

FIJI METEOROLOGICAL SERVICE

TROPICAL CYCLONE REPORT 92/6

JB - DM/300

TROPICAL CYCLONE ARTHUR

14 - 17 December 1991

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Note: Tropical Cyclone Reports are intended to be quickly available, preliminary, descriptive reports for public use. Their early issue means that details may be subject to subsequent correction.

Issued by

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26 June 1992

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INTRODUCTION

The occurrence of tropical cyclones in that Pacific lying east of longitude 140 west is a comparison. However, major El Nino episodes such as ones that were common in the 1982/83 and 1991/92 cyclone seasons, can occasionally produce environmental conditions favourable for cyclones to form in that area of the Pacific.

Tropical cyclone "Arthur" was such a cyclone and appears to have formed out of the tropical depression into which tropical cyclone "Wasa" degenerated at the end of its life-cycle (see Tropical Cyclone Report 92/7). Designated a cyclone on 14 December 1991, the system had a very short lifespan of only 3 days during which it affected the Actaeon Islands and several atolls in the Tuamotu Archipelago (French Polynesia). Accounts of damage were not available at the time of compiling this report.

HISTORY

Soon after passing directly over Tubuai (Austral Islands) about 1300 UTC* on the 12th of December 1992, tropical cyclone "Wasa" degenerated into a tropical depression. However, gale remained associated with the depression especially in the southeastern quadrant. The system appears to have turned initially towards east and later northeast, thus entering into warmer waters, to regenerate into a tropical cyclone on 14th of December. It was consequently named "Arthur".

Winds associated with Arthur increased to marginal storm force 1200 UTC on the 14th as the cyclone passed about 80 miles** northnorthwest of Mururoa Atoll, which reported 40 knot winds and lowest pressure of 998.4 hPa. Also at that time, a ship located about 30 miles to the north of the cyclone centre reported average winds of 48 knots and a pressure of 995.0 hPa. The cyclone started to weaken on the 16th after turning more towards the east, finally degenerating into a shallow depression late on the 17th.

Throughout its lifespan the tracking of "Arthur" was made very difficult due to the lack of high resolution satellite imagery of the area and also because of the poor quality of the infrequently received GOES low resolution imagery.

*UTC - Co-ordinated Universal Time (same as Greenwich Meridian Time).

**miles = nautical miles throughout this publication.

The strongest wind reported during the history of "Arthur" was 48 knots by a ship located at Latitude 19 decimal 2 degrees South and Longitude 140 decimal 5 degrees West at 1200 UTC on the 14th. At that time this ship also reported the lowest pressure recorded in the vicinity of "Arthur" (995.0 hPa). The strongest wind reported by a land station was 40 knots at Mururoa.

No reports of damage attributed to "Arthur" had been received at the time of compiling this report.

CONCLUSION

"Arthur" was the second tropical cyclone to affect French Polynesia during the 1991/92 cyclone season. This was the first season since 1982/83 to produce major tropical cyclones in the French Polynesia region, and it is significant that both these seasons coincided with major El Nino episodes.

Since "Arthur" appears to have developed out of the degenerate remains of "Wasa" it could be argued that the latter name should have been maintained for the system, and that a new one was not necessary. However, for operational purposes, and to avoid confusion among recipients of the warnings (who were advised a considerable period earlier that Wasa had already degenerated into a depression), the most convenient option at the time was to give the cyclone a completely different name.

The lack of surface reporting stations and very poor satellite coverage for the area made the tracking of the system extremely difficult, especially during the "Wasa"/"Arthur" transition phase.

