



**Australian Government**  
**Bureau of Meteorology**

## **Severe Tropical Cyclone *Mabel***

12 – 21 January 1981

Perth Tropical Cyclone Warning Centre  
Bureau of Meteorology

### **A. Summary**

An east southeast moving tropical low developed into Tropical Cyclone *Mabel* on 13 January well to the north of the Northwest coast. *Mabel* turned to the south on 15 January then southwest the following day reaching peak intensity on 18 January north of Exmouth. After passing west of NW Cape, *Mabel* weakened and dissipated well west of the state on 21 January.

*Mabel* remained over open waters throughout its lifetime. However production losses amounted to considerable cost to industry and some offshore drilling facilities were damaged.

### **B. Meteorological Description**

A monsoonal trough along latitude 11°E was very active for some days prior to 12 January. A weak tropical low developed about 600 km east of Christmas Island and became the dominant circulation associated with the monsoonal trough. The low moved steadily east-southeast and was named as a cyclone on 13 January.

On 14 and 15 January the Pilbara coast was threatened as *Mabel* moved southwards. The threat decreased the following day when the cyclone began moving to the southwest. *Mabel* had a central pressure of 980 hPa when it changed direction from about 320 km north of Port Hedland.

On the 17 January there was confirmation that *Mabel* was still intensifying when enhanced GMS imagery showed a small warm eye. *Mabel* was most intense on 18 January when the central pressure was estimated to be 930 hPa and the maximum wind was 200 km/h. This was the most intense of the Australian region cyclones during the season.

The radar at Learmonth monitored *Mabel* as it moved closer to the coast on 18 and 19 January. By the morning of 20 January the centre was approximately 300 km west of Carnarvon; the cyclone then moved to the northwest and finally dissipated about 600 km west of Northwest Cape on 21 January.

Two oil rigs, the *Regional Endeavour* and the *Southern Cross*, operating off the Pilbara coast were buffeted by cyclone *Mabel*. The *Regional Endeavour* reported north-northeast winds up to 93 km/h on the morning of 18 January with 7 metre seas. A ship located about 75 km northwest of the centre at 1200 UTC on 19 January also

reported winds of 93 km/h (50 knots) from the west southwest. The closest meteorological office to the cyclone was Learmonth which recorded a maximum wind gust of 78 km/h (42 knots) at 0437 UTC on 19 January when the cyclone was about 180 km to the west southwest.

### **C. Impact**

The only damage *Mabel* caused was snapped anchor chains on the *Regional Endeavour* and the *Southern Cross* when the cyclone passed about 90 km west of these oil rigs on 18 January. Both were closed down and personnel evacuated before the onset of the storm. Two of the anchor chains securing the *Regional Endeavour* snapped as high seas, heavy swells, and gale force winds swept the area. The *Southern Cross* lost three anchor chains and drifted a considerable distance from the well hole. A large operation was necessary to recover equipment, relocate the seabed drill site and reposition the rig.

The threat of *Mabel* to the Pilbara coast caused the mining industry in the area to close down temporarily, leading to production losses estimated at \$2 million per day over about three or four days.

Table 1. Best track summary for Tropical Cyclone *Mabel* 12 – 21 January 1981.

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

Year	Month	Day	Hour	Latitude	Longitude	Max Wind Knots	Central Pressure hPa	Radius of Gales nm
1981	1	12	0000	11.8	110.1		1004	
1981	1	12	0600	12.2	111.1		1002	
1981	1	12	1200	12.4	112.3		999	
1981	1	12	1800	12.5	113.3		997	
1981	1	13	0000	12.9	114.1		995	
1981	1	13	0600	13.3	114.8		993	
1981	1	13	1200	13.8	115.6		992	
1981	1	13	1800	14.1	116.6		990	
1981	1	14	0000	14.3	117.4		990	
1981	1	14	0600	14.7	117.8		989	
1981	1	14	1200	15.2	117.9		988	
1981	1	14	1800	15.8	117.9		988	
1981	1	15	0000	16.2	117.8		988	
1981	1	15	0600	16.7	117.7		986	
1981	1	15	1200	17.0	117.5		985	
1981	1	15	1800	17.2	117.3		983	
1981	1	16	0000	17.5	117.2		980	
1981	1	16	0600	17.8	117.0		975	
1981	1	16	1200	17.9	116.8		970	
1981	1	16	1800	18.0	116.5		965	
1981	1	17	0000	18.1	116.2		960	
1981	1	17	0600	18.2	116.0		955	
1981	1	17	1200	18.3	115.7		950	
1981	1	17	1800	18.6	115.2		944	
1981	1	18	0000	18.9	114.8		937	
1981	1	18	0600	19.7	114.0		930	
1981	1	18	1200	20.5	113.3		934	
1981	1	18	1800	21.5	112.8		939	
1981	1	19	0000	22.4	112.4		945	
1981	1	19	0600	23.3	112.2		956	
1981	1	19	1200	24.0	111.9		966	
1981	1	19	1800	24.5	111.4		976	
1981	1	20	0000	24.6	110.8		980	
1981	1	20	0600	24.3	110.1		991	
1981	1	20	1200	24.0	109.6		995	
1981	1	20	1800	23.3	108.9		1000	
1981	1	21	0000	22.5	108.2		1004	

Figure 1. Track of Tropical Cyclone *Mabel* 12 – 21 January 1981.  
All times in WST.

