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## ***Preliminary Report on Tropical Cyclone Lusi*** **6 - 12th October 1997**

Tropical Cyclone LUSI was the first cyclone to develop in the Regional Specialised Meteorological Centre - Nadi (RSMC-Nadi) area of responsibility during the 1997/98 season.

A weak low pressure was first analysed about 220 kilometres east of Santa Cruz Island from midnight on the 7th of October. The system remained poorly organised and drifted slowly westwards for the next 36 hours. Overnight, the depression showed signs of improvement in organisation. It developed rapidly during the night and began moving towards the southeast.

It was officially named 'Lusi' by RSMC-Nadi at midnight on the 9th when it reached tropical cyclone status with gale force winds (>33 knots<sup>1</sup>) completely surrounding the centre. The international marine gale warning issued at this time also suggested that winds near the centre were expected to increase to 45 knots in the next 12 to 24 hours. Six hours later, after undergoing quite rapid intensification, the marine warning was upgraded to storm status with winds within 120 nautical miles (220 km) of centre expected to increase to 50 knots in the next 12 to 24 hours.

At 11.00 am on the 10th, when Lusi was still centred about 800 km to the west-northwest of Rotuma, this island was put on Tropical Cyclone Alert with the issuance of the first Special Weather Bulletin (SWB). The bulletin indicated a steady southeastward movement at about 18 km/hr (10 knots). However, there was also a possibility of the cyclone taking a more easterly track which would allow it to pass closer to Rotuma. Six hours later, with Lusi located about 900 km to the northwest of Nadi and starting to move more south-southeastwards, Fiji was placed on Tropical Cyclone Alert. At this stage average winds near the centre were estimated at 85 km/hr (45 knots) with momentary gusts to 120 km/hr (65 knots). With Lusi about 600 km west of Rotuma and still maintaining its south-southeast track, the alert for Rotuma was duly cancelled at 7.30 pm on the 10th.

During the night on the 10th, Lusi maintained its south-southeast movement at about 25 to 30 km/hr (15 knots). Based on this information, a Gale Warning was issued at 1.30 am on the 11th for the Yasawa and Mamanuca Group, western and southwestern Viti Levu, Kadavu, Vatulele and nearby smaller islands, while the Alert was maintained for the rest of Fiji. At this time, it was estimated that Lusi had average winds of 90 km/hr (48 knots) with momentary gusts to 120 km/hr (65 knots) near its centre. The cyclone was expected to maintain its movement and to pass west of Nadi around 6.00 pm that evening. Rain over Fiji was expected to be widespread and heavy.

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<sup>1</sup> 1 knot = 1.853 kilometres per hour (km/hr) = 0.51 metres per second

At 10.30 am on the 11th, with Lusi projected to maintain its south-southeast movement, the Alert for the rest of the Fiji Group was downgraded to a Strong Wind Warning. However, the Gale Warning was maintained for Yasawa and Mamanuca, western and southwestern Viti Levu, Vatulele, Kadavu and nearby smaller islands. Lusi curved slightly towards the southeast from 6.00 pm on the 11th but was expected to again turn south-southeast later. At 7.30 pm on the 11th, when Lusi was 370 km west-southwest of Nadi and maintaining its south-southeast movement, the Gale Warning was cancelled for the Yasawa and Mamanuca Groups but maintained for the other areas. At this stage the cyclone had reached its peak intensity with estimated average wind speeds of 90 km/hr (50 knots) and momentary gusts to 130 km/hr (70 knots) near the centre. It was also indicated in the SWB that Lusi was expected to gradually weaken after midnight on the 11th.

The final SWB for Fiji was issued at 1.30 am on the 12th with Lusi located about 330 km to the southwest of Nadi and moving further away. Winds near the centre were around 80 km/hr (43 knots) with momentary gusts to 120 km/hr (65 knots) and weakening. The Gale Warning was still in force for southwestern Viti Levu, Vatulele, Kadavu and nearby smaller islands at this stage while the rest of Fiji was on Strong Wind Warning. However, in the contents of the last bulletin, it was indicated that the gales were expected to gradually decrease during the morning of the 12th. Lusi again turned towards the south-southeast after 6.00 am on the 12th and continued moving in this direction.

Lusi's brush past the western parts of Fiji brought widespread rain to Fiji with marginal gales occurring in southwestern parts, but with no significant damage. Nadi airport recorded a maximum sustained (10-minute average) wind of 31 knots (57 km/hr) with a gust of 48 knots (89 km/hr) at 5pm on the 11th. A maximum gust of 50 knots (93 km/hr) was recorded at Nadi at 8pm the same day. Similar strength winds were recorded at the Automatic Weather Station located at Lautoka harbour and operated by the Australian National Tidal Facility.

The first SWB for Rotuma was issued at 11.00 am on the 10th and the first for Fiji was issued at 3.30 pm on the same day. Bulletins were first issued every 4-6 hours until 1.30 am on the 11th of October and every 3 hours thereafter. In total, 12 SWBs were issued for Fiji/Rotuma.

In addition, 19 International Marine Gale/Storm Warnings to shipping were issued 6-hourly from midnight on the 7th and 6 Tropical Disturbance Advisories were issued 12-hourly to other National and Regional Meteorological Centres throughout the Southwest Pacific and beyond.

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**Preliminary TRACK OF TROPICAL CYCLONE "LUSI"**  
 8 - 12 October 1997

