

E 100 105 110 115 120 125 130 135 140 145 E

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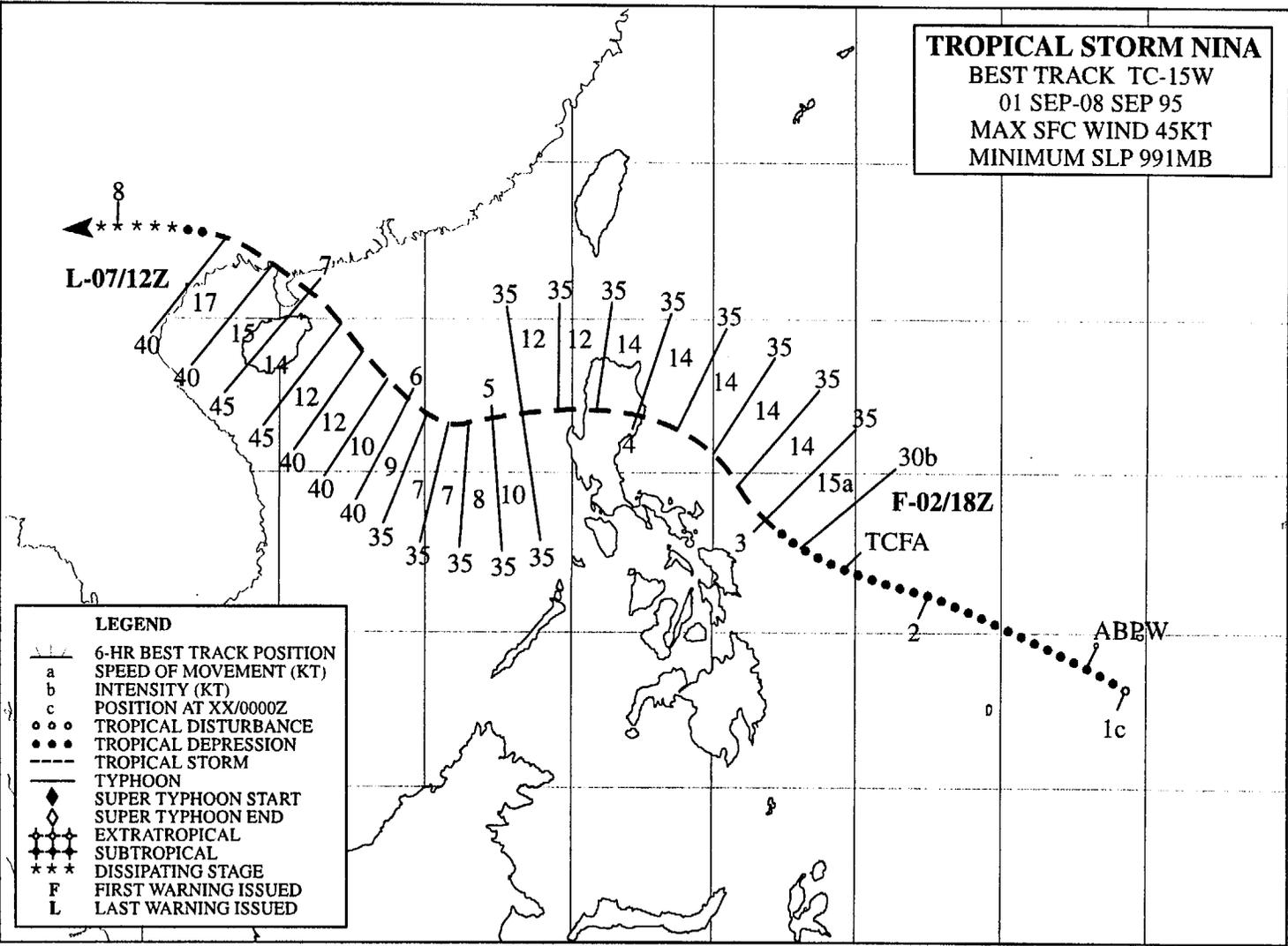
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EQ

TROPICAL STORM NINA
 BEST TRACK TC-15W
 01 SEP-08 SEP 95
 MAX SFC WIND 45KT
 MINIMUM SLP 991MB



LEGEND

- 6-HR BEST TRACK POSITION
- a SPEED OF MOVEMENT (KT)
- b INTENSITY (KT)
- 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 NINA (15W)

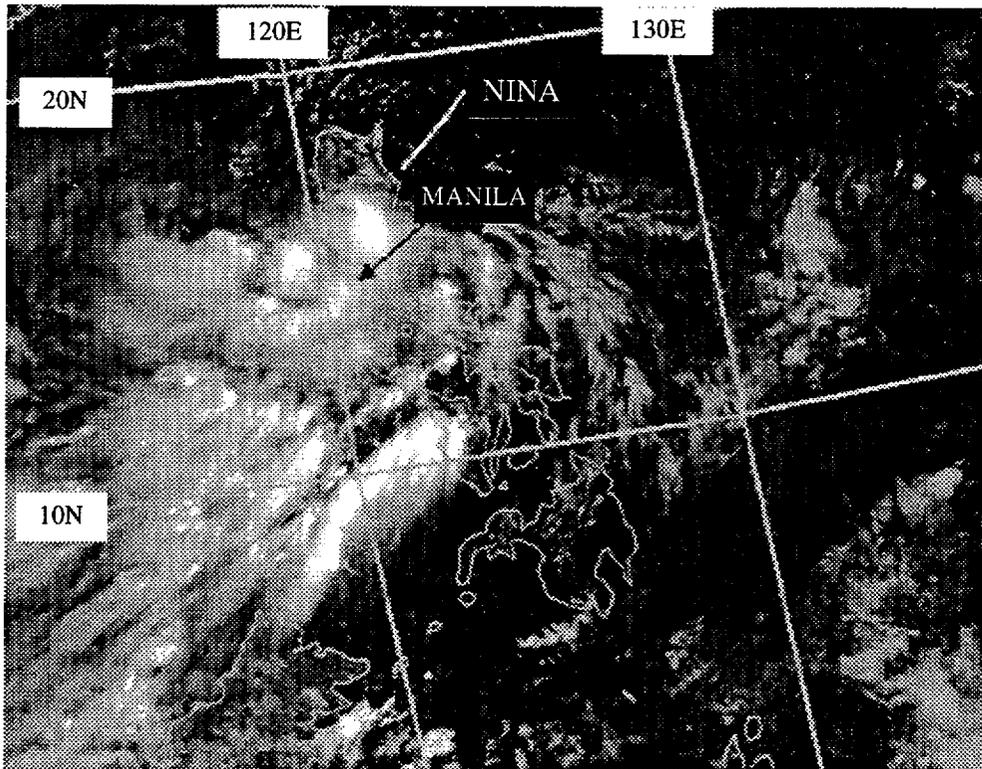


Figure 3-15-1 Tropical Storm Nina just after making landfall on eastern Luzon (040107Z September visible DMSP imagery).

I. HIGHLIGHTS

Nina was one of seven tropical cyclones during 1995 that passed over the Philippines with an intensity of 35 kt (18 m/sec) or greater. Reaching a peak intensity of only 45 kt (23 m/sec), it was one of several slow developing and low-intensity tropical cyclones — a signature characteristic of 1995.

II. TRACK AND INTENSITY

On the afternoon of 01 September, an area of deep convection was first mentioned on the Significant Tropical Weather Advisory, valid at 010600Z. This area, located approximately 400 nm (740 km) south-southwest of Guam, moved rapidly to the northwest. As the disturbance crossed the 130°E meridian, low-level southwesterly monsoon winds increased across the southern Philippines and merged with the disturbance. Based on an increase in the amount of deep convection and improvements in organization, the JTWC issued a Tropical Cyclone Formation Alert valid at 021630Z September. The first warning on Tropical Depression 15W followed, valid at 021800Z. Only six hours after the first warning, TD 15W was upgraded to Tropical Storm Nina.

Moving northwestward at 14 kt (26 km/hr), Nina made landfall on the east coast of Luzon shortly before 040000Z. Nina was poorly organized as it crossed Luzon (Figure 3-15-1), and though satellite intensity estimates indicated 35 kt (18 m/sec), no landfall wind reports were available from PAGASA that indicated more than 15 kt (8 m/sec). The lowest sea-level pressure recorded in the Philippines during Nina's passage was 1003 mb.

Nina slowly intensified once it entered the South China Sea. Under the influence of strong upper-level northeasterly flow, the system was sheared, with most of the deep convection located on the south side (Figure 3-15-2). On the morning of 06 September, Nina's movement changed from westward to northwestward. The system continued on a northwestward track until it made landfall at 070300Z on the Luichow peninsula in southern China. The peak intensity of 45 kt (23 m/sec) was attained eight hours before landfall. The final warning, valid at 071200Z, was issued by the JTWC as Nina dissipated near the China-Vietnam border.

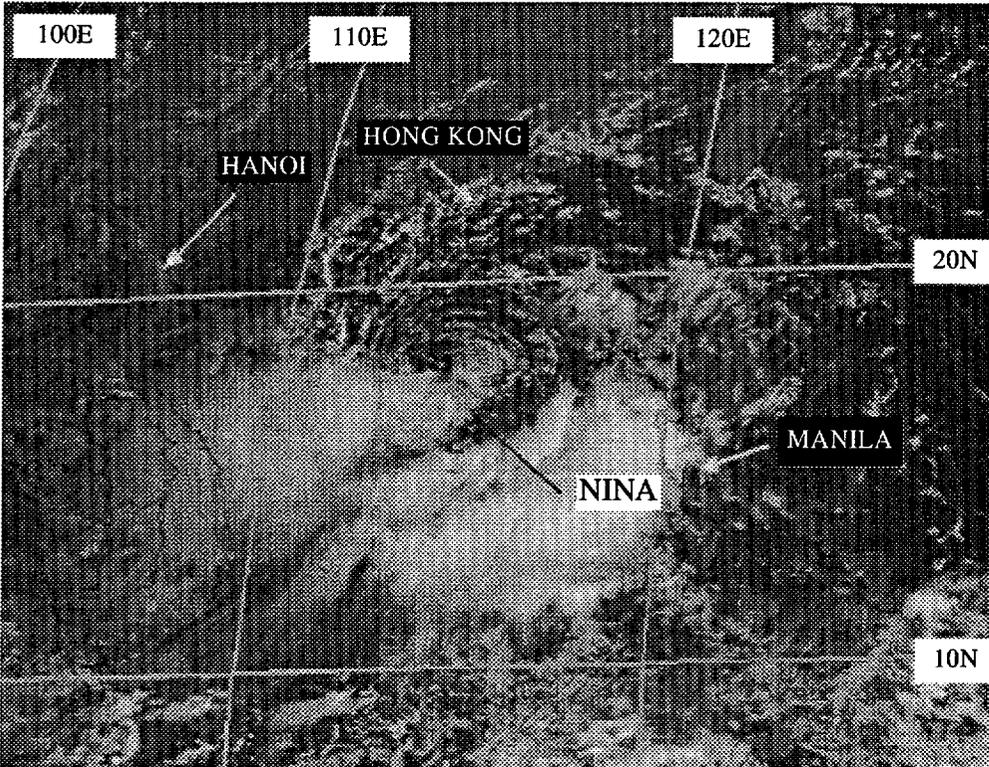


Figure 3-15-2 Thirty-six hours after exiting the Philippines, Tropical Storm Nina, with 40 kt (21 m/sec) one-minute sustained winds, is becoming better organized despite apparent manifestations of northeasterly shear (e.g., the low-level circulation center is partially exposed on the northeastern side of an area of deep convection) (052331Z September visible GMS imagery).

III. DISCUSSION

a. Another low end tropical cyclone during 1995

During 1995, a large proportion of the year's tropical cyclones were weak. Of the 34 significant tropical cyclones only 26 were tropical storms or typhoons, and eight never made it past tropical depression intensity. Of the 26 tropical cyclones that intensified beyond the tropical depression stage, 11 were tropical storms and 15 were typhoons. In all, 19 (56%) of the significant tropical cyclones of 1995 did not mature to become typhoons. The long term annual distribution of tropical cyclones in the western North Pacific stratified by intensity is: 18 typhoons, 10 tropical storms, and three tropical depressions. Thus, of the long-term annual average of 31 significant tropical cyclones in the western North Pacific, a total of 13 (42%) do not mature to become typhoons. The higher proportion of low-end tropical cyclones during 1995 is consistent with the persistent easterly wind flow at low latitudes, and the resulting westward shift of the leading edge of the monsoon trough and the westward shift of the mean genesis latitude.

b. *Dvorak T numbers too low*

From 06-08 September, the Dvorak T-number values were consistently 1.5 to 2.0 T-numbers too low for the observed maximum wind speeds. This result is typical when the Dvorak techniques are applied to tropical cyclones (such as Nina) that possess the characteristics of a monsoon depression. Many tropical cyclones that form in the western North Pacific start out as monsoon depressions. The lack of significant central deep convection within the light-wind core of the typical monsoon depression renders Dvorak's satellite intensity estimation techniques largely inapplicable. Many monsoon depressions that form in the western North Pacific develop peripheral gales before they acquire persistent central deep convection. Persistent central deep convection in the core of a monsoon depression marks its transition into a conventional tropical cyclone to which Dvorak's technique applies.

IV. IMPACT

In the Philippines, at least 50 people perished due to floods and mudslides. Several villages in the Pampanga Province (about 50 nm (95 km) north of Manila) were buried under lahars surging off the slopes of Mount Pinatubo. No reports of damage or injuries in China were received at the JTWC.