



Australian Government
Bureau of Meteorology

Severe Tropical Cyclone *Emma*

3 -13 December 1984

Perth Tropical Cyclone Warning Centre
Bureau of Meteorology

A. Summary

After developing off coast of Sumatra on 3 December and moving to the southwest, a low reached cyclone intensity overnight from 5 – 6 December and recurved to the southeast. *Emma* intensified to category three intensity overnight from 6 – 7 December before suffering from increased northwest shear and weakening. The system crossed the Pilbara coast near Karratha late on 12 December as a tropical low and no damage is known to have occurred.

B. Meteorological Description

Tropical cyclone *Emma* initially formed along the inter-tropical convergence zone off the southwest coast of Sumatra during 3 December. The low at first moved to the southwest and then recurved to the southeast on 5 December. A south-easterly track was then maintained until after the system crossed the coast.

Cyclonic strength was reached by 1800 UTC 6 December and a gradual deepening continued until a minimum pressure of 966 hPa was reached at 2100 UTC 10 December. The estimated maximum wind speed was 125 km/h. Following recurvature the cyclone was under the influence of north-westerly winds at all levels.

During 11 December the winds above 500mb increased significantly and the cyclone underwent marked acceleration. The increased shear resulted in rapid weakening. Entrainment of cool, relatively dry subtropical air from the southwest may have also contributed to the rapid weakening. A mean translational speed of 35 km/h was maintained over the 24 hours ending 0300 UTC 12 December. No ship observations were available near the cyclone on 10 and 11 December. Maximum wind speed reported was 55 km/h on 12 December.

When *Emma* crossed the coast at 1000 UTC 12 December near 20.8°S, 116.2°E the centre was below cyclonic strength and no gales were recorded. After crossing the coast the low moved on a more easterly track and became absorbed in a broad low pressure centre located across central Australia.

C. Impact

There was no known impact from TC *Emma*.

Table 1 Best track summary for Tropical Cyclone *Emma*, 3 – 13 December. 1984. 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	Rad. of Gales nm
1984	12	3	1800	5.3	102.0		1006	
1984	12	4	0000	5.3	101.0		1004	
1984	12	4	0600	5.5	100.0		1003	
1984	12	4	1200	5.8	99.1		1001	
1984	12	4	1800	6.2	98.5		999	
1984	12	5	0000	6.7	98.1		997	
1984	12	5	0600	7.2	98.0		997	
1984	12	5	1200	7.5	98.0		996	
1984	12	5	1800	7.7	98.1	35	996	
1984	12	6	0000	8.0	98.2	35	995	
1984	12	6	0600	8.2	98.3	35	995	
1984	12	6	1200	8.4	98.6	35	995	
1984	12	6	1800	8.6	98.9	35	994	
1984	12	7	0000	8.7	99.1	35	993	
1984	12	7	0600	8.9	99.3	40	992	
1984	12	7	1200	9.2	99.6	40	991	
1984	12	7	1800	9.5	99.9	40	990	
1984	12	8	0000	9.6	100.1	45	989	
1984	12	8	0600	9.8	100.4	45	988	
1984	12	8	1200	10.2	100.8	45	986	
1984	12	8	1800	10.4	101.5	50	984	
1984	12	9	0000	10.9	102.1	50	981	
1984	12	9	0600	11.3	103.1	55	979	
1984	12	9	1200	11.5	103.6	55	978	
1984	12	9	1800	11.9	104.2	55	975	
1984	12	10	0000	12.4	105.0	60	973	
1984	12	10	0600	13.0	105.8	60	971	
1984	12	10	1200	13.6	106.6	65	969	
1984	12	10	1800	14.2	107.5	65	967	
1984	12	11	0000	14.6	108.3	65	967	
1984	12	11	0600	15.5	109.3	65	969	
1984	12	11	1200	16.6	110.7	60	973	
1984	12	11	1500	17.2	111.6	55	976	
1984	12	11	1800	17.8	112.2	55	978	
1984	12	11	2100	18.3	113.3	50	981	
1984	12	12	0000	19.0	114.3	50	984	
1984	12	12	0300	19.5	115.1	45	987	
1984	12	12	0600	20.0	115.8	40	991	
1984	12	12	0900	20.6	116.1	35	995	
1984	12	12	1200	21.2	116.8		996	
1984	12	12	1500	21.6	117.2		996	
1984	12	12	1800	21.7	117.9		996	
1984	12	13	0000	21.9	119.8		998	
1984	12	13	0600	21.9	119.8		998	

Figure 1. Track of Tropical Cyclone *Emma*
All times in WST.

