



Australian Government
Bureau of Meteorology

Severe Tropical Cyclone *Jacob*

31 January – 8 February 1996

Perth Tropical Cyclone Warning Centre
Bureau of Meteorology

A. Summary

A low that moved from the Gulf of Carpentaria across the Northern Territory and northern Kimberley reached cyclone intensity off the NW Kimberley coast on 2 February. *Jacob* maintained a remarkably consistent west southwest track until 5 February keeping about 250 km off the Pilbara coast for much of this time. *Jacob* peaked at category three intensity on the morning of 5 February about 150 km off North West Cape. *Jacob* then slowed and weakened succumbing to increasing shear.

Gale-force winds were experienced at times in coastal areas along the Pilbara coast, however damage was minimal on land.

B. Meteorological Description

Intensity analysis

A tropical low that may have reached marginal cyclone intensity in the Gulf of Carpentaria, crossed the Northern Territory coast near Centre Island on 28 January. Weakening over land, it continued to move to the west southwest across the Northern Territory over the next few days. Upper wind soundings at Darwin and Halls Creek at 0600 WST 31 January indicated that it had a cyclonic circulation to 500 hPa while the low-level centre was just to the southeast of Kununurra. Surface winds were light but mean sea-level pressure in the area was about 1000 hPa. The low then moved along the northern Kimberley coast and passed to the south of Troughton Island around 2000 WST 1 February. *Jacob* was positioned north of a deep subtropical ridge extending up to 200 hPa and moved westward and then towards the west- southwest while intensifying in the weakly sheared environment.

Gales started at Adele Island Automatic Weather Station (AWS) at noon WST 2 February when *Jacob* was about 60 km to the northeast, evidence that the system had reached tropical cyclone intensity. *Jacob* then intensified rapidly as it moved towards an upper trough which extended northwards between Learmonth and Port Hedland. The cyclone reached category three intensity by 2300 WST 2 February. Rowley Shoals AWS recorded a maximum 10-minute wind of 60 knots and a minimum pressure of 974.3 hPa at 1600 WST 3 February, when *Jacob* was about 25 km to the west northwest. The upper trough passed to the south of *Jacob* and the cyclone continued to be steered towards the west-southwest by the deep- layered ridge, with little change in intensity. During this period its eye was just visible on land-based coastal radars as it kept about 250 km off the Pilbara coast. Gale-force winds

were experienced at times along the Pilbara coast. The cyclone generated large waves and a maximum wave height of 12.9 metres was recorded at North Rankin at 1320 WST 4 February.

Jacob attained its maximum intensity with maximum winds of 80 knots at 0900 WST 5 February as upper northwesterly winds were developing south of the cyclone ahead of the next approaching upper trough system. At the time *Jacob* was about 150 km off Northwest Cape. By 0700 WST 7 February upper westerly winds began to impinge on the cyclone as the trough system weakened the deep layered ridge and *Jacob* began a slow southward movement and began to become sheared. By 0800 WST 7 February satellite imagery showed a well-defined low-level centre as the high convective cloud sheared off the centre and the low level circulation dissipated by 0000 UTC 8 February.

Motion

Once *Jacob* had obtained cyclone status the system was steered to the west southwest under the influence of a mid-level ridge axis to the south until it moved south of the upper ridge after midnight on 5 February and was then sheared apart. *Jacob* then drifted slowly south on 6 February until a new low-level ridge to the south steered the low-level remains of *Jacob* westwards on 7 February. The low-level remains of *Jacob* drifted to the southwest on 8 February under the influence of the low-level ridge before dissipating later in the day.

C. Impact

Gale-force winds were experienced at times in coastal areas along the Pilbara coast. However damage was minimal on land. *Jacob* did affect offshore industry with a mobile drilling platform being moved 600 metres even though it was securely anchored.

D. Observations

Wind

Rowley Shoals: 60 knots (10 minute mean) 0800 UTC 3 February 1996.

Pressure

Rowley Shoals: 974.3 hPa at 0800 UTC 3 February 1996

Rainfall

There was no report of significant rainfall associated with *Jacob*.

Table 1. Best track summary for *Jacob*, 1 – 8 February 1996

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 10min knots	Central Pressure hPa	Rad. of Gales nm
1996	02	1	1300	13.8	126.2	35	996	
1996	02	1	1600	13.9	125.5	35	996	
1996	02	1	1900	14.1	125.0	35	994	
1996	02	1	2200	14.5	124.6	35	994	
1996	02	2	0100	14.8	124.2	40	992	
1996	02	2	0400	15.1	123.2	40	990	45
1996	02	2	0700	15.4	123.1	45	985	45
1996	02	2	1000	15.7	122.6	55	980	55
1996	02	2	1300	15.9	122.0	60	975	55
1996	02	2	1600	16.1	121.4	65	970	65
1996	02	2	1900	16.3	120.8	65	970	65
1996	02	2	2200	16.7	120.2	70	965	65
1996	02	3	0100	16.9	119.7	70	965	65
1996	02	3	0400	17.1	119.3	70	965	65
1996	02	3	0700	17.3	118.9	70	965	65
1996	02	3	1000	17.5	118.6	70	965	65
1996	02	3	1300	17.7	118.3	70	965	65
1996	02	3	1600	17.8	117.9	70	965	65
1996	02	3	1900	18.0	117.4	70	965	65
1996	02	3	2200	18.2	117.1	75	960	65
1996	02	4	0100	18.4	116.8	75	960	65
1996	02	4	0400	18.7	116.4	75	960	65
1996	02	4	0700	19.0	115.9	75	960	65
1996	02	4	1000	19.4	115.5	75	960	65
1996	02	4	1300	19.6	115.0	75	960	65
1996	02	4	1600	19.9	114.5	75	960	65
1996	02	4	1900	20.1	114.0	75	960	65
1996	02	4	2200	20.4	113.5	80	955	65
1996	02	5	0100	20.9	113.0	80	955	65
1996	02	5	0400	21.4	112.4	80	955	65
1996	02	5	0700	21.7	111.8	80	955	65
1996	02	5	1000	22.0	111.4	80	955	65
1996	02	5	1300	22.2	111.0	80	955	65
1996	02	5	1600	22.4	110.6	80	955	65
1996	02	5	1900	22.5	110.3	70	965	65
1996	02	5	2200	22.6	110.0	60	975	65
1996	02	6	0100	22.7	109.7	55	980	65
1996	02	6	0400	22.8	109.6	45	985	65
1996	02	6	0700	23.0	109.6	45	985	65
1996	02	6	1000	23.3	109.6	40	990	65
1996	02	6	1300	23.6	109.5	40	990	65
1996	02	6	1600	23.8	109.2	40	990	65
1996	02	6	1900	24.0	108.9	35	995	55
1996	02	6	2200	24.0	108.6	35	995	55

1996	02	7	0100	24.0	108.3	35	995	55
1996	02	7	0400	24.0	108.0	35	995	55
1996	02	7	0700	24.0	107.8	30	998	
1996	02	7	1000	24.1	107.6	25	1000	
1996	02	7	1300	24.2	107.4	25	1002	
1996	02	7	1600	24.3	107.2	20	1004	
1996	02	7	1900	24.4	107.0	0	1006	
1996	02	7	2200	24.6	106.8	0	1006	
1996	02	8	0100	24.8	106.6	0	1008	
1996	02	8	0400	25.1	106.1	0	1008	
1996	02	8	0700	25.5	105.7	0	1008	

Figure 1. Track of Tropical Cyclone Jacob 1 – 8 February 1996
All times in WST.

