

Tropical cyclone Terry 10/01/1976 to 14/01/1976

(i) General

Cyclone "Terry" began on 10 January as a weak low pressure system in the central Indian Ocean. As it progressed westward it developed steadily. By the time it crossed into the Mauritius Tropical Cyclone Region it was a storm of moderate intensity and was continuing to deepen. On entering the Mauritius Region the cyclone's name was changed to "Dance". It moved farther westward and on 21 and 22 January it affected Malagasy.

(ii) Development

"Terry" developed in a pronounced surface pressure trough which was oriented along latitude 10°S between 75 and 100°E longitudes. This trough was marked more by the wind shear between the southeast trades and the equatorial westerlies than by any accompanying convective activity. Apart from the incipient tropical cyclone the trough was far less active than was its counterpart in the northern hemisphere. It was however clearly capable of contributing sufficiently to the low-level vorticity and convergence requirements of the developing cyclone.

Analysis of the upper level meteorological situation indicated an anticyclonic cell to the southwest of "Terry" at all levels from 500 mb to 200 mb. There was thus significant upper divergence together with very light winds and weak vertical shears through the troposphere. In these circumstances enthalpy accumulation occurred with subsequent development of the system into a moderate tropical cyclone.

(iii) Features of the Track (Fig. 4.1)

On the fourth day of its existence tropical cyclone "Terry" moved out of the Northwestern Australian Region into the Mauritius Region. In these first four days it travelled a distance of about 800 km. The track displayed no unusual features. Owing to the complete absence of observations near the cyclone, tracking of the system was based entirely on satellite photographs. These indicated a westsouthwesterly path for the first three days and then a westnorthwesterly movement as the cyclone gained intensity and moved out of the Northwestern Australian Region. The westerly component in the track was retained for the next week as the cyclone reached Malagasy on 21 January.

(iv) Winds

As there were no ship reports from the vicinity of cyclone "Terry" only estimates of winds based on the Dvorak technique for satellite photograph interpretation can be given. On 14 January as the cyclone was approaching maturity sustained winds probably reached 150 km/h.

(v) Seas and Swell

No reports of sea conditions associated with the cyclone are available. However based on wind estimates, seas probably became rough and the swell heavy on 13 January.

(vi) Satellite Photograph Analysis

The only information regarding the development and movement of cyclone "Terry" while in the Northwestern Australian Region was provided by photographs from meteorological satellites.

"Terry" was first visible on 10 January as a cloud mass about 3° diameter. It was estimated to be T 1.5 in the Dvorak classification with ongoing development likely. The cyclone was more organised on 11 January with its centre embedded in an irregular central dense overcast (CDO) of about 1.5° diameter. Outer banding features were not significant at this stage of development. "Terry" continued to deepen at about the typical rate until 13 January when it was estimated to be T 4.5 in the Dvorak scale. (NOAA 4 orbit 5301 130342 GMT). In the photograph NOAA 4 orbit 5314 140246 GMT a cloud covered eye embedded by about 3/4° was visible; the outer banding features were also more pronounced. Together these indicated development to T 5. At this time however the cyclone had moved west of 80°E into the Mauritius area of responsibility.

A summary of the data contained in the satellite photographs is shown in Table 4.1.

Satellite Name	Orbit Number	Date/Time (GMT)	Estimated posn. of centre		Final T No.	Min. Sea Level Pressure (mb)
			°S	°E		
NOAA 4	5264	100256	12.3	85.3	1.5	
	5276	110152	13.2	84.0	2.5	999
	5289	120249	13.7	83.4	3.5	988
	5301	130342	13.8	82.0	4.5	973
	5314	140246	12.8	78.5	5	964