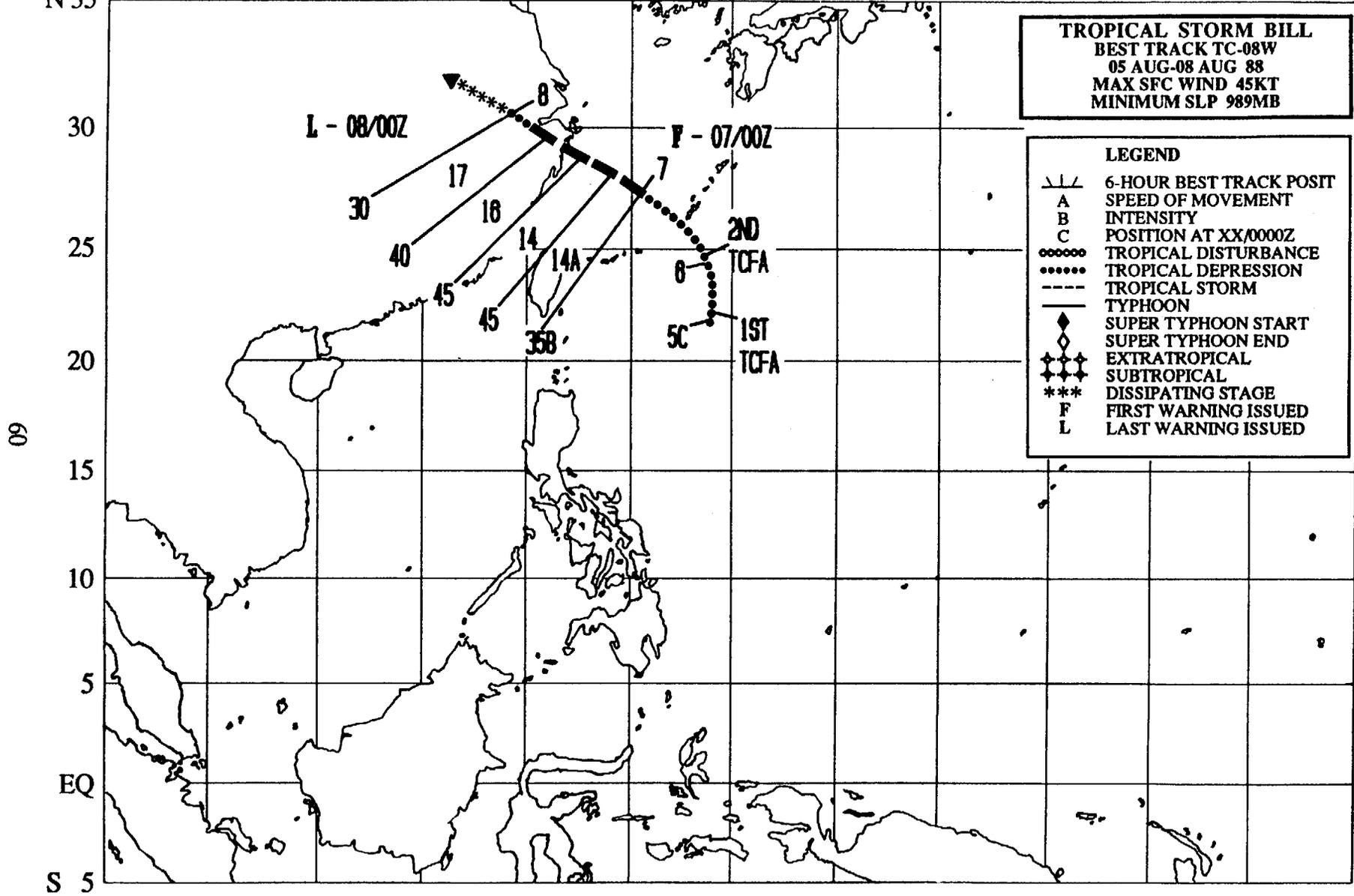


E 100 105 110 115 120 125 130 135 140 145 150 155 160 E

TROPICAL STORM BILL
BEST TRACK TC-08W
05 AUG-08 AUG 88
MAX SFC WIND 45KT
MINIMUM SLP 989MB

LEGEND

- △/△ 6-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
- ◆◆◆◆ SUBTROPICAL
- *** DISSIPATING STAGE
- F FIRST WARNING ISSUED
- L LAST WARNING ISSUED



TROPICAL STORM BILL (08W)

Tropical Storm Bill was the first of five tropical cyclones to develop during the month of August. It formed in the Philippine Sea, brushed by the island of Okinawa and reached a peak intensity of 45 kt (23 m/sec) before making landfall near Shanghai. Bill remained well organized over China, causing widespread destruction and loss of life. It exemplifies the serious impact that is possible from a system of

tropical storm intensity that doesn't dissipate rapidly after moving over land.

On the first day of August the monsoon trough (Figure 3-08-1) stretched from the Gulf of Tonkin across the South China Sea to the Luzon Strait and extended northeastward along the Japanese Islands. By 5 August (Figure 3-08-2) this synoptic feature had undergone a

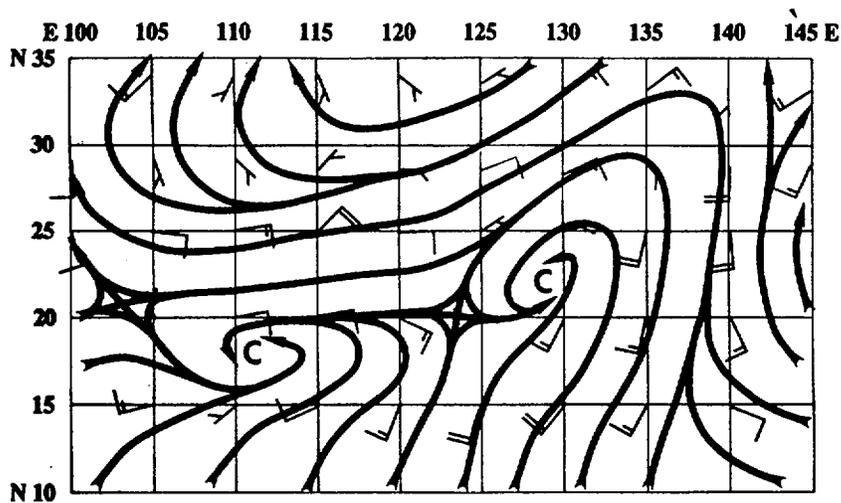


Figure 3-08-1. The 010000Z August 925 mb winds and streamlines show the monsoon trough extending across the South China Sea and northeastward.

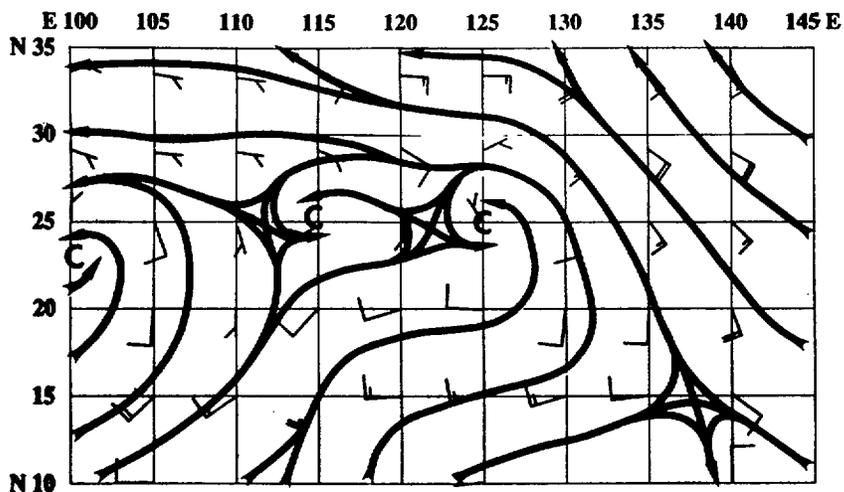


Figure 3-08-2. The 925 mb winds and streamlines for 051200Z, when compared with Figure 3-08-1, reveal the shift of the monsoon trough into China and its abrupt termination near the island of Okinawa, Japan.

major readjustment. Now it was oriented west-to-east over southern China and terminated abruptly near the island of Okinawa, Japan. Excess relative cyclonic vorticity, low-level convergence and associated enhanced convection persisted near the eastern end of the trough. With the environment favorable for tropical cyclogenesis, Bill rapidly consolidated

and at 050430Z the first Tropical Cyclone Formation Alert was issued on the system. Early on 6 August the cloudiness associated with the tropical disturbance (Figure 3-08-3) separated from the maximum cloud zone. As the tropical cyclone moved away from the axis of the monsoon trough, it came under the steering influence of the subtropical ridge to the

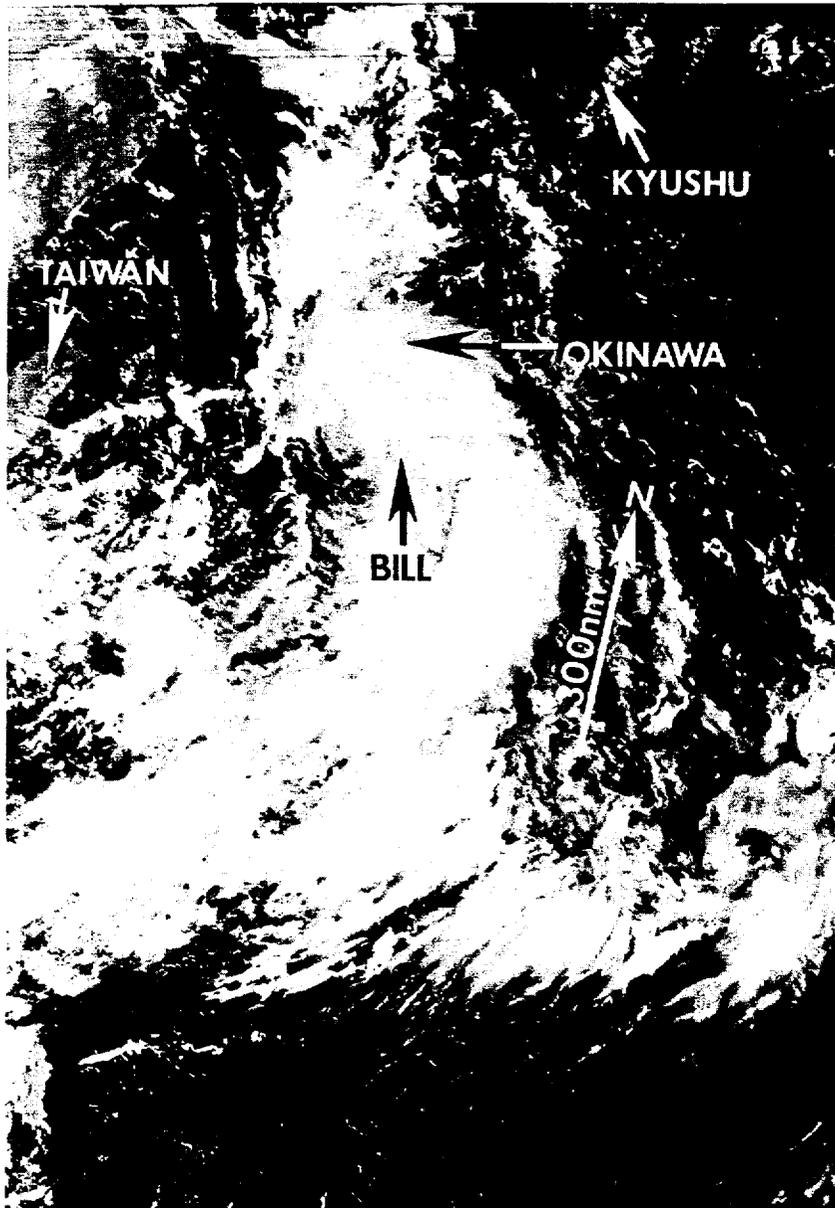


Figure 3-08-3. Bill as a tropical disturbance south of the island of Okinawa (060009Z August DMSP visual imagery).

northeast. The track, which was initially to the north, became northwestward. Consolidation continued, but the pace slowed, and at 060330Z a second Alert was issued. The center of the low-level circulation passed just southwest of the southern tip of Okinawa at 061500Z. Kadena Air Base (WMO 47931) reported a minimum sea-level pressure of 997 mb, sustained surface winds of 20 kt (10 m/sec) and a peak surface gust of 40 kt (21 m/sec). Earlier,

Kadena's 061200Z upper-air sounding indicated a layer between the 875 mb and 550 mb levels of 35 to 40 kt (18 to 21 m/sec) winds, which supported the peak gusts.

Slow intensification progressed and the first warning (070000Z) on Tropical Storm Bill followed a satellite intensity estimate of 35 kt (18 m/sec) (Figure 3-08-4). At 070600Z, Bill reached a peak intensity of 45 kt (23 m/sec) and

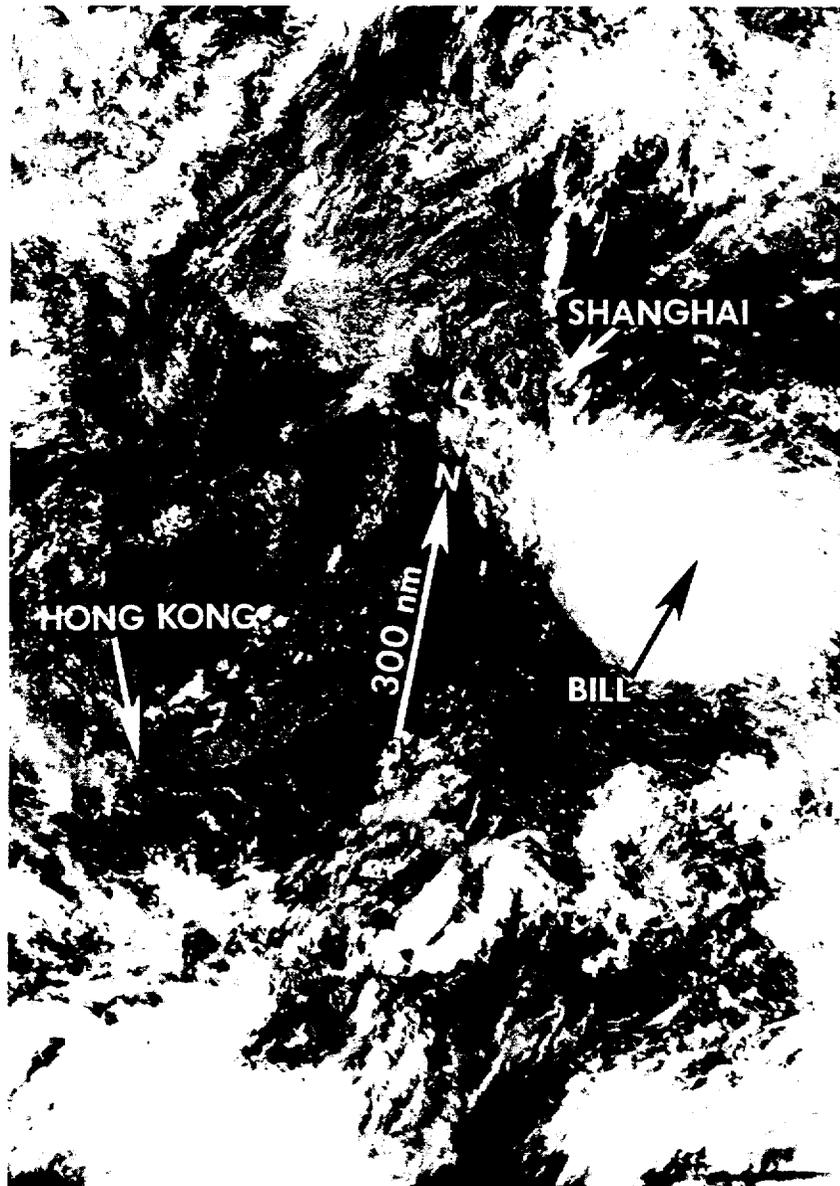


Figure 3-08-4. Bill, shortly after being upgraded to tropical storm intensity (070131Z August DMSP visual imagery).

sustained it until making landfall 120 nm (222 km) south of Shanghai.

Once overland, instead of rapidly dissipating, Bill retained its convection and organization (Figure 3-08-5). At 080000Z, the intensity was downgraded to a tropical depression and the final warning issued. The remains of this cloud system tracked to the northwest and could still be identified on satellite imagery two days later.

Bill's slow dissipation resulted in extensive damage and loss of life in China. Torrential rains led to widespread flooding and local topographic effects may have produced wind gusts as high as 70 kt (35 m/sec). When it was all over, at least 110 people had perished and numerous bridges, dams and watercraft were damaged or destroyed. News releases from China reported "the worst economic loss from a storm in 30 years."

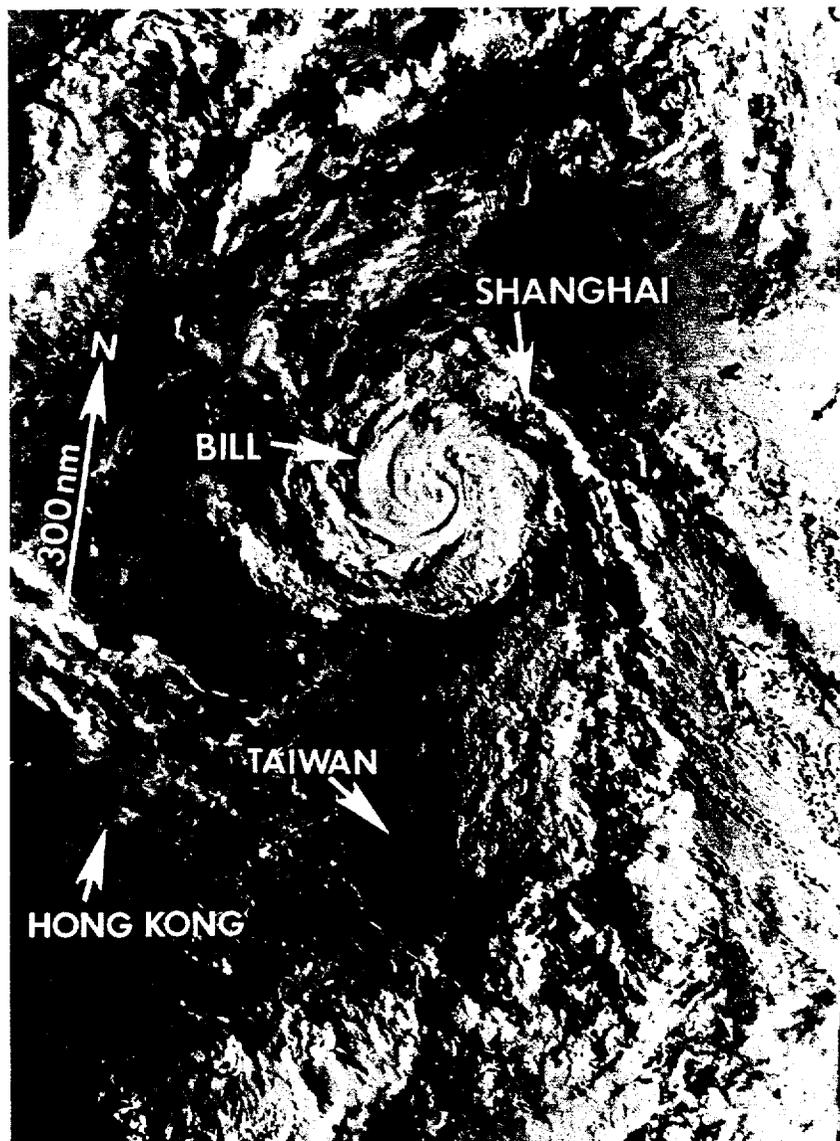


Figure 3-08-5. Tropical Storm Bill continued to be a very well organized system, despite having already been over land for several hours (072156Z August DMSP visual imagery).