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Preliminary Report on Tropical Cyclone SUSAN 3 - 9 January, 1998

Tropical Cyclone Susan was the most intense cyclone to form in the Regional Specialised Meteorological Centre - Nadi (RSMC-Nadi) area of responsibility in recent years. The cyclone was estimated to have maximum 10-min average winds of about 125 knots¹ close to its centre. Fortunately, the cyclone spent its entire life over open ocean, too far away from populated land areas to cause any major damage.

Susan developed from a Tropical Depression lying along the convergence zone to the west of Rotuma. The system began showing signs of significant development overnight on the 2nd and was named Tropical Cyclone "Susan" at 0400 UTC² on the 3rd.

Around this time, the cyclone had started moving west-southwestwards at about 6-8 knots, posing a direct threat to northern Vanuatu. Hence, the first Special Advisory for Vanuatu was issued around 1030 UTC on the 3rd, indicating that gale force winds may affect northern areas of the Group in the next 24 to 48 hours. From that time onwards Special Advisories for Vanuatu were issued at 6 hourly intervals.

Susan intensified rapidly and in less than 24 hours of naming the system, it had attained hurricane intensity. Around 0600 UTC on the 4th, Susan had begun moving towards the south-southwest. It kept intensifying and continued moving in this south-southwest direction for the next 18 hours.

Susan reached its estimated peak intensity of about 125 knots around 0600 UTC on the 5th and maintained this intensity for at least 36 hours.

Around 1200 UTC on 5th, when Susan was close to 15°S 170°E, the cyclone made a seventy degree turn towards the southeast, sparing Vanuatu the brunt of its fury. However, due to the close proximity of the cyclone, the Special Advisories for Vanuatu were maintained for the next 24 hours until it was certain that Susan would maintain its southeastward track away from Vanuatu.

Susan continued towards the southeast and started to accelerate, threatening the Fiji group. Considering the possibility that the cyclone might take a more easterly track, the first Special Weather Bulletin (SWB) carrying a Tropical Cyclone Alert was issued for the Fiji Group around 8:30 AM (Local Time)³ on 7th. At this time, the cyclone was located about 600 kilometres (km) west of Nadi and moving southeast at about 10 knots. The Alert indicated that Susan was

¹ 1 knot = 1.853 kilometres per hour (km/hr)

² UTC - Universal Co-ordinated Time (Same as Greenwich Mean Time)

³ Local Time (LT) - 12 hours ahead of UTC

expected to pass as close as 300 km to the southwest of Viti Levu around 6 AM (LT) on the 8th. The Alert also mentioned that there was a chance that the cyclone would curve more towards the east-southeast and, if this happens, it would bring damaging gale force or stronger winds over western and southern parts of the group.

Although, the cyclone was still a long way to the west, squally strong north to northeast winds were already starting to affect the western parts of the Fiji Group. Hence, around 12:30 PM (LT) on 7th, the Alert was upgraded to a Gale Warning to cover for the Yasawa and Mamanuca group, western and southwestern parts of Viti Levu, Vatulele, Kadavu and nearby smaller islands. A Tropical Cyclone Alert was kept in force for the rest of the Fiji group. The Gale Warning indicated that winds were expected to increase to damaging gale force with average speeds up to 85 km/hr and momentary gusts to 110 km/hr that evening. The SWBs for Fiji were issued 3 hourly.

As Susan moved closer to the Fiji Group, it became apparent that the radius of the gale force winds around the cyclone centre was much larger than expected and that gales would affect some southeastern parts of the group as well. Hence, around 1:30 AM on the 8th, the Gale Warning was extended to cover the whole of Viti Levu, southern Lomaiviti Group and the southern Lau Group.

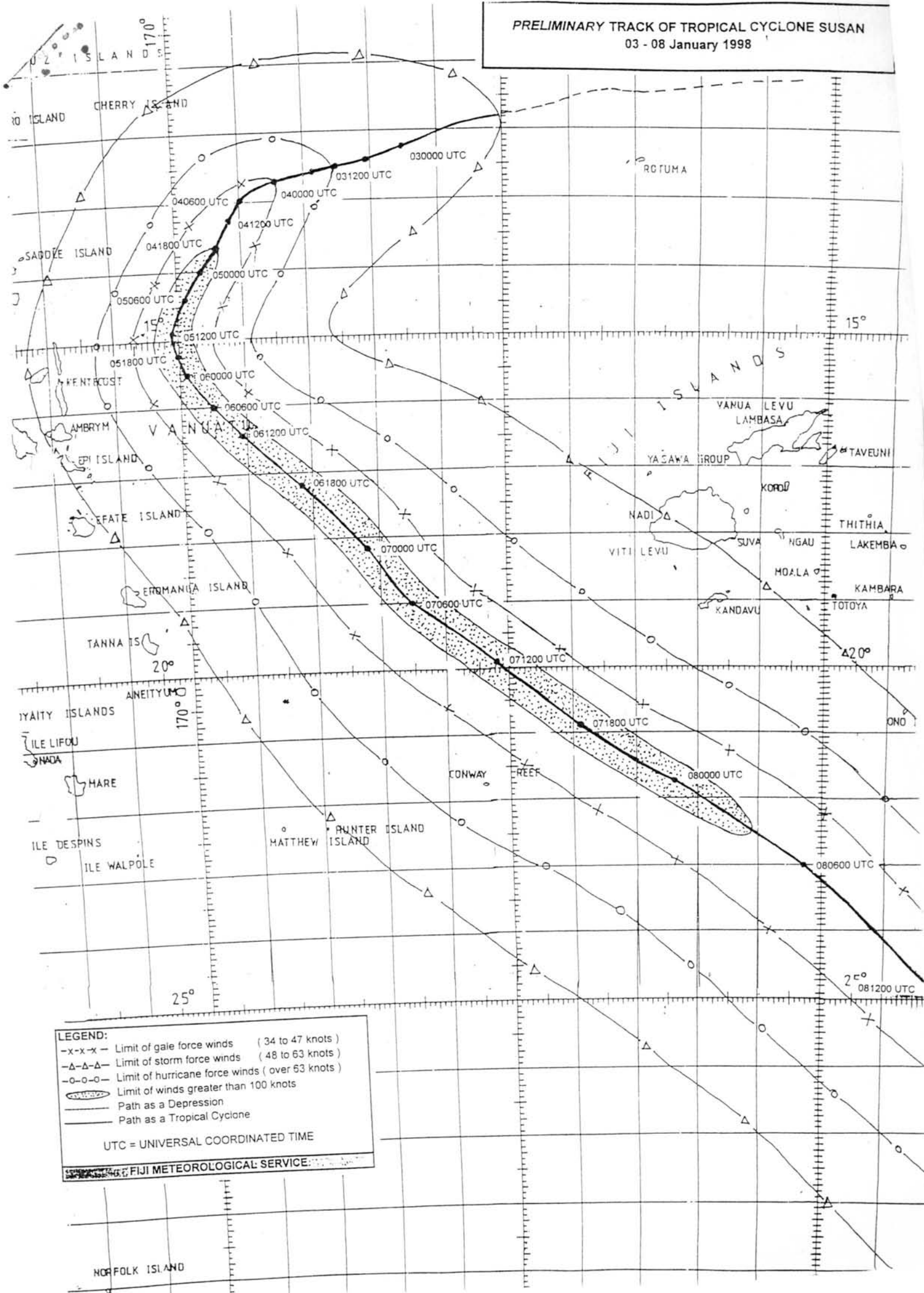
As expected, Susan continued on a southeastwards track and at about 6 AM on the 8th was located at about 400 km south-southwest of Nadi and 300 km southwest of Kadavu, moving southeast at about 12 knots. Around this time, Susan had weakened slightly but was still estimated to have winds up to 100 knots close to its centre.

The Gale Warning for the northwestern areas of Fiji was cancelled around 10.30 AM on 8th as Susan accelerated towards the southeast away from the Group. However, a Gale Warning was kept in force for Kadavu, Vatulele and nearby smaller islands until 1.30 PM on the 8th when it was finally cancelled for those places as well.

In total, 10 SWBs were issued for Fiji, and 14 Special Advisories were issued for Vanuatu. In addition, 27 Marine Gale/Storm/Hurricane Warnings to shipping were issued 6-hourly from 2100 UTC 2 January to 0600 UTC on 9 January and 24 Tropical Disturbance Advisories were issued 6 hourly to other National and Regional Meteorological Centres throughout the SW Pacific and beyond.

Since Susan spent its entire life span over the open ocean, damage was minimal. No reports of any damage in Vanuatu have been received at the time of this report although it is known that at least one death occurred when an old lady was struck by a falling coconut. In Kadavu, Fiji, heavy swells and high seas generated by Susan damaged the jetty and parts of the road and flooded a coastal village. Cost of this damage was estimated to be around F\$190,000. Susan was also responsible for blowing away parts of the roofs of some shops in downtown Lautoka around 8 PM on the 8th. It is believed this damage was caused by a tornado which formed in one of the outer rain bands as it crossed the coast.

PRELIMINARY TRACK OF TROPICAL CYCLONE SUSAN
03 - 08 January 1998



LEGEND:
 -x-x-x- Limit of gale force winds (34 to 47 knots)
 -Δ-Δ-Δ- Limit of storm force winds (48 to 63 knots)
 -o-o-o-o- Limit of hurricane force winds (over 63 knots)
 (shaded area) Limit of winds greater than 100 knots
 — Path as a Depression
 — Path as a Tropical Cyclone
 UTC = UNIVERSAL COORDINATED TIME
 FIJI METEOROLOGICAL SERVICE

NORFOLK ISLAND