



Australian Government
Bureau of Meteorology

Tropical Cyclone *Jana*

7- 11 December 2003

Perth Tropical Cyclone Warning Centre
Bureau of Meteorology

A. Summary

A tropical low rapidly developed north of Cocos Islands reaching cyclone intensity on 7 December peaking at category 3 intensity as it passed east of the islands before weakening further south on 11 December. Although cyclone advices were issued for Cocos Islands no gales were recorded and there was no known damage caused.

B. Meteorological Description

A low became evident within an active monsoon trough on 6 December. A favourable low shear environment and upper-level outflow to the south allowed for rapid development to occur particularly on 7 December. The low reached cyclone intensity at about 0800 WST when a Quikscat image showed a band of gales in southern quadrants peaking at 50 knots (rain affected). To the north winds were only 20-30 knots with a monsoon gale located in convection further away.

Jana initially tracked eastwards reaching Category 3 status on 8 December before heading southwards on 9 December passing 280 km to the east of Cocos Islands. Maximum intensity of approximately 85 knots (mean wind) was reached at about this time. Increasing wind shear and cool sea surface temperatures weakened the system and *Jana* was downgraded below gale-force intensity on 11 December as it moved westwards.

Motion

Jana initially tracked eastwards under the low to mid-level influences but then turned to the south-southeast on 8 December under the increasing influence of the mid-level ridge to the east. The southerly track continued on 9 December but then turned abruptly to the west the following day as it weakened and strong easterly flow of the lower levels became a more influencing steering factor.

Structure

Following cyclogenesis subsequent satellite images showed increasing curvature in the deep convection. Convection wrapped around to northern quadrants and by early on 8 December a partial eye-wall had developed. Upper level northerlies maintained strong outflow to the south but also resulted in moderate shear. The intensity peaked during the 9th before weakening proceeding the following day.

C. Impact

While cyclone warnings were issued for the Cocos Islands, no gales were recorded and there was no known damaged caused.

D. Observations

There were no recorded observations.

E. Forecast Performance

During the initial eastward phase, models tended to forecast a southerly track and actual forecast positions were biased further to the east to add some degree of persistence to the forecast. The model failure is possibly owing to the over-reliance of the mid-upper level ridge to the east as an influence on the steering during the early development phase. This served to heighten the risk for Cocos Islands and the first of sixteen watch and warning messages was issued at 1300 WST 7 December prior to cyclone formation. Although the risk diminished as the system moved further to the east, advices continued until the system passed to the south given the ongoing risk of marginal gales to the Islands, especially as it was continuing to develop. Forecast positions became more accurate once *Jana* turned to the south on 8 December and most models indicated the change to the west albeit to differing degrees.

Table 1. Best track summary for *Jana* 7- 11 December 2003

Note: Add 8 hours to convert to WST. Refer to best track database for complete track details.

Year	Month	Day	Hour UTC	Position Latitude S	Position Longitude E	Max Wind Knots	Central Pressure hPa	Radius Gales nm
2003	12	6	0000	7.0	93.2	20	1005	
2003	12	6	0600	7.2	93.8	20	1004	
2003	12	6	1200	7.4	94.4	25	1002	
2003	12	6	1800	7.5	95.2	30	1000	
2003	12	7	0000	7.6	95.9	35	995	55
2003	12	7	0600	7.8	96.2	40	992	55
2003	12	7	1200	7.8	96.6	45	990	55
2003	12	7	1800	7.8	97.1	50	985	95
2003	12	8	0000	7.9	97.6	55	980	95
2003	12	8	0600	8.2	98.0	65	970	95
2003	12	8	1200	8.5	98.7	70	965	115
2003	12	8	1800	9.1	99.2	75	965	115
2003	12	9	0000	10.1	99.3	75	960	115
2003	12	9	0600	11.1	99.4	80	955	115
2003	12	9	1200	12.0	99.4	85	950	115
2003	12	9	1800	12.8	99.3	80	950	95
2003	12	10	0000	13.6	99.2	80	955	95
2003	12	10	0600	14.1	98.9	75	960	70
2003	12	10	1200	14.4	98.6	70	965	60
2003	12	10	1800	14.6	98.1	60	975	55
2003	12	11	0000	14.7	97.4	50	985	45
2003	12	11	0600	14.8	96.6	35	990	45
2003	12	11	1200	14.9	95.6	30	995	
2003	12	11	1800	14.9	94.6	25	1000	
2003	12	12	0000	14.8	93.8	25	1002	
2003	12	12	0600	14.7	93.0	25	1002	

Figure 1. Best Track for Tropical Cyclone *Jana*, 6 – 12 December 2003. All times in WST.

