

Tropical Cyclone Vanessa 15/01/1976 to 28/01/1976

(i) General

"Vanessa" was the fifth cyclone of the season. It developed slowly as it moved westwards from the Broome area and changed course twice before finally filling.

Although it did not cross the coast it affected most coastal communities between Broome and Albany during its lifetime.

(ii) Development

"Vanessa" developed as a closed low to the south of the ITCZ on 15 January. From that time until it reached maximum intensity on 24 January "Vanessa" developed only slowly but from that point on it weakened rapidly.

The prevailing synoptic situation during the entire life of the cyclone consisted of an intense high to the southwest of the State and a series of low pressure troughs developing along the west coast and then moving eastwards.

The cyclone finally moved south into one of these troughs and dissipated.

(iii) Features of the Track (Fig. 5.1)

As a tropical depression, "Vanessa" moved slowly westwards until it reached cyclone intensity when it changed direction and began moving to the northwest.

During the night of 21 January it again changed direction, this time to the southeast.

Just before "Vanessa" reached maximum intensity, early on 24 January, it again altered its direction of movement. After this time it moved in a generally southerly direction and weakened.

"Vanessa" was at its closest point to the west coast during the afternoon of 25 January when it was about 130 km to the west of Exmouth.

By 28 January it had weakened so much it was no longer recognisable as a cyclone. At this time it was about 500 km west of Perth.

(iv) Rainfall, Flooding and Flood Damage

Cyclone "Vanessa" caused some rain at most coastal stations between Kuri Bay and Cape Leeuwin during its life, however, no abnormally high rainfall figures were reported. No flooding or flood damage resulted.

(v) Winds and Wind Damage

The maximum winds reported at land stations were in the Exmouth area during 25 January. Winds as high as 75 km/h (42 kn) were reported, but only superficial wind damage occurred. A gust of 87 km/h (47 kn) was recorded in Perth on 28 January.

A good selection of ship reports were available during "Vanessa's" life, particularly during its period of maximum intensity.

The maximum wind reported was from the "Iron Hunter" which at one point experienced winds of about 260 km/h. In all 38 reports of winds exceeding gale force (63 km/h) were received from ships during the period. A selection of these reports is shown in Table 5.1, although the wind from the "Iron Hunter" mentioned above is not included as the report became available at a later date.

(vi) Sea, Swell, Storm Surges and Related Damage

Seas as high as 7.5 m and swell as high as 10.0 m were reported by ships. No surge or sea damage was reported but heavy seas caused some disruptions to coastal shipping services.

(vii) Satellite Analysis

Imagery from both ESSA 8 and NOAA 4 were available to depict the various stages of development of cyclone "Vanessa". The data from selected visual images of NOAA 4, giving the position of the storm, the T number according to the Dvorak classification and the central pressure are set out in Table 5.2.

On 15 January an area of enhanced activity was evident in the general monsoonal flow just west of Broome. This cloud cluster slowly developed until it reached cyclone intensity on 18 January. Slow development continued, with a ragged eye becoming visible on 21 January. The cyclone reached its peak intensity on 24 January and then weakened rapidly as it moved southwards.

Table 5.1 Selected Ship Reports

Ship	Position		Date/ Time (GMT)	Bearing Distance from centre (km/h)	Wind Direction/ Speed (km/h)	Sea (m)	Swell (m)	Weather	Pressure (mb)
	°S	°E							
Atsuta Maru	13.2	111.4	220000	010/250	270/ 67	0.5	4.5W	Past Showers	998.0
Kansk	18.0	113.5	240000	280/ 40	170/ 96	7.5	-	Rain	989.1
Bogong	19.3	113.0	240600	200/130	170/102	2.5	3.0E 6.5SE	Rain	995.3
Iron Hunter	19.5	113.8	241000	170/115	110/ 93	-	-	Rain	989.5
Bogong	19.3	113.1	241500	250/ 85	150/111	5.0	10.0SE	Rain	987.2
Iron Hunter	19.3	114.0	241600	160/ 60	090/ 93	-	-	Rain	980
Bogong	19.2	113.2	241800	280/ 35	150/167	5.0	5.0Se 5.0E	Rain	979.8
Iron Hunter	19.4	114.4	242200	060/110	340/120	-	-	Rain	982.5
Bogong	18.3	113.7	250300	360/280	260/ 96	4.0	5.0W	Rain	987.3
Havmann	25.4	109.3	261500	270/110	180/111	-	-	Rain	999
Pioner Skayazorka	32.9	114.4	280000	110/390	020/ 69	-	-	-	1006

Table 5.2

Data from Satellite Photographs

Satellite Name	Orbit Number	Date/Time (GMT)	Estimated posn. of centre		Final T No.	Min. Sea Level Pressure (mb)
			°S	°E		
NOAA 4	5325	142347	17.8	121.9	41.0	1000
	5338	160042	18.2	118.1	1.0	997
	5350	162342	18.2	117.0	1.5	996
	5363	180037	17.9	114.3	2.5	994
	5376	190132	16.2	113.4	2.5	992
	5388	200032	15.2	111.7	3.0	990
	5401	210127	14.6	111.0	3.5	984
	5413	220027	15.3	111.0	4.0	978
	5426	230122	16.7	113.7	5.0	962
	5438	240022	18.1	113.8	5.5	950
	5451	250117	20.3	113.5	4.5	970
	5463	260017	23.2	111.0	3.0	986
	5476	270112	26.9	110.0	2.0	995
	5480	280013	31.8	110.4	1.0	1000