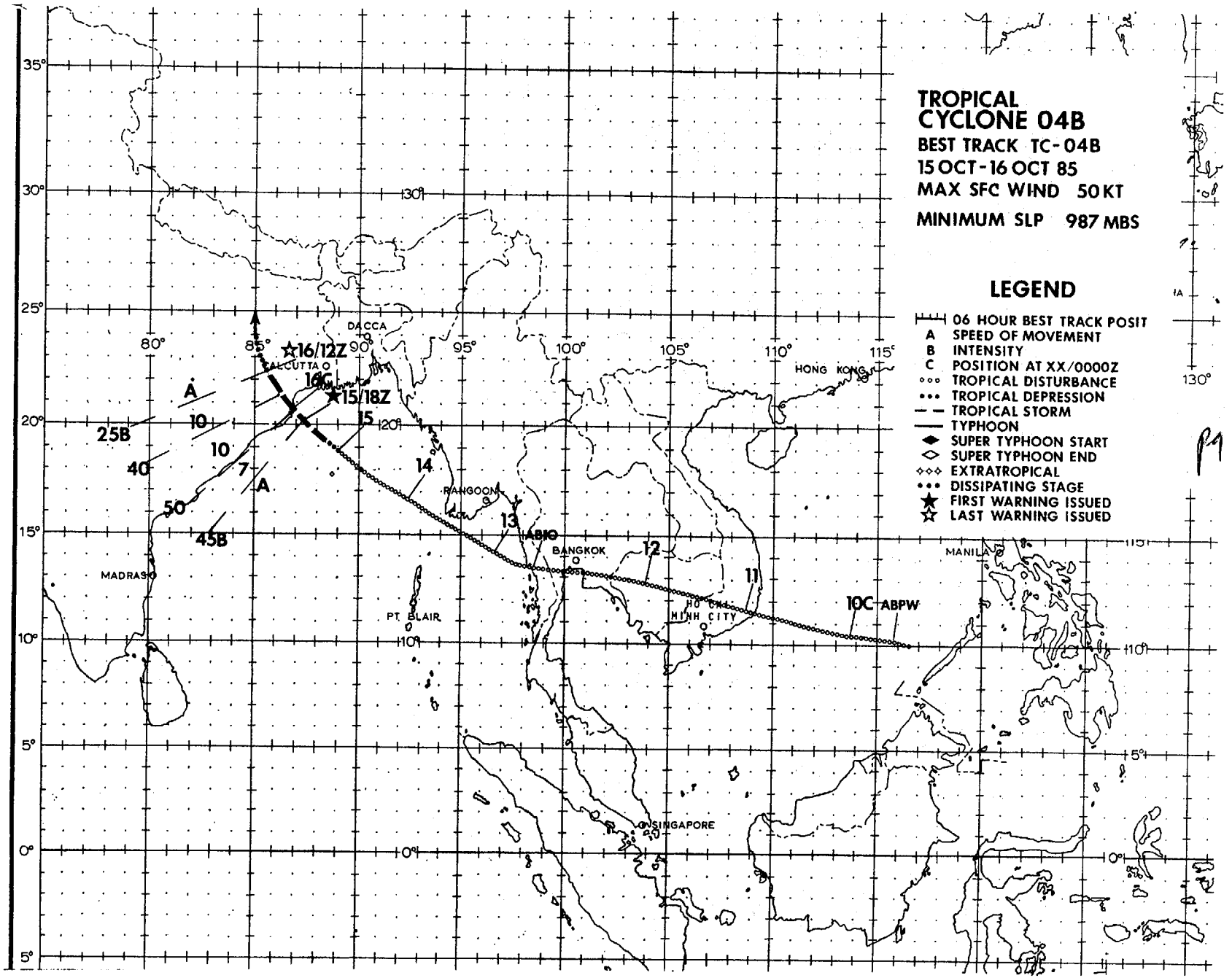
TROPICAL
CYCLONE 04B
BEST TRACK TC-04B
15 OCT-16 OCT 85
MAX SFC WIND 50 KT
MINIMUM SLP 987 MBS
LEGEND
06 HOUR BEST TRACK POSIT
A SPEED OF MOVEMENT
B INTENSITY
C POSITION AT XX/0000Z
TROPICAL DISTURBANCE
TROPICAL DEPRESSION
TROPICAL STORM
TYPHOON
SUPER TYPHOON START
SUPER TYPHOON END
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED
16/12Z
15/18Z
CALCUTTA
DACCA
RANGOON
BANGKOK
HONG KONG
MANILA
MADRAS
PT. BLAIR
HO CHI MINH CITY
SINGAPORE
10C ABPW
ABIO
25B
45B
35°
30°
25°
20°
15°
10°
5°
0°
80°
85°
90°
95°
100°
105°
110°
115°
120°
130°

Despite being in warning status for only 18 hours, Tropical Cyclone 04B had a long life. It was first detected on 9 October, almost a week before the initial warning was issued, as an area of poorly organized convection in the South China Sea. The Tropical Disturbance was developing in the active monsoon trough, midway between Tropical Cyclone 03B in the Bay of Bengal, and a disturbance in the Philippine Sea that would soon develop into Typhoon Cecil.

Satellite fixes of an upper-level circulation center, based on the extrapolation of cirrus and convective curvature, followed the progress of the system as it moved closer to Vietnam. For the next two days, the system continued to move west-northwestward across the Southeast Asian Peninsula. It emerged in the Andaman Sea late on the 12th, still a poorly organized area of convection. The disturbances westward progress was also reflected at the surface, where a 10 to 15 kt (5 to 8 m/s), 1004 mb low pressure center was present.

During the 13th and 14th, the disturbance turned to the northwest, crossed the northern Andaman Sea and entered the Bay of Bengal. Upper-level support remained relatively weak and diffuse. Positioning by satellite imagery, hampered by mid- to high-level cloudiness, was accomplished on these two days mostly by analysis of spiral band curvature and extrapolation of a poorly defined low-level circulation center. With conditions favorable for slow intensification, the minimum sea-level pressure dropped from 1004 mb on the 12th to an estimated 1000 mb late on the 14th. Surface winds showed a corresponding rise, increasing to 25 kt (13 m/s). Early forecasts on the 14th predicted the system would cross the North Orissa-West Bengal Coast late on the 15th.

Early on the 15th, available data showed little change. Synoptic data at 150000Z showed a 30 kt (15 m/s) surface circulation in the north central Bay of Bengal with an upper-level anticyclone located approximately 80 nm (148 km) to the northeast. Since earlier positions had indicated greater separation between the upper- and lower-level systems, this may have signaled the beginning of increased organization. Still, available synoptic data showed no further decrease in pressure nor significant increase in surface winds. On satellite imagery, the system remained broad and diffuse, showing little improvement in organization over the past 24- to 48-hours (Figure 3-31-1). Meanwhile, coastal Bangladesh, with fresh memories of Tropical Cyclone 01B, which killed over 6,000 people in May, braced for the current cyclone still expected to hit the coast late on the 15th. Port cities like Chittagong (WMO 41978), Khulna (WMO 41930) and others were advised to raise cautionary signals and fishing boats were advised to stay near the coast.

As 151200Z data became available, it was obvious that the system had, indeed, developed over the past 6- to 12-hours. Synoptic data from ships located a rapidly developing cyclone about 180 nm (333 km) south of Calcutta (WMO 42809). Minimum sea-level pressure was estimated to be near 990 mb and winds had increased to 45 kt (23 m/s). At 151555Z, an abbreviated Tropical Cyclone Warning Bulletin was issued by JTWC to reflect the latest data which indicated a cyclone had formed. By then, more port cities had hoisted warning signals, low-lying areas were preparing for a possible storm surge of 4 to 7 ft (1 to 2 m) above sea-level, and more fishing boats and trawlers had sought shelter.

At 151800Z, JTWC issued the first complete warning on Tropical Cyclone 04B. Subsequent ship reports had indicated a continued fall in the mean sea-level pressure and confirmed surface winds of 45 kt (23 m/s). Satellite imagery at 151649Z showed a dramatic increase in organization and convection over the past 12-hours. The strongest convection was already onshore, but the low-level circulation center remained offshore and was located on the northeast edge of the strong convection.

By 160000Z, Tropical Cyclone 04B had reached maximum intensity as it made landfall on the coast of India approximately 55 nm (102 km) south of Balasore (WMO 42895) and about 140 nm (259 km) southwest of Calcutta. A large area of strong convection remained associated with the system (Figure 3-04B-2). However, shearing conditions had already begun to disrupt vertical organization and, as the system continued to track inland, more and more convection and organization were lost. The final warning was issued at 161200Z.

At least 38 people were killed, with over 200 reported still missing as late as six days after the storm struck the coast. Most of the missing were from the east Indian state of Orissa where a village was completely washed away by flood waters. Heavy rain-induced flooding combined with storm-induced high tides to swamp offshore islands cutting-off access to more than 500 villages.

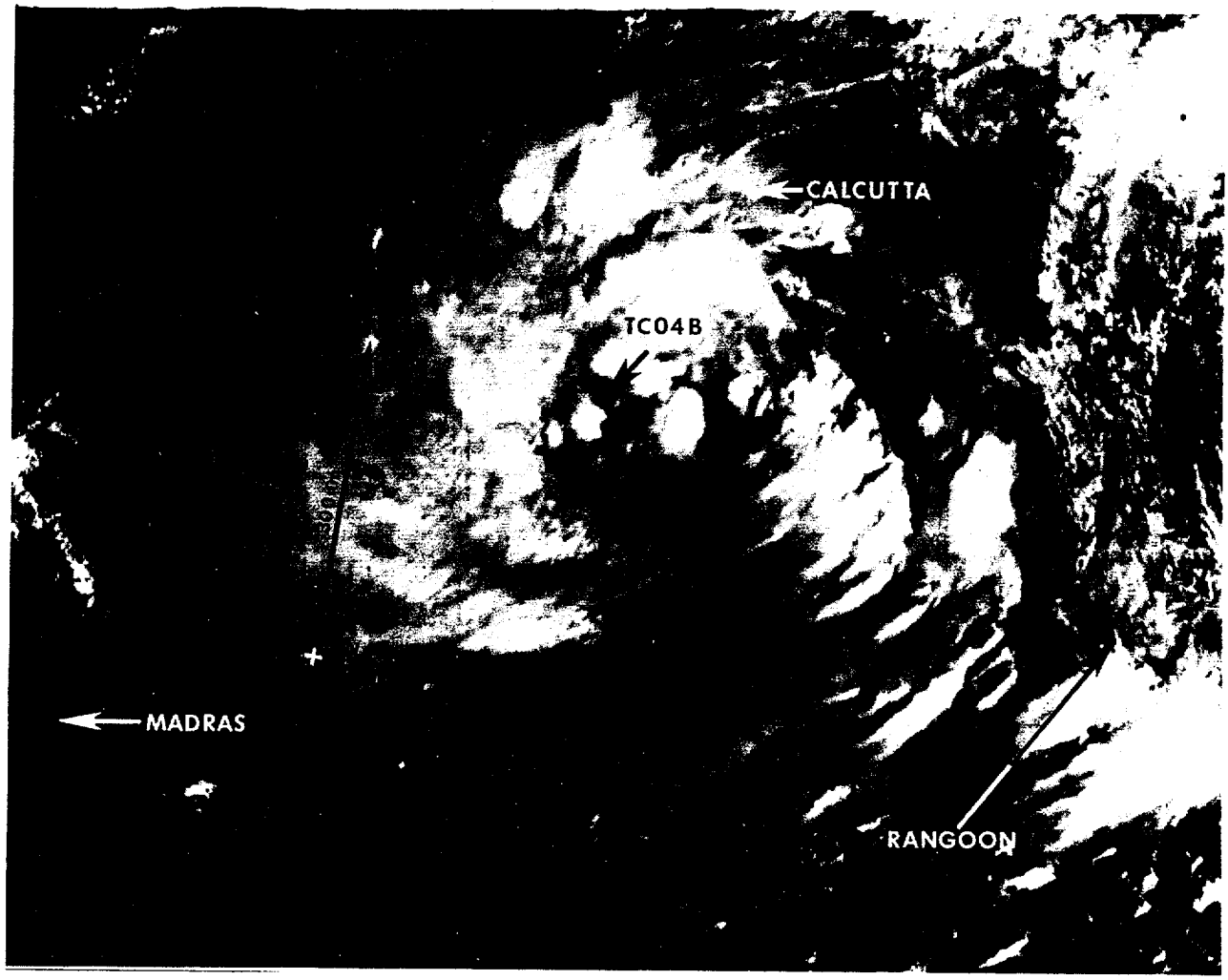

Figure 3-04B-1. The Tropical Disturbance in the Bay of Bengal just prior to undergoing rapid development. The Dvorak intensity estimate is 25 kt (13 m/s) (150408Z October DMSP visual imagery).

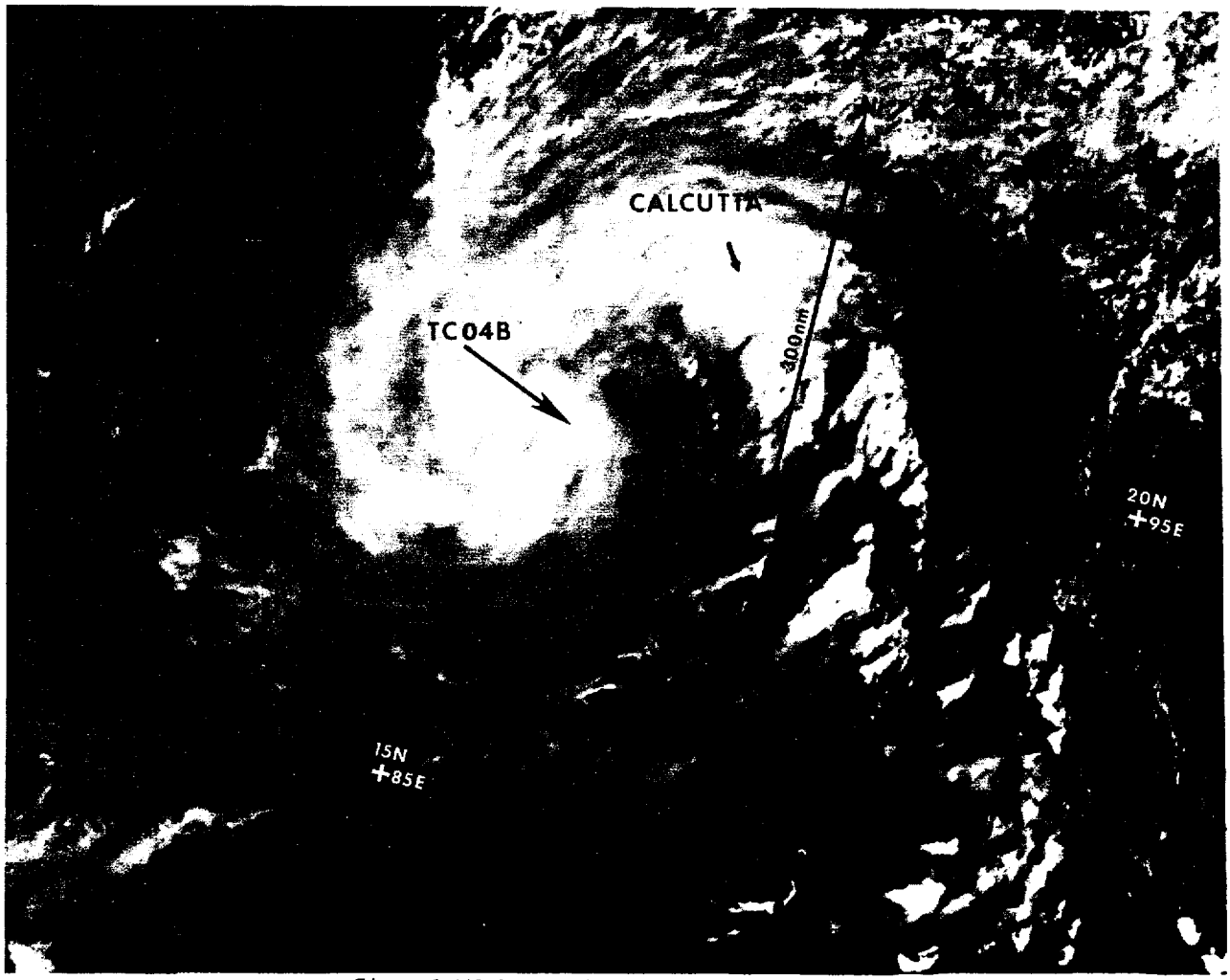

Figure 3-04B-2. Tropical Cyclone 04B just after it made landfall over eastern India. There is a dramatic increase in organization as compared to the imagery in Figure 3-31-1 (160348Z October DMSP visual imagery).