Australian Government
Bureau of Meteorology

Severe Tropical Cyclone *Pancho*

18 January-17 February 1997

Perth Tropical Cyclone Warning Centre
Bureau of Meteorology

A. Summary

Tropical cyclone *Pancho* was a long-lived cyclone with a highly convoluted track. The cyclone was named on 20 January when it was north northwest of the Cocos Islands. Its general direction was southeasterly until it stalled near 90°E where it was renamed *Helinda* by the Mauritius Meteorological Service before weakening and finally moving north as a tropical low and re-intensifying, heading south and then west past 90°E. *Pancho/Helinda* finally weakened to below cyclone strength during 4 February and was no longer discernable as a circulation later on 7 February near 19°S 76°E.

B. Meteorological Description

Pancho formed to the southwest of Sumatra during an active phase of the northwest monsoon. There was moderate cross-equatorial northwest flow on the northern side of the low and the genesis region was beneath the upper ridge axis.

Initially the cyclone was in a weak steering environment in the deep monsoonal trough and only moved slowly south. In the wake of a mid-level trough system that moved across the west coast of Australia during 19 January, a weak ridge axis built up to the south of the cyclone, causing it to move in a more southwesterly direction. Intensification was rapid with a maximum wind of 105 knots being reached on 22 January, until during 23 January it came under the influence of an amplifying mid-level trough to its southwest.

TC *Pancho/Helinda* then moved in a southsouthwest direction, weakening as it came under the influence of increasing vertical shear. TC *Pancho/Helinda* weakened below cyclone strength and began moving northwards on 26 January. A presumed explanation for this movement was that it was in the southerly stream on the western flank of a deep monsoonal low situated near 15°S 105°E.

It then moved into the strong monsoon northwesterly flow, intensified and commenced a southeast track. During this period a new mid-level high pressure system was building to the south of the cyclone. Gradually during 29 January the cyclone moved southwards from the monsoon-influenced steering regime and began a south southeast track as it came under the influence of the mid-level ridge to its south. TC *Pancho/Helinda* remained under the influence of this steering regime until 2 February where yet another mid-level amplifying trough approached from the

southwest and steered the cyclone towards the southeast, weakening the system to below cyclone strength during 4 February. The remnants of TC *Pancho/Helinda* then drifted to the west in the low-level easterly steering regime.

Although during its lifetime a reasonable estimate of the radius to gales occurred only once when it passed about 160 km west of Cocos Island, TC *Pancho/Helinda* appeared to always to be a reasonably small system. During its long lifetime it had two major intensification and weakening periods. Both intensification periods were as the mid-level ridge intensified to the south of the cyclone. The two weakening periods coincided with major mid-level troughs approaching from the southwest, though the troughs were not reflected in the lower levels, thus putting the cyclone into an increasingly sheared environment

C. Impact

On 20 January, passing about 160 kilometres to the west of the Cocos island at its closest point, *Pancho* caused marginal galeforce conditions on the islands.

D. Observations

Wind/Pressure
Estimated minimum central pressure: 915 hPa at1000 UTC 21 January
Estimated average maximum wind speed: 110 knots (204 km/h)
Estimated radius to gales: 150 kilometres

Rainfall
There was no report of significant rainfall associated with TC *Pancho*.

Table 1. Best track summary for *Pancho, 18 January – 7 February 1997*
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
1997	01	18	0700	9.6	96.2	0	1006	
1997	01	19	0700	9.3	95.6	20	1004	
1997	01	19	1300	9.5	95.9	25	1002	
1997	01	19	1900	9.6	96.0	30	998	
1997	01	20	0100	9.8	96.2	35	995	55
1997	01	20	0700	10.0	96.3	40	990	55
1997	01	20	1000	10.2	96.2	45	985	55
1997	01	20	1300	10.5	96.3	55	980	55
1997	01	20	1600	10.8	96.2	60	975	80
1997	01	20	1900	11.1	95.9	70	965	80
1997	01	20	2200	11.3	95.7	80	955	80
1997	01	21	0100	11.5	95.4	95	940	80
1997	01	21	0400	11.7	95.1	105	925	80
1997	01	21	0700	11.9	94.8	110	915	80
1997	01	21	1000	12.2	94.5	110	915	80
1997	01	21	1300	12.4	94.1	110	915	80
1997	01	21	1600	12.6	93.6	110	915	80
1997	01	21	1900	12.7	93.1	110	915	80
1997	01	21	2200	12.8	92.6	110	915	80
1997	01	22	0100	12.9	92.1	105	920	80
1997	01	22	0400	13.0	91.7	105	925	80
1997	01	22	0700	13.1	91.3	100	930	80
1997	01	22	1000	13.1	91.0	95	935	80
1997	01	22	1300	13.2	90.7	95	940	80
1997	01	22	1600	13.2	90.5	90	945	80
1997	01	22	1900	13.2	90.3	90	945	80
1997	01	22	2200	13.3	90.1	90	945	80
1997	01	23	0100	13.3	89.9	95	940	80
1997	01	23	0400	13.4	89.7	95	935	80
1997	01	23	0700	13.4	89.7	95	935	80
1997	01	23	1000	13.5	89.7	95	940	80
1997	01	23	1300	13.6	89.8	90	945	80
1997	01	23	1600	13.7	89.9	85	950	80
1997	01	23	1900	13.9	90.0	80	955	80
1997	01	23	2200	14.0	90.1	75	960	80
1997	01	24	0100	14.1	90.2	65	970	80
1997	01	24	0400	14.1	90.2	55	980	80
1997	01	24	1000	14.1	90.2	45	985	80
1997	01	24	1600	14.2	90.3	40	990	80
1997	01	24	2200	14.3	90.4	40	990	80
1997	01	25	0400	14.4	90.5	40	990	80
1997	01	25	1000	14.5	90.6	40	990	80
1997	01	25	1600	14.6	90.6	40	990	80

1997	01	25	2200	14.7	90.7	40	990	80
1997	01	26	0100	14.7	90.7	40	990	80
1997	01	26	0400	14.6	90.4	40	990	80
1997	01	26	0700	14.4	90.6	40	990	80
1997	01	26	1000	14.2	90.6	35	995	80
1997	01	26	1600	13.7	90.6	30	998	80
1997	01	26	2200	13.3	90.6	30	998	80
1997	01	27	0400	12.9	90.6	30	998	80
1997	01	27	0700	12.6	90.6	30	998	80
1997	01	27	1000	12.0	90.9	30	998	80
1997	01	27	1600	11.2	91.1	35	995	80
1997	01	27	2200	10.4	91.3	40	990	80
1997	01	28	0400	10.0	91.5	45	985	80
1997	01	28	1000	10.0	91.6	45	985	80
1997	01	28	1600	10.1	91.9	55	980	80
1997	01	28	2200	10.3	92.4	55	980	80
1997	01	29	0100	10.6	92.7	60	975	80
1997	01	29	0400	11.0	92.9	60	975	80
1997	01	29	0700	11.4	93.1	60	975	80
1997	01	29	1000	11.8	93.1	60	975	80
1997	01	29	1600	12.6	92.9	60	975	80
1997	01	29	2200	13.3	92.6	60	975	80
1997	01	30	0100	13.7	92.4	60	975	80
1997	01	30	0400	14.0	92.1	60	975	80
1997	01	30	1000	14.4	91.2	65	970	80
1997	01	30	1600	14.7	90.4	65	970	80
1997	01	30	2200	15.0	89.6	70	965	80
1997	01	31	0400	15.2	88.8	70	965	80
1997	01	31	0700	15.2	88.5	70	965	80
1997	01	31	1000	15.2	88.1	75	960	80
1997	01	31	1600	15.1	87.5	75	960	80
1997	01	31	2200	15.1	86.9	80	955	80
1997	02	1	0100	15.0	86.6	85	950	80
1997	02	1	0400	15.0	86.3	90	945	80
1997	02	1	0700	15.0	86.0	95	940	80
1997	02	1	1000	15.1	85.7	95	940	80
1997	02	1	1600	15.4	85.3	95	940	80
1997	02	1	2200	15.6	85.0	95	935	80
1997	02	2	0100	15.8	84.9	95	940	80
1997	02	2	0400	16.0	84.9	90	945	80
1997	02	2	0700	16.3	85.0	85	950	80
1997	02	2	1000	16.6	85.2	80	955	80
1997	02	2	1600	17.0	85.5	70	965	80
1997	02	2	2200	17.3	85.7	70	965	80
1997	02	3	0400	17.6	85.9	65	970	80
1997	02	3	1600	17.9	86.4	55	980	80
1997	02	4	0400	18.2	87.0	40	990	80
1997	02	5	0400	19.4	84.1	25	1000	
1997	02	6	0700	20.4	81.2	25	1000	
1997	02	7	0700	18.8	76.2	25	1000	

Figure 1. Track of Tropical Cyclone *Pancho*, 19 January – 7 February1997.
All times in WST.