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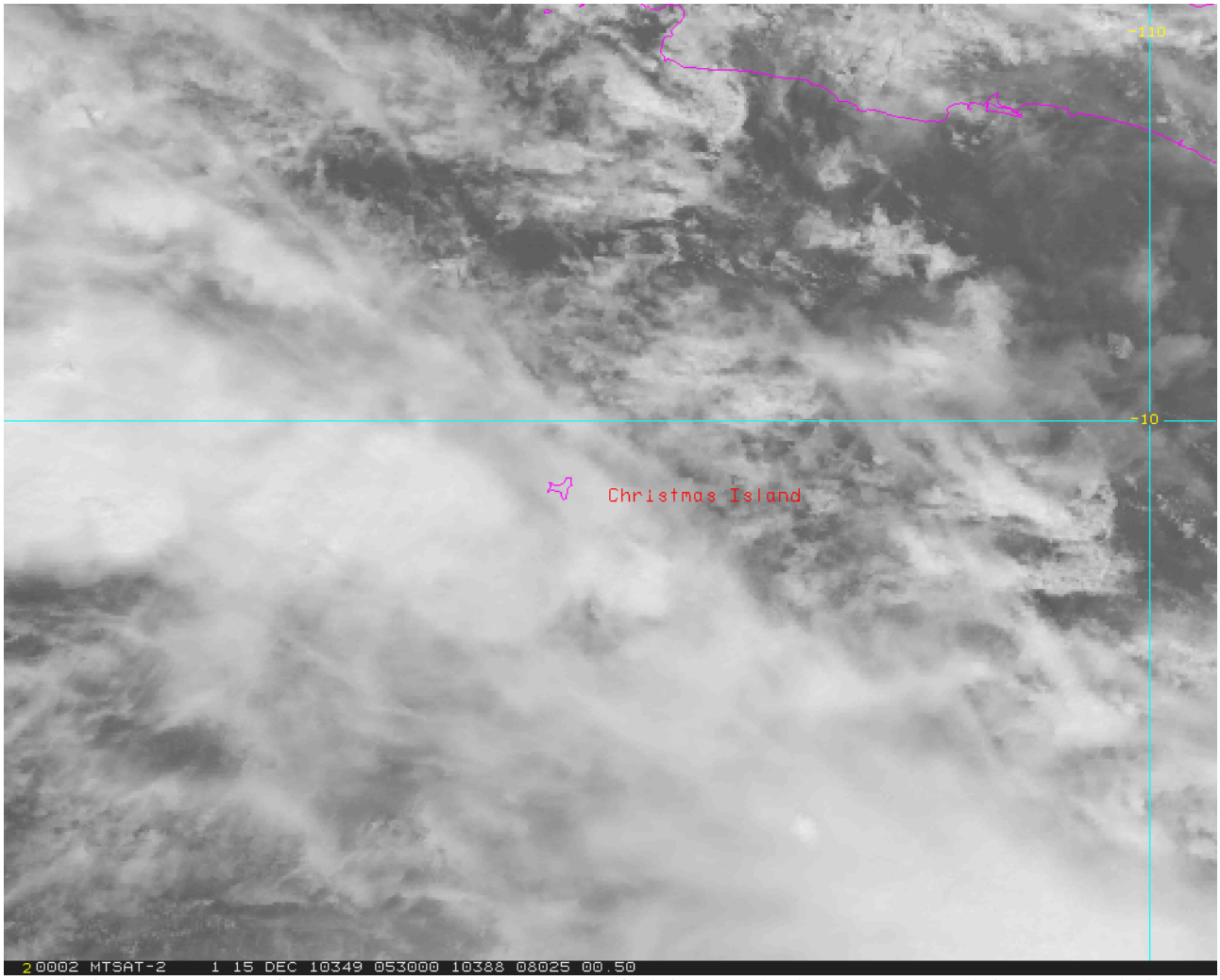
Weather Report in the vicinity of Christmas Island (10.45S 105.69E) 10 to 19 December 2010



Satellite image (courtesy of Japan Meteorological Agency) of Christmas Island at 1230 CXT (Christmas Island Time) on 15 December 2010

Executive Summary

Active monsoonal conditions were experienced in the vicinity of Christmas Island from 10 to 19 December, with periods of rain, showers and thunderstorms present for much of the period. Winds were generally from the northwest, with speeds of 20 to 30 knots (37 – 55 km/h) at times on the 14th and 15th; potentially stronger during showers or thunderstorms. Significant wave height in the region was driven primarily by the local northwest winds, and most likely peaked at 3 to 4 m overnight on the 14th.

Contents

Data Availability

In situ observational data is limited in the Christmas Island area. The Bureau of Meteorology maintains an automatic weather station at Christmas Island Aerodrome (see Figure 11 – aerodrome signified on map as "airstrip"), and hourly observations from this weather station from 10 to 19 December 2010 are included in Appendices A and B. Available ship observations within 120 nm of Christmas Island are included in Appendix D. A Bureau of Meteorology National Tidal Facility sea level monitoring station is located at Flying Fish Cove jetty, and observations were viewed and summarised in this report. Other data used to compile this report including satellite imagery, satellite derived winds, manual gradient level streamline[1] analyses, and model data are provided in the body of the report. Computer model analyses are from the Bureau of Meteorology's Australian Community Climate and Earth-System Simulator (ACCESS), henceforth referred to as 'model data'.

Bureau of Meteorology forecasts

All forecasts issued by the Bureau of Meteorology are continually monitored and are amended according to individual product criteria whenever the observed or expected conditions vary significantly from those described in the product. Forecasts and warnings are disseminated via the internet and the Bureau of Meteorology's Computer Message Switching System (CMSS). CMSS is a real time message switching system, that uses several different communications protocols and delivery mediums, including TCP/IP (socket, FTP, rcp, scp), email, and fax. In addition to these dissemination methods, aviation forecasts are transmitted via the Aeronautical Fixed Telecommunication Network (AFTN); and High Seas Forecasts and Warnings are disseminated via HF broadcast, IMMARSAT and the Global telecommunication System (GTS) and so are available to ships at sea with HF radio or satellite reception capabilities.

Copies of the Northern Area High Seas Forecasts, which provide sea forecast information for Christmas Island and the sea to the north, for the period 10 to 19 December 2010 issued by the Northern Territory Regional Forecasting Centre of the Bureau of Meteorology in Darwin are included in Appendix F. These forecasts are issued twice daily for the 24 hours commencing 2300 Coordinated Universal Time (UTC) and 1100. High Seas Warnings are issued every 6-hours if gale force (34 knots or greater) mean wind speeds are expected. No High Seas Warnings were issued for the Christmas Island area for this event.

Copies of the Indian Ocean Islands Forecasts issued by the Western Australian Regional Forecasting Centre of the Bureau of Meteorology in Perth for the period 10 to 19 December 2010 are included in Appendix G. These forecasts are issued twice daily and are valid for the land areas of Christmas Island and Cocos Island.

Copies of the Christmas Island Aerodrome Forecasts (TAF) issued by the Western Australian Regional Forecasting Centre of the Bureau of Meteorology in Perth for the period 10 to 19 December 2010 are included in Appendix H. Christmas Island TAFs are issued every 6 hours (00 UTC, 06 UTC, 12 UTC, 18 UTC) and are valid for the following 18 hours. Information on how to interpret a TAF is available at http://www.bom.gov.au/aviation/data/education/awp-taf.pdf. Detailed information on TAF amendment criteria is specified in the Bureau of Meteorology's Aeronautical Services Handbook which is available upon request.

Copies of the Search and Rescue (SAR) Forecasts issued by the Western Australian Regional Forecasting Centre of the Bureau of Meteorology in Perth for the Christmas Island area during the period 10 to 19 December 2010 are included in Appendix I. SAR forecasts are issued upon request from either the Australian Maritime Safety Authority (AMSA) or the Western Australian Police

[1] A 'streamline' analysis is particularly used in the tropics as the more familiar Mean Sea Level Pressure (MSLP) charts are less useful than in the mid-latitudes. Streamline charts show the direction of the wind, the wind strength, and the position of any significant systems.

(WAPOL). Forecast requests are generally received either by phone or fax. SAR forecasts are given priority over routine forecasting tasks and are issued as soon as possible upon receipt. SAR forecasts are usually issued with twelve hour validity. AMSA receive SAR forecasts via fax, email and the Aeronautical Fixed Telecommunication Network (AFTN). WAPOL receive the product via fax. All SAR forecasts are disseminated directly to both agencies regardless of which agency requested the forecast. SAR forecasts were issued for the Christmas Island area at 1030 UTC on 15 December, 2230 UTC on 15 December and 2200 UTC on 16 December.

Copies of the Daily Weather Brief for HQ Northern Command (NORCOM), issued by the Defence Meteorological Support Unit (DMSU), for the period 10 December to 19 December 2010 are included in Appendix J. No specific amendment criteria exist for these forecasts, but amendments are issued when significant changes in weather conditions are expected or occurring. The forecasts are uploaded onto the Bureau of Meteorology's Defence Registered User site and the Defence Secret Network (DSN) and are available for all site users. The Bureau generally gives an in person briefing to Commander NORCOM each Tuesday based on the Daily Weather Brief where questions can be asked and further detail provided. On Tuesday 14th December the briefing was provided by the Supervising Meteorologist for the Northern Territory and attention specifically drawn to the expected conditions.

A copy of the Beaufort wind scale, which is the standard reference for assessing wind speed, is included in Appendix K for reference.

Overview of weather conditions from 10 to 19 December 2010

On 10 December 2010, the monsoon trough[2] lay near Christmas Island[3] (Figure 1). The monsoon trough drifted slowly southward from the 10th to 13th (Figures 2 to 4) as a weak tropical low moved to the south of the island on the 11th (Figure 2). Satellite imagery indicates active monsoonal conditions were present in the region with areas of rain, showers and thunderstorms between Christmas Island and Indonesia from the 10th to 13th (Figures 1 to 4). Satellite derived winds, model data, and available ship observations in the region indicate that winds in this area were likely to be 10 to 15 knots[4] from the west to southwest on the 10th; increasing to 15 to 25 knots west to northwest during the 11th; and further increasing to 20 to 25 knots from the northwest on the 12th and 13th. Based on these wind estimates, seas[5] in the area were likely to be near to 0.5 m from the west on the 10th; increasing to 1.0 to 1.5 m from the northwest during the 11th; and further increasing to 1.5 to 2.0 m from the northwest on the 12th and 13th. Model data and available ship observations indicate a southerly swell of 1.0 to 2.0 m was present in the area from the 10th to 12th, easing to 1.0 to 1.5 m on the 13th. Significant wave heights[6] indicated by model data were 1.5 to 2.0 m on the 10th, increasing to 1.5 to 2.5 m on the 12th and 13th due to the increase in northwesterly winds.

On 14 December 2010, the monsoon trough was located south of Christmas Island, extending from near 11S 100E to a developing tropical low near 15S 107E (Figure 5). The low deepened and moved in a south to southeast direction, away from Christmas Island, from the 14th to the 19th (Figures 5 to 10), causing the monsoon trough to remain to the south of Christmas Island over this period. As a result, active monsoonal conditions were experienced at Christmas Island from the 14

[2] The monsoon trough is typically an east-west oriented line in the tropics delineating the lowest pressure, and a change from easterly winds to westerly winds. The active phase of the monsoon is usually associated with broad areas of cloud and rain and sustained moderate to fresh northwesterly winds on the northern side of the trough

[3] Note that Local Standard Time at Christmas Island is Christmas Island Time (CXT) which is Coordinated Universal Time (UTC) plus 7 hours (UTC + 7).

[4] Wind strengths are given here in knots as is the usual nautical convention. 1 knot is approximately 1.85 km/h or 1.15 mph.

[5] Seas are short period waves generated by local winds.

[6] Significant Wave Height (SWH) describes the combined height of the sea and the swell. The height of the SWH refers to the average wave height of the highest one third of the waves. The probable maximum wave height can be up to twice the SWH.

to 17 December, with generally overcast conditions and periods of rain, showers and thunderstorms. Shower and thunderstorm activity at Christmas Island eased from the 17th as the focus of the monsoonal activity became confined to the tropical low to the southeast. Satellite derived winds and model data indicate that northwest winds were likely to have increased to 25 to 33 knots in the region from the 14th to 16th, associated with the development of the low to the southeast; tending westerly at 20 to 25 knots on the 16th; and easing further to westerly 10 to 15 knots from the 17th to 19th. Based on these wind estimates, seas in the area were likely to be 2.5 to 3.5 m from the northwest from the 14th to 16th; easing to 1.5 to 2.0 m from the west on the 16th; and easing further to about 1.0 m from the west from the 17th to 19th. Model data indicates that the background southerly swell eased to around 1.0 m on the 14th and 15th, before increasing to 1.5 to 2.5 m from the 16th to 19th due to the development of the tropical low to the southeast. Significant wave heights indicated by model data increased to 2.5 to 3.0 m on the 14th, increasing to (and most likely peaking) at 3.0 to 4.0 m during the morning of the 15th. Model data indicates that significant wave heights were likely to have been maintained at 2.0 to 3.0 m from the 16th to the 19th, primarily due to swell generated by the tropical low to the southeast entering the area. Ship observations available from the 16th are in agreement with the above assessment.

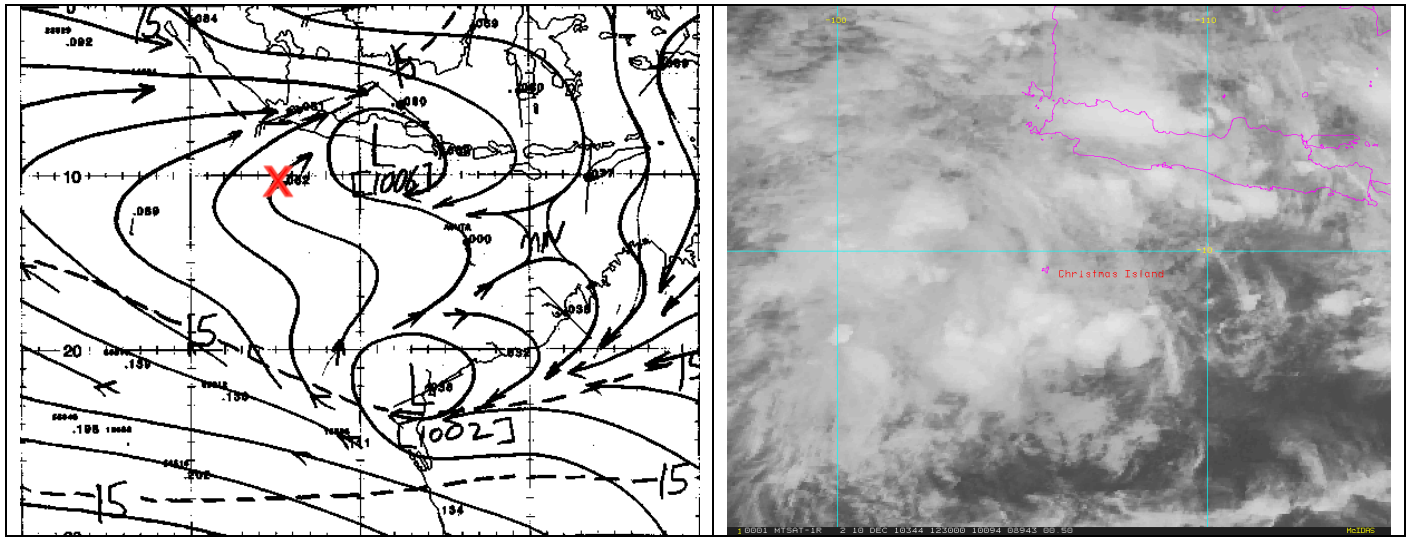


Figure 1: Darwin Regional Specialised Meteorological Centre (RSMC) gradient level streamline analysis for 1900 (CXT) on 10 December 2010 (left), with approximate location of Christmas Island indicated by an X; Satellite image (courtesy of Japan Meteorological Agency) at 1930 CXT on 10 December 2010 (right).

The streamline charts are in this case prepared by hand as a meteorological interpretation of all of the available observations including surface and upper-air observations, and satellite imagery. The arrowed lines show wind direction, 'L' indicates a low pressure system, and the dotted lines are isotachs (lines of equal wind speed, shown here for 15 knots and 30 knots). The 'gradient level' is taken as 1000 metres above the Earth's surface, which is generally free of local wind and topographic effects.

The sequence of charts here shows a strengthening SW to NW monsoon wind flow around the Christmas Island area as the low and associated trough develop and move to the south of the island (see the text of the report for a longer description).

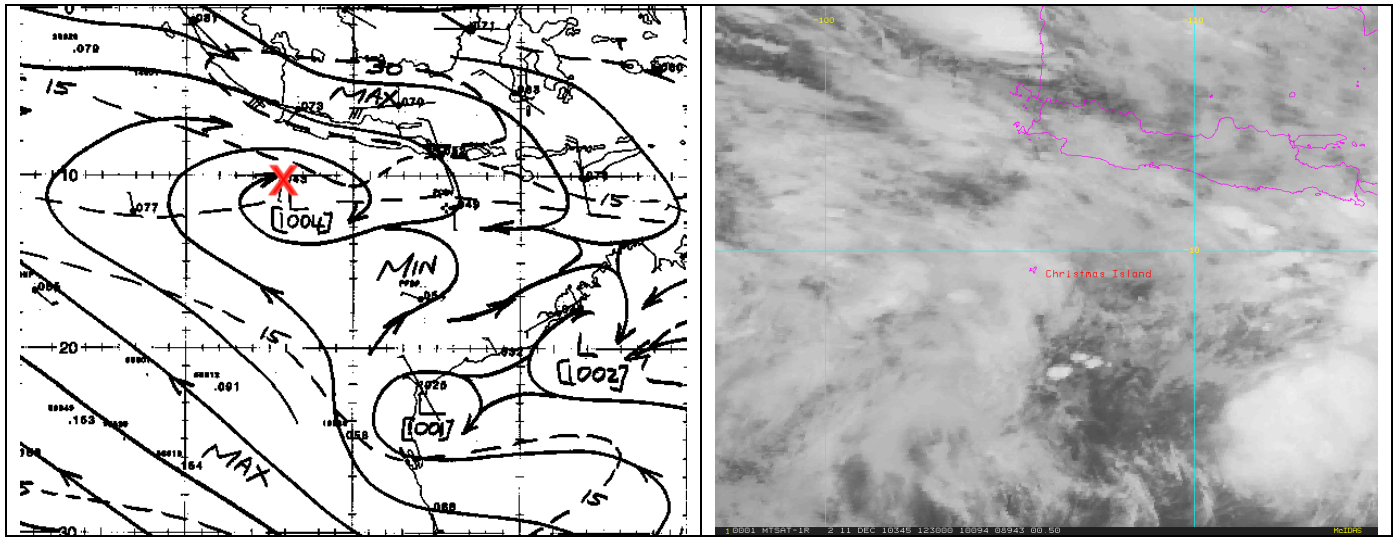


Figure 2: Darwin RSMC gradient level streamline analysis for 1900 CXT on 11 December 2010 (left), with approximate location of Christmas Island indicated by an X; Satellite image (courtesy of Japan Meteorological Agency) at 1930 CXT on 11 December 2010 (right). See caption to Fig.1 for an explanation of the streamline analysis.

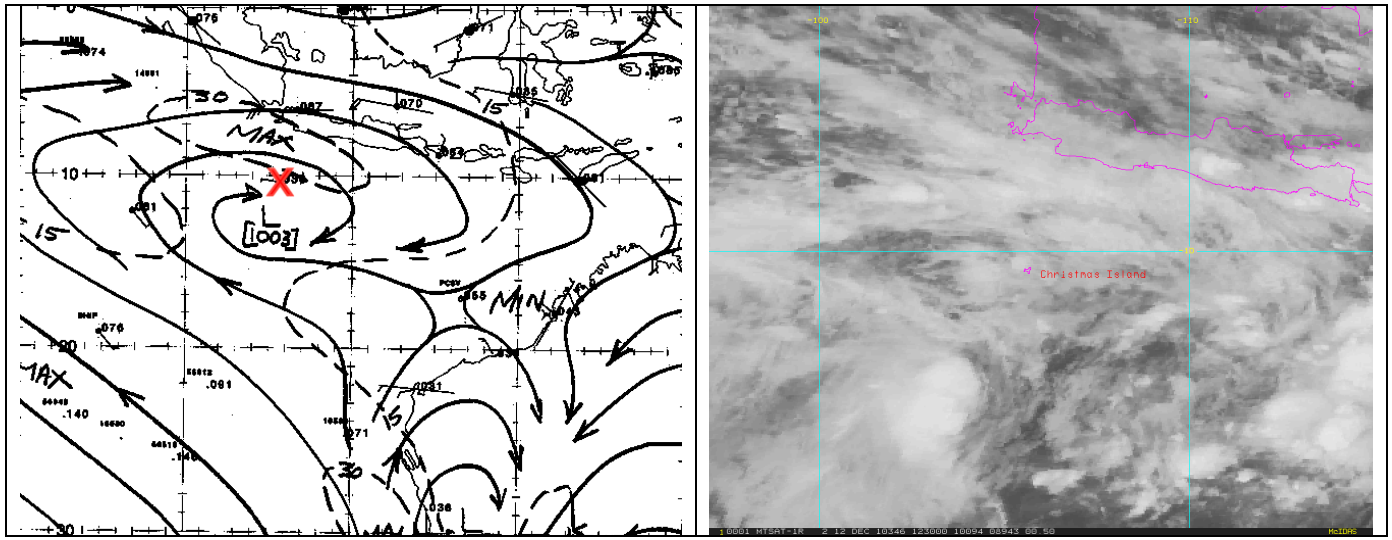


Figure 3: Darwin RSMC gradient level streamline analysis for 1900 CXT on 12 December 2010 (left), with approximate location of Christmas Island indicated by an X; Satellite image (courtesy of Japan Meteorological Agency) at 1930 CXT on 12 December 2010 (right). See caption to Fig.1 for an explanation of the streamline analysis.

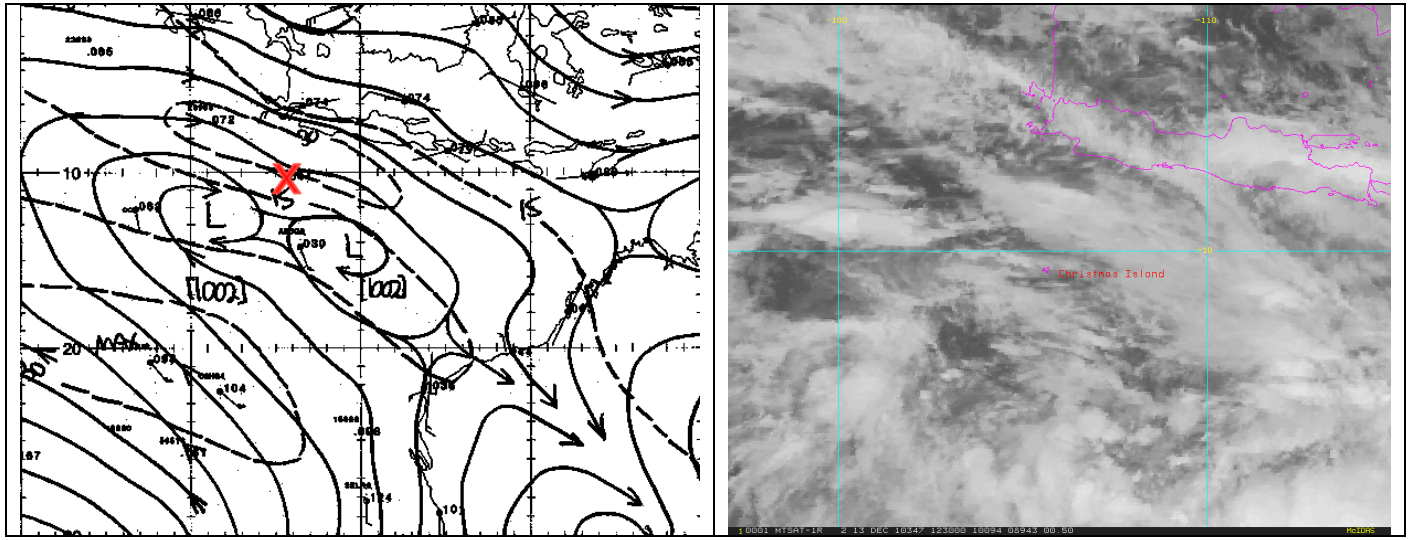


Figure 4: Darwin RSMC gradient level streamline analysis for 1900 CXT on 13 December 2010 (left), with approximate location of Christmas Island indicated by an X; Satellite image (courtesy of Japan Meteorological Agency) at 1930 CXT on 13 December 2010 (right). See caption to Fig.1 for an explanation of the streamline analysis.

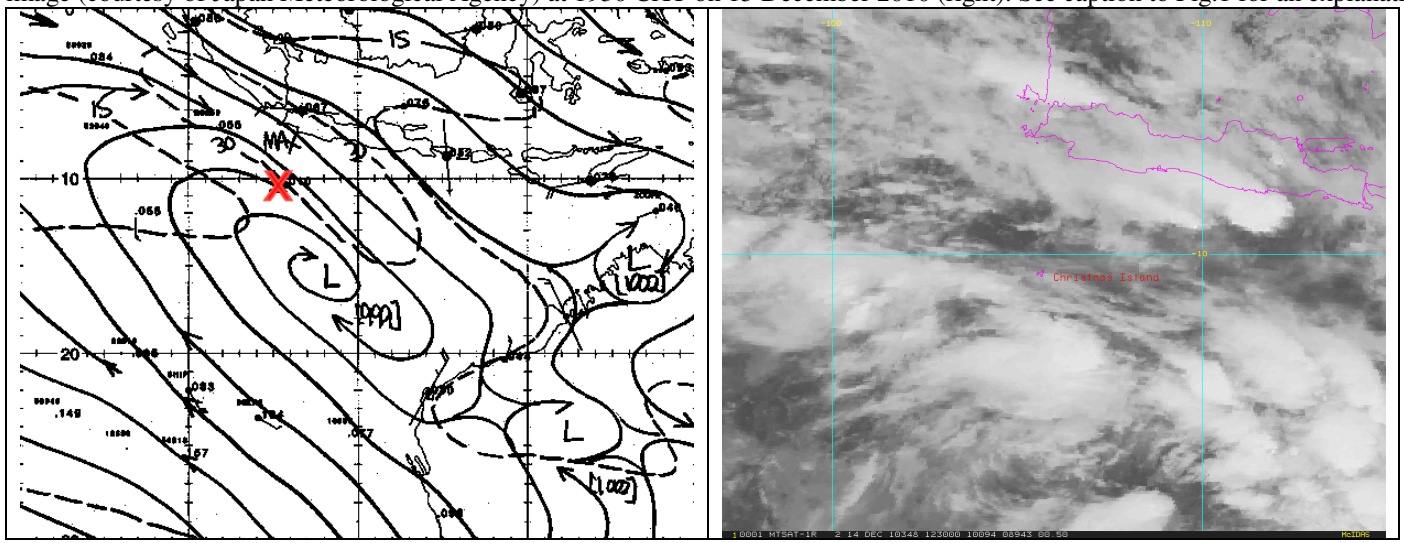


Figure 5: Darwin RSMC gradient level streamline analysis for 1900 CXT on 14 December 2010 (left), with approximate location of Christmas Island indicated by an X; Satellite image (courtesy of Japan Meteorological Agency) at 1930 CXT on 14 December 2010 (right). See caption to Fig.1 for an explanation of the streamline analysis.

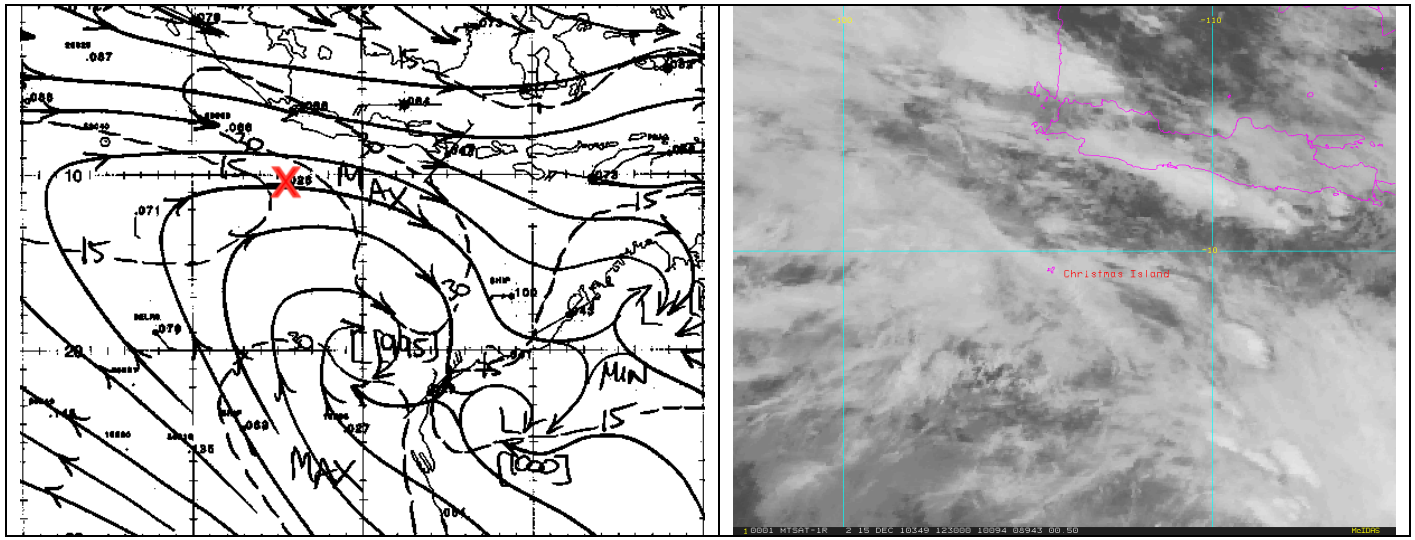


Figure 6: Darwin RSMC gradient level streamline analysis for 1900 CXT on 15 December 2010 (left), with approximate location of Christmas Island indicated by an X; Satellite image (courtesy of Japan Meteorological Agency) at 1930 CXT on 15 December 2010 (right). See caption to Fig.1 for an explanation of the streamline analysis.

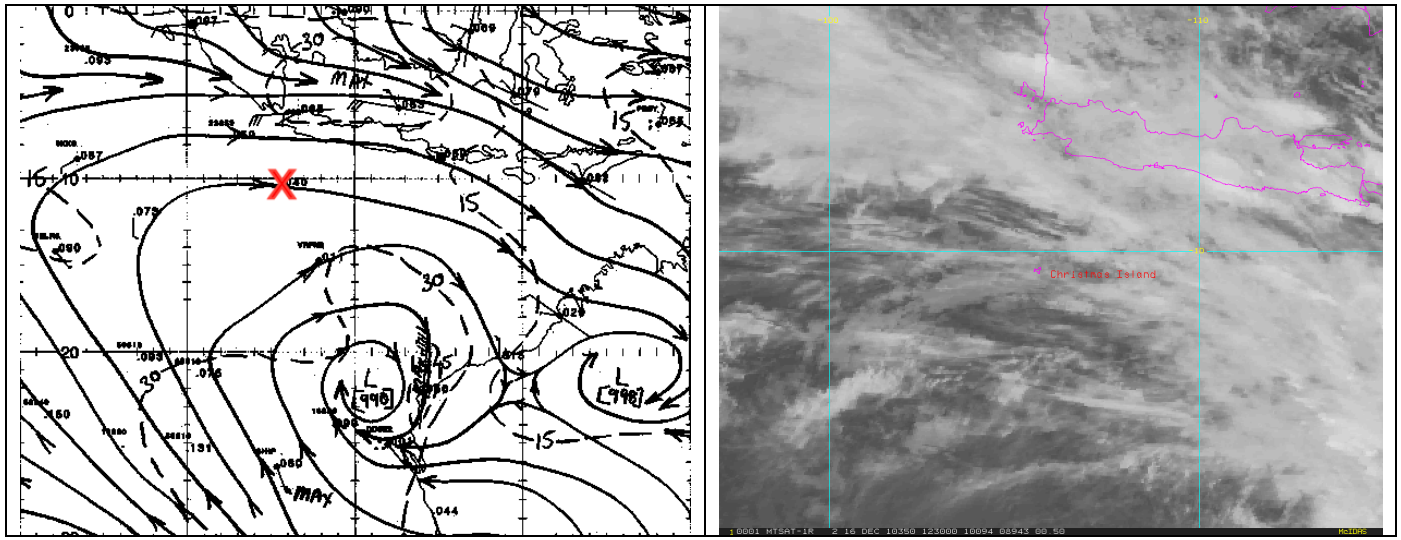


Figure 7: Darwin RSMC gradient level streamline analysis for 1900 CXT on 16 December 2010 (left), with approximate location of Christmas Island indicated by an X; Satellite image (courtesy of Japan Meteorological Agency) at 1930 CXT on 16 December 2010 (right). See caption to Fig.1 for an explanation of the streamline analysis.

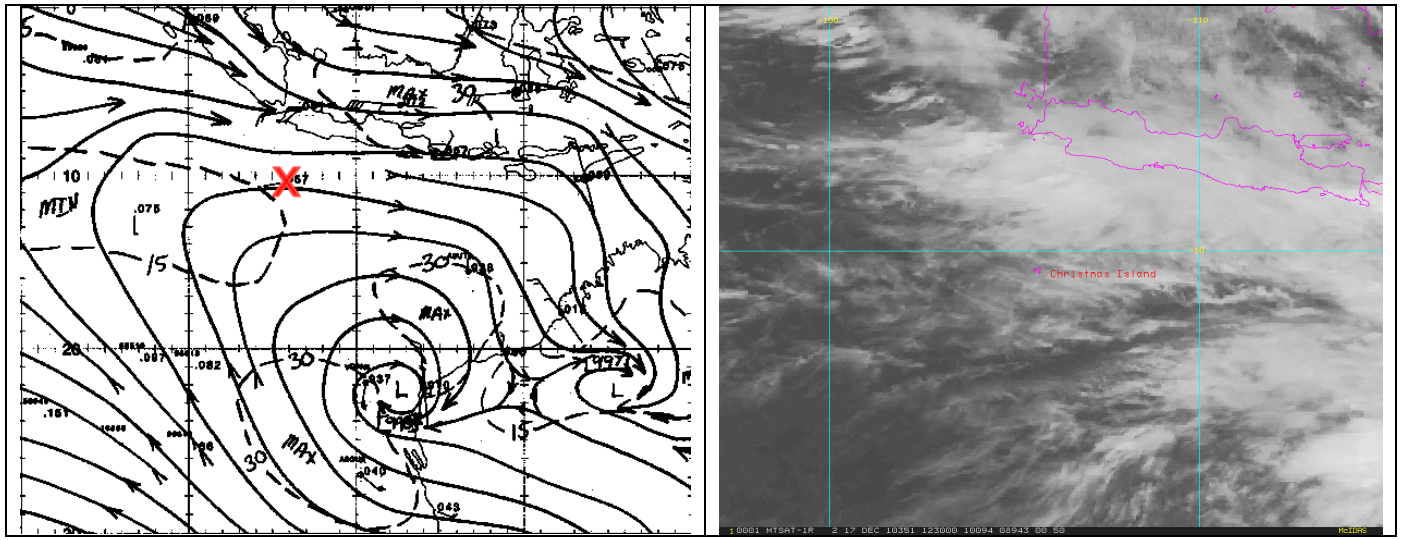


Figure 8: Darwin RSMC gradient level streamline analysis for 1900 CXT on 17 December 2010 (left), with approximate location of Christmas Island indicated by an X; Satellite image (courtesy of Japan Meteorological Agency) at 1930 CXT on 17 December 2010 (right). See caption to Fig.1 for an explanation of the streamline analysis.

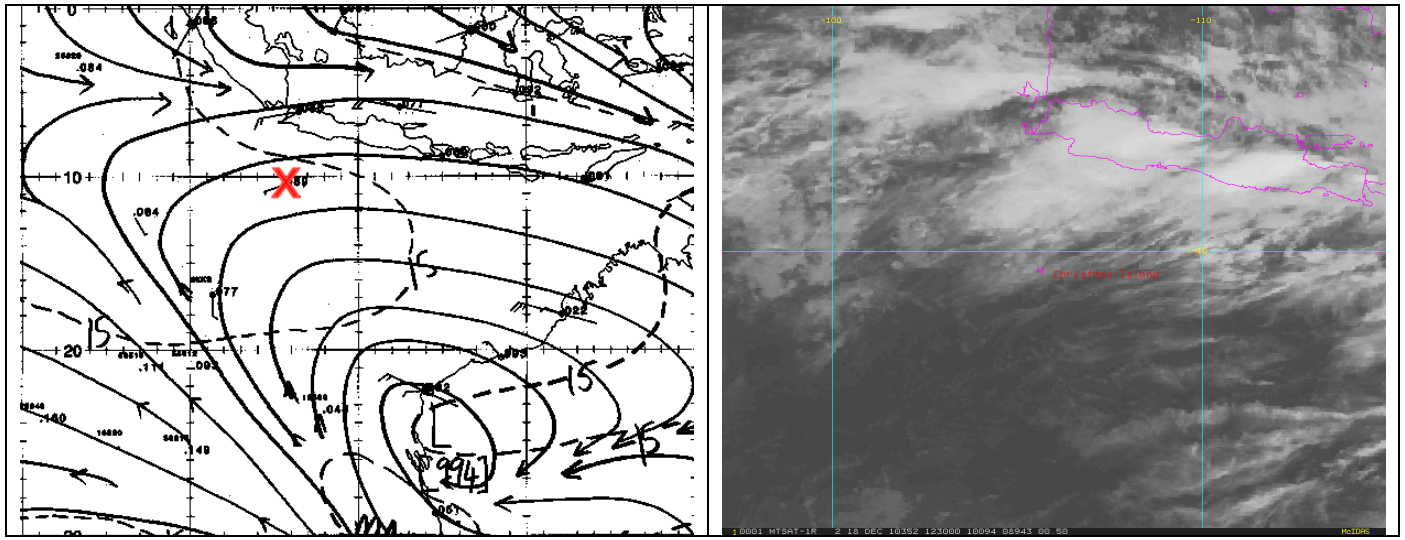


Figure 9: Darwin RSMC gradient level analysis for 1900 CXT on 18 December 2010 (left), with approximate location of Christmas Island indicated by an X; Satellite image (courtesy of Japan Meteorological Agency) at 1930 CXT on 18 December 2010 (right). See caption to Fig.1 for an explanation of the streamline analysis.

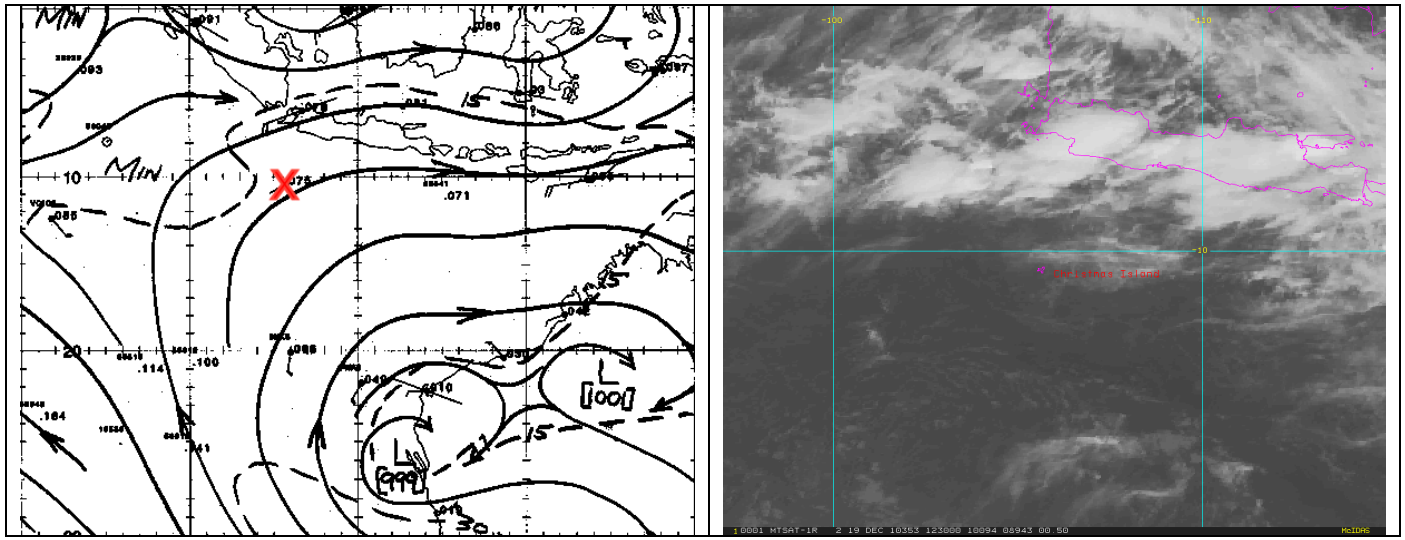


Figure 10: Darwin RSMC gradient level streamline analysis for 1900 CXT on 19 December 2010 (left), with approximate location of Christmas Island indicated by an X; Satellite image (courtesy of Japan Meteorological Agency) at 1930 CXT on 19 December 2010 (right). See caption to Fig.1 for an explanation of the streamline analysis.

Detailed analysis of Christmas Island weather on 14 and 15 December 2010

Wind conditions

Winds observed at Christmas Island Aerodrome[7] (Figure 11 – aerodrome signified on map as "airstrip") on 14 and 15 December 2010 were west to northwesterly and mostly in the 10 to 15 knot range, with gusts mostly in the 20 to 25 knot range (Appendix A). It should be noted that over open water, the frictional force acting on the near-surface wind is generally much lower than over land. Thus with less friction, surface winds over the ocean are usually stronger and less variable in both speed and direction than surface winds over land for a given a situation.

Model data (Figures 12 and 13) and satellite derived winds (not shown) indicate that stronger winds may have occurred on the exposed northern and western sides of Christmas Island, with 20 to 25 knot northwesterly winds on the morning of the 14th increasing to 25 to 30 knots overnight on the 14th before easing to westerly 15 to 25 knots later on the 15th. It should be noted that while the predominant wind direction was from the northwest, this direction can vary during thunderstorm and shower activity and that stronger gusts are also possible during showers and thunderstorms. Daily maximum wind gusts (recorded in the 24 hours prior to midnight local time) observed at Christmas Island Aerodrome were 30 knots at 2122 CXT from the northwest on the 14th, and 26 knots at 0103 CXT from the west on the 15th.

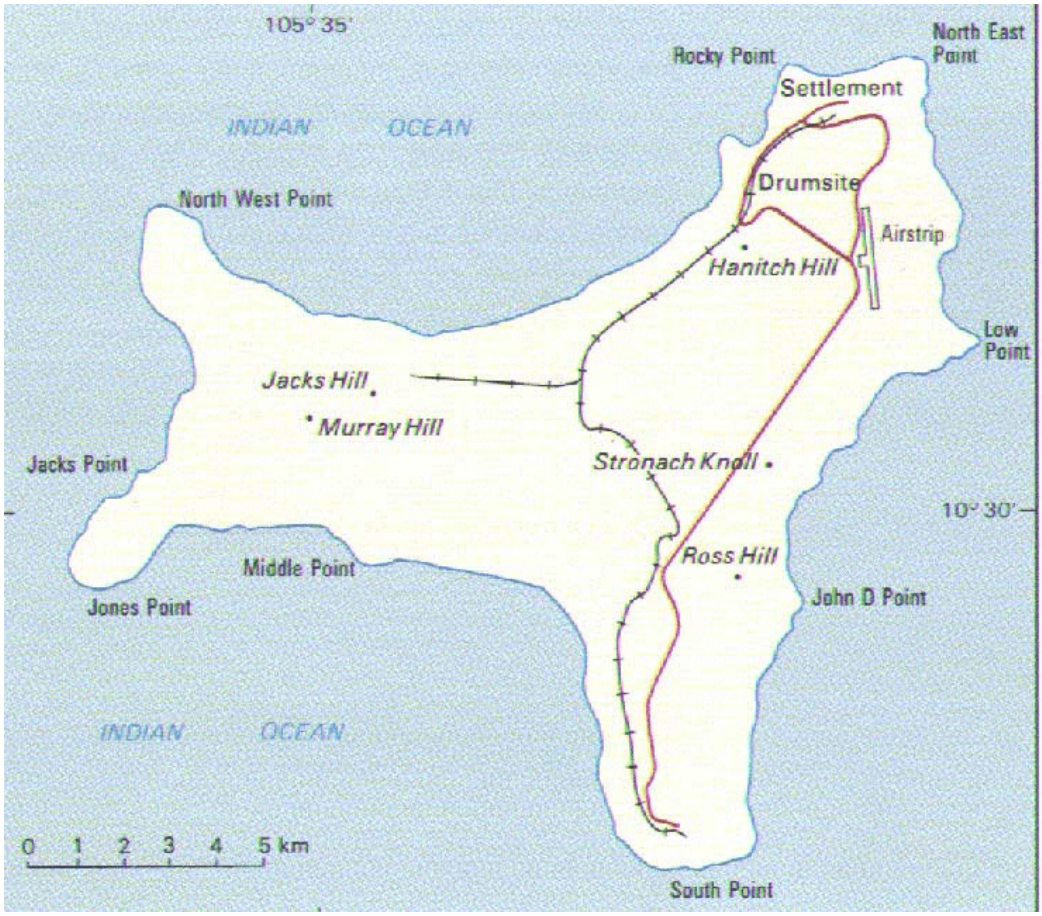


Figure 11: Map of Christmas Island. Courtesy of Geosience Australia; accessed http://www.ga.gov.au/education/geoscience-basics/dimensions/remote-offshore-territories/christmas-island.html on 25 January 2011.

[7] Christmas Island Aerodrome, located on the northeast side of the island, is 261 m (approximately 856 feet) above sea level.

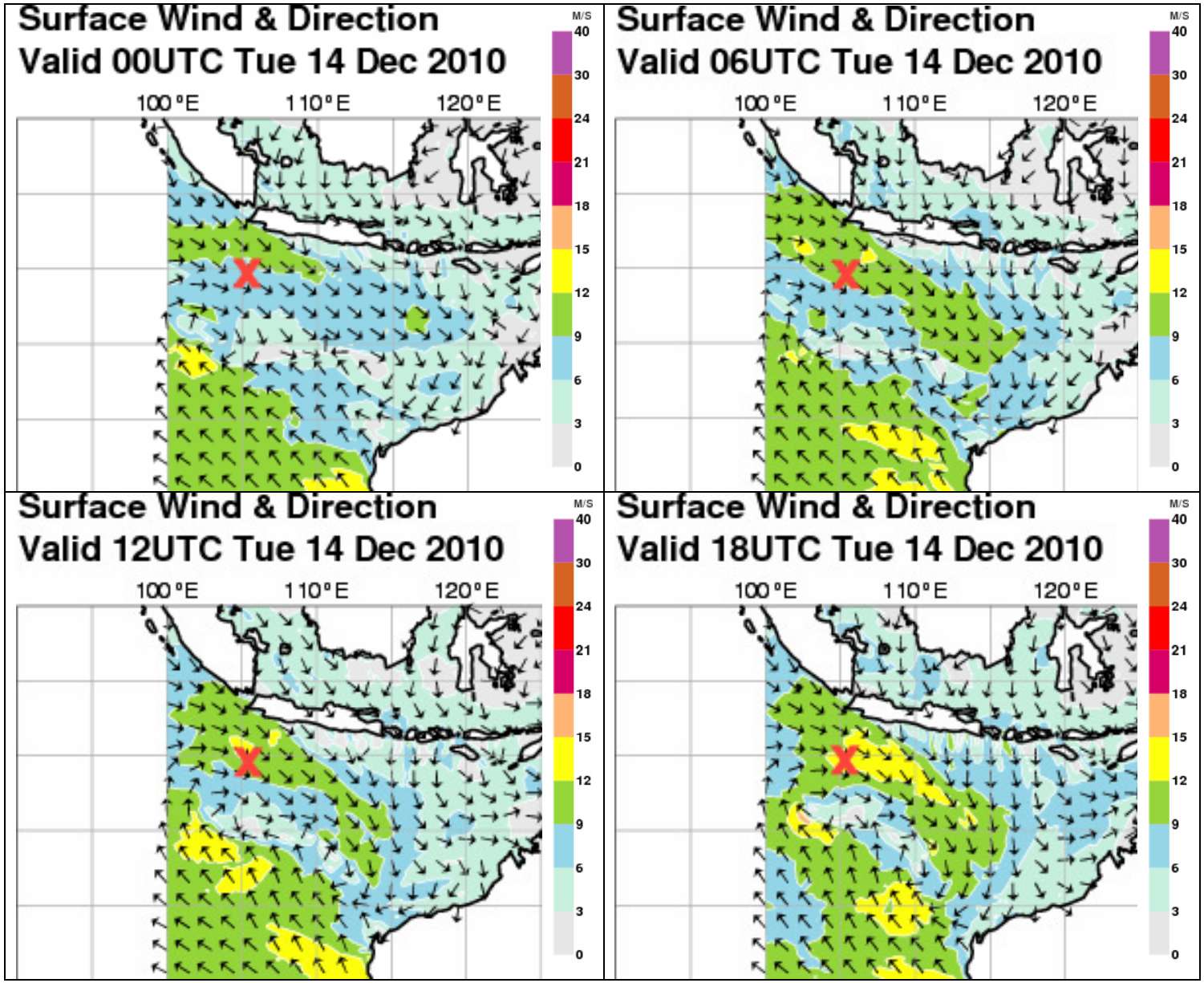


Figure 12: 10 m wind model analyses in 6 hour intervals from 00 UTC to 18 UTC on 14 December 2010. Wind speed in m/s. Wind speed in knots = 1.944 **x** m/s.

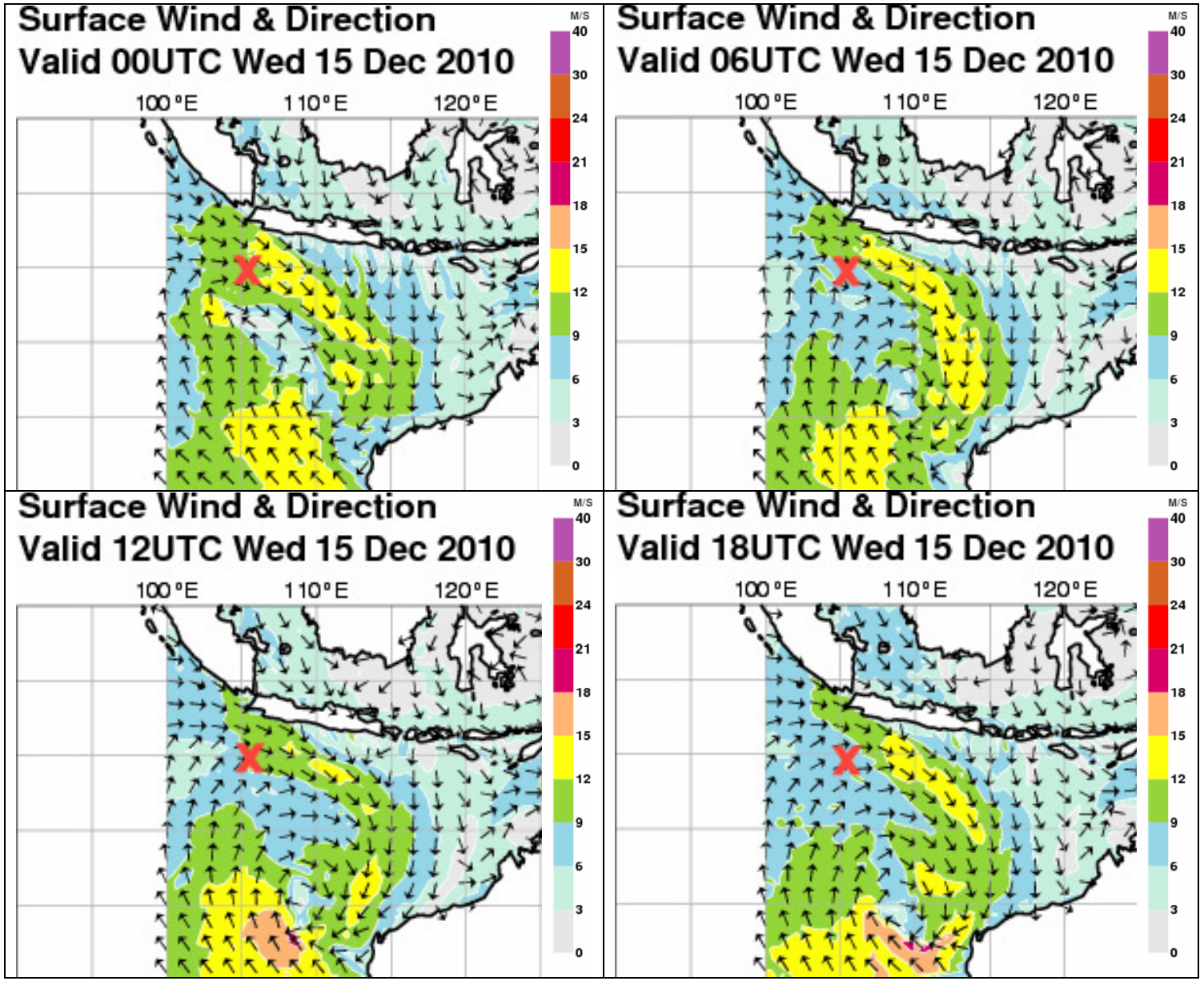


Figure 13: 10 m wind model analyses in 6 hour intervals from 00 UTC to 18 UTC 15 December 2010. Wind speed in m/s. Wind speed in knots = 1.944 **x** m/s.

Cloud and rainfall conditions

Satellite imagery (Figures 5 and 6; as well as other images not shown) and hourly precipitation data recorded at Christmas Island Aerodrome (Appendix B) indicate that periods of rain and showers, with possible thunderstorms, occurred at Christmas Island on 14 and 15 December 2010. Daily rainfall totals recorded at Christmas Island Aerodrome in the 24 hours prior to 9am on the 14th, 15th and 16th were 10.6 mm, 22.6 mm and 50.0 mm respectively. Moderate to heavy rainfall was recorded at Christmas Island Aerodrome during the morning of the 15th, and similar rainfall could have occurred on the northern side of the island.

Satellite data and electronic cloud observations at Christmas Island Aerodrome (Appendix B) indicate that generally cloudy to overcast conditions were experienced on 14 and 15 December.

Seas and swell

Model data indicates an easing long range southerly swell in the Christmas Island area on the 14th and 15th, with swell wave heights of 1.0 to 1.5 m on the morning of the 14th easing to about 1.0 m during the day and continuing at about 1.0 m on the 15th. Locally generated seas were likely to be 2.5 to 3.0 m from the northwest on the 14th; increasing to 2.5 to 3.5 m from the northwest during the evening and maintaining 2.5 to 3.5 m from the northwest on the 15th. Thus, significant wave heights, were increasing on the 14th due to the increase in northwesterly winds. Model data suggests that significant wave heights of 2.0 to 2.5 m were likely to have been present during the morning of the 14th (Figure 14), increasing to 3.0 to 4.0 m by evening, but then eased during the day on the 15th to 2.0 to 3.0 m (Figure 15).

High tide at Flying Fish Cove Jetty (Figure 11 - on the northeast of the island south of Rocky Point) was expected on the 14th at approximately 0000 CXT (1.0 m) and 1330 CXT (1.1 m); and on the 15th at approximately 0100 CXT (0.9 m) and 1420 CXT (1.2 m). Data from a tide gauge at Flying Fish Cove Jetty (Figure 11 - on the northeast of the island south of Rocky Point) indicate that the observed sea level was highly variable around the predicted level, with observations generally above predictions on the 14th and morning of the 15th (Table 1).

Date (CXT)	Mean departure from predicted (m)	Range (m)
14/12/2010	0.11	-0.56 to 0.93
15/12/2010	0.03	-0.55 to 0.93

Table 1: Sea level data from Flying Fish Cove Jetty.

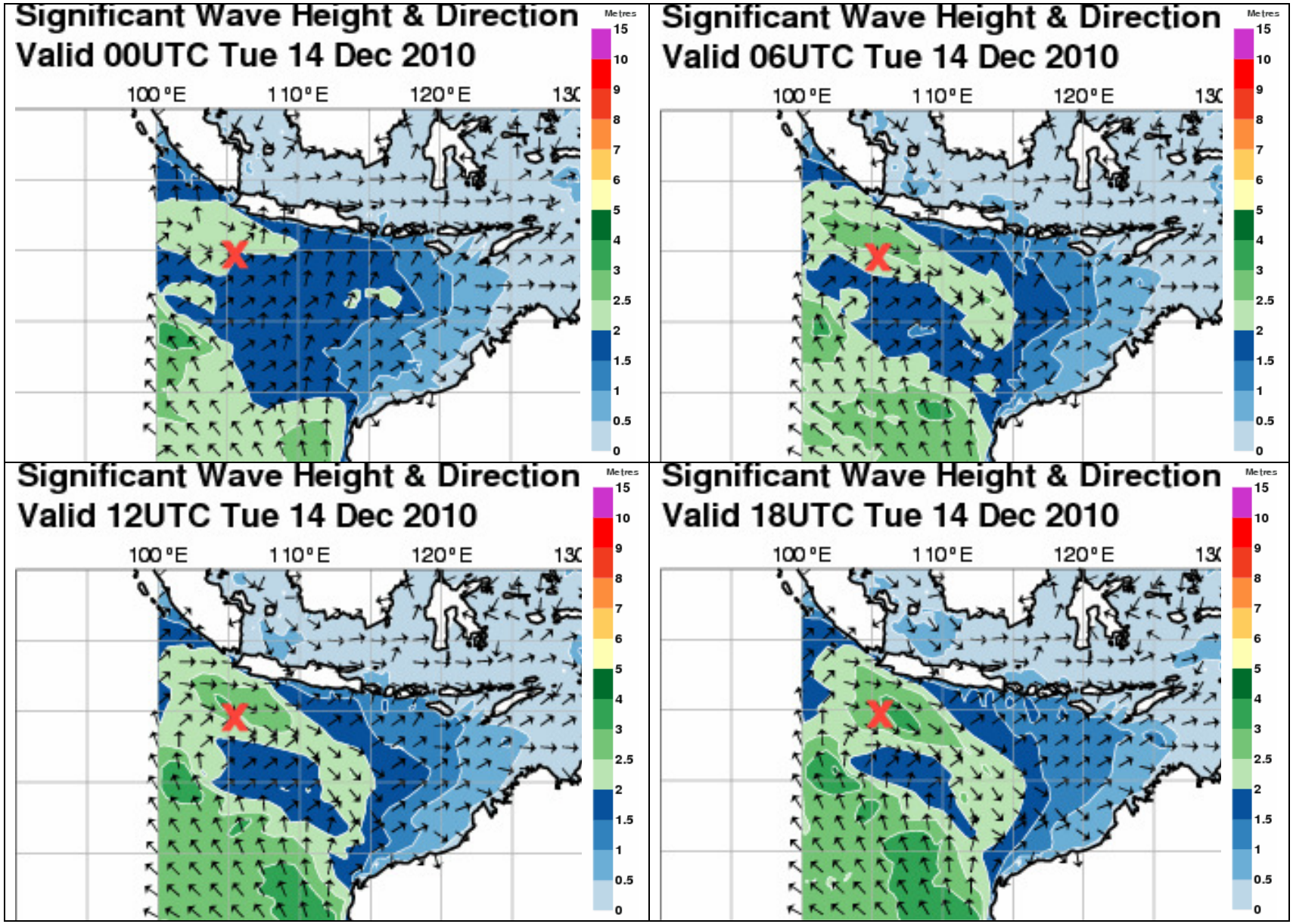


Figure 14: 6 hourly significant wave height model analyses from 00 UTC to 18 UTC 14 December 2010. Wave height in metres.

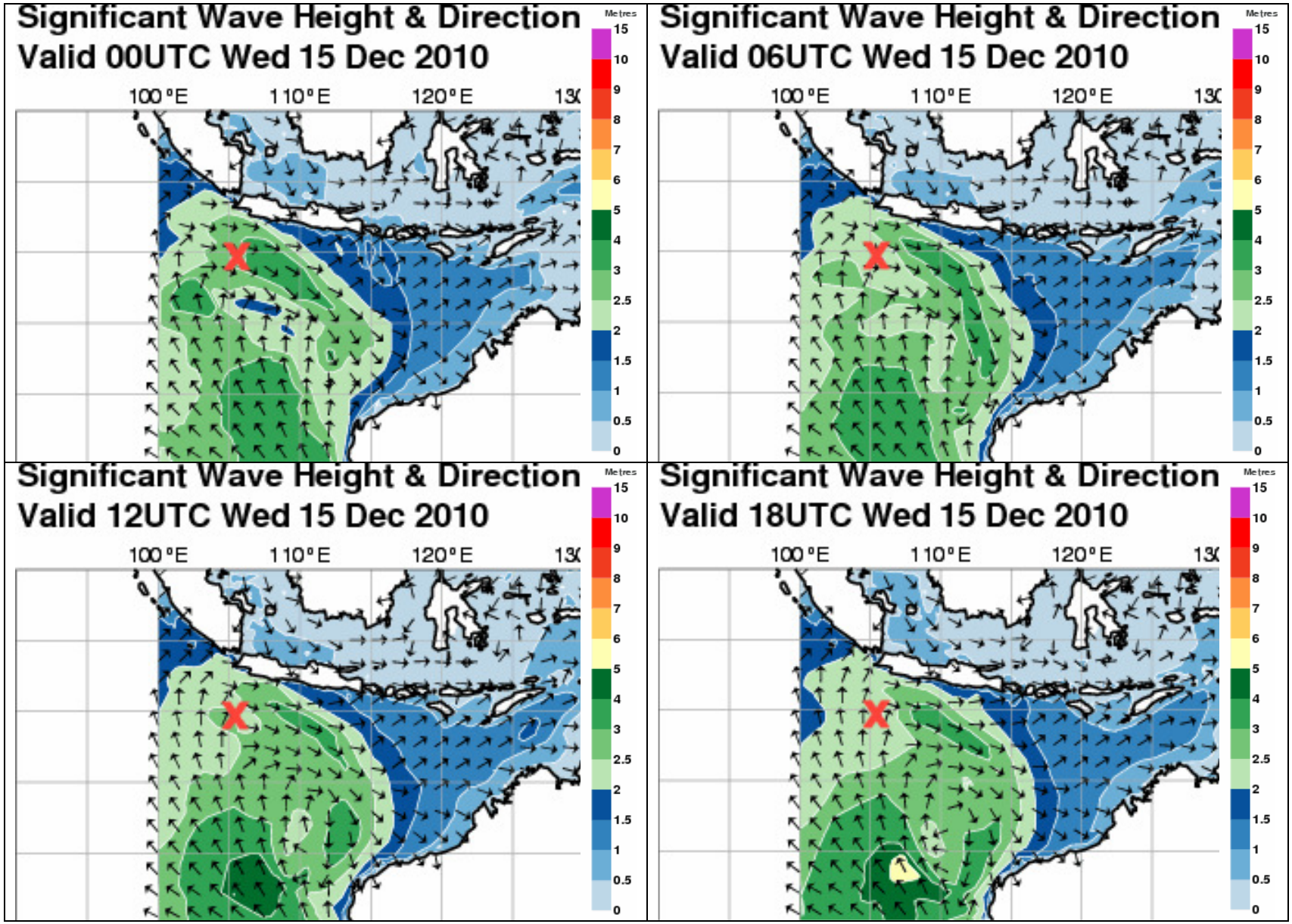


Figure 15: 6 hourly significant wave height model analyses from 00 UTC to 18 UTC 15 December 2010. Wave height in metres.

Appendix A: Hourly weather observations from Christmas Island Aerodrome; 10 to 19 December 2010

Date and Time (CXT)	Precipitation in last 10 minutes (mm)	Precipitation since 9am local time (mm)	Air Temperature (°C)	Dew point temperature (°C)	Relative humidity (%)	Wind direction (° True)	Wind speed (knots)	Speed of maximum windgust in last 10 minutes (knots)	Mean sea level pressure (hPa)
10/12/2010 00:00	0.0	0.0	23.4	22.4	94	270	4	6	1008.9
10/12/2010 01:00	0.0	0.0	23.9	22.4	91	260	5	9	1008.1
10/12/2010 02:00	0.0	0.0	23.8	22.5	92	270	5	8	1007.4
10/12/2010 03:00	0.0	0.0	23.9	22.6	92	250	6	12	1006.9
10/12/2010 04:00	0.0	0.0	23.8	22.6	93	250	4	7	1006.9
10/12/2010 05:00	0.0	0.0	23.7	22.5	93	240	4	6	1007.6
10/12/2010 06:00	0.0	0.0	24.2	22.6	91	220	6	9	1008.0
10/12/2010 07:00	0.0	0.0	24.9	22.8	88	260	5	7	1008.0
10/12/2010 08:00	0.0	0.0	25.6	23.1	86	250	5	9	1007.8
10/12/2010 09:00	0.0	0.0	25.6	23.6	89	260	6	9	1008.0
10/12/2010 09:45	13.6	13.6	22.1	21.6	97	180	10	19	1009.5
10/12/2010 10:00	9.4	29.2	21.7	21.4	98	180	10	14	1009.3
10/12/2010 10:24	1.0	36.0	21.2	20.9	98	240	7	10	1009.5
10/12/2010 11:00	0.8	39.2	21.8	21.3	97	240	7	12	1008.7
10/12/2010 12:00	0.6	41.2	21.6	21.0	96	220	7	11	1007.7
10/12/2010 13:00	0.2	43.6	22.2	21.8	98	270	6	11	1007.5
10/12/2010 14:00	0.8	46.6	21.6	21.1	97	290	6	11	1007.4
10/12/2010 15:00	1.4	53.8	21.6	21.3	98	250	5	7	1007.5
10/12/2010 16:00	1.2	62.0	21.8	21.5	98	250	6	8	1006.6
10/12/2010 17:00	0.0	64.8	22.1	21.6	97	220	7	10	1006.8
10/12/2010 18:00	0.0	65.0	22.6	22.3	98	230	9	14	1006.4
10/12/2010 19:00	0.0	65.0	22.8	22.5	98	230	9	14	1006.7
10/12/2010 20:00	0.0	65.0	23.0	22.7	98	220	8	13	1007.3
10/12/2010 21:00	0.0	65.0	23.3	22.7	96	200	8	12	1007.7
10/12/2010 22:00	0.0	65.4	23.5	22.9	96	190	7	13	1008.0
10/12/2010 22:42	0.0	65.4	23.2	22.8	98	200	7	12	1008.0
10/12/2010 23:00	0.0	65.4	23.4	23.0	98	190	6	14	1007.8
11/12/2010 00:00	0.0	65.4	23.2	22.6	96	190	8	15	1006.3
11/12/2010 01:00	0.0	65.4	23.4	22.8	96	190	8	14	1005.6

Date and Time (CXT)	Precipitation in last 10 minutes (mm)	Precipitation since 9am local time (mm)	Air Temperature (°C)	Dew point temperature (°C)	Relative humidity (%)	Wind direction (° True)	Wind speed (knots)	Speed of maximum windgust in last 10 minutes (knots)	Mean sea level pressure (hPa)
11/12/2010 01:13	0.0	65.4	23.3	22.7	96	190	7	13	1005.3
11/12/2010 02:00	0.0	65.4	23.4	22.5	95	190	7	13	1005.2
11/12/2010 02:18	0.0	65.4	23.3	22.4	95	190	8	13	1004.9
11/12/2010 03:00	0.0	65.4	23.7	23.0	96	190	8	12	1004.8
11/12/2010 03:11	0.0	65.4	23.6	23.0	96	190	7	11	1004.8
11/12/2010 03:34	0.6	67.0	23.4	22.8	96	210	7	14	1004.7
11/12/2010 04:00	2.8	70.0	23.5	23.1	98	230	5	8	1005.0
11/12/2010 05:00	0.6	104.8	22.6	22.5	99	180	5	8	1005.6
11/12/2010 06:42			22.8	22.7	99				1006.3
11/12/2010 06:48			22.6	22.5	99	150	3	11	1006.5
11/12/2010 07:00	6.0		21.9	21.7	99	210	9	14	1006.4
11/12/2010 08:00	2.6		22.0	22.0	100	200	7	13	1007.1
11/12/2010 08:26	1.2		21.9	21.7	99	230	5	8	1007.1
11/12/2010 09:00	0.2		22.0	21.9	99	230	7	10	1007.2
11/12/2010 10:00	0.0	3.2	22.5	22.2	98	250	7	14	1006.4
11/12/2010 10:26	0.0	3.2	22.4	22.0	98	250	8	12	1006.2
11/12/2010 11:00			22.0	22.0	100	240	6		1005.7
11/12/2010 11:53	0.6	7.0	22.4	22.1	98	270	6	9	1005.2
11/12/2010 12:00	0.4	7.2	22.5	22.2	98	280	7	10	1005.3
11/12/2010 12:18	2.0	10.2	22.4	22.1	98	270	5	8	1005.4
11/12/2010 12:36	1.0	12.8	22.4	22.1	98	250	6	10	1005.0
11/12/2010 13:00	1.2	15.2	22.4	22.1	98	250	6	11	1004.4
11/12/2010 14:00	0.2	19.0	22.7	22.4	98	220	6	8	1003.9
11/12/2010 15:00	0.2	20.6	23.0	22.7	98	250	3	6	1003.6
11/12/2010 16:00			23.0	23.0	100	270	4		1002.5
11/12/2010 17:00	0.2	35.6	22.5	22.4	99	220	5	8	1004.0
11/12/2010 18:00	4.8	56.2	22.1	22.0	99	190	5	9	1004.5
11/12/2010 19:00	1.2	71.6	22.2	22.2	100	220	4	6	1005.1
11/12/2010 19:12	0.8	72.4	22.2	22.1	99	220	3	5	1005.2
11/12/2010 20:00	0.0	73.0	22.2	22.1	99	220	3	5	1005.3
11/12/2010 21:00	0.0	73.0	22.3	22.3	100	220	2	3	1005.6

Date and Time (CXT)	Precipitation in last 10 minutes (mm)	Precipitation since 9am local time (mm)	Air Temperature (°C)	Dew point temperature (°C)	Relative humidity (%)	Wind direction (° True)	Wind speed (knots)	Speed of maximum windgust in last 10 minutes (knots)	Mean sea level pressure (hPa)
11/12/2010 22:00	0.0	73.0	22.4	22.3	99	240	4	6	1005.5
11/12/2010 23:00	0.0	73.0	22.6	22.5	99	290	4	5	1005.1
11/12/2010 23:10	0.2	73.2	22.7	22.6	99	290	4	6	1004.9
12/12/2010 00:00	0.0	73.2	22.9	22.8	99	310	5	9	1004.5
12/12/2010 01:00	0.0	73.2	23.0	22.9	99	310	5	8	1003.9
12/12/2010 02:00	0.0	73.2	23.1	22.7	98	310	7	11	1003.4
12/12/2010 03:00	0.0	73.2	22.9	22.5	98	310	6	9	1003.1
12/12/2010 04:00	0.0	73.2	23.3	22.6	96	300	6	11	1003.2
12/12/2010 05:00	0.0	73.2	23.0	22.4	96	300	8	14	1003.7
12/12/2010 06:00	0.0	73.2	23.3	22.9	98	290	6	11	1003.9
12/12/2010 07:00	0.0	73.2	23.6	22.9	96	280	5	8	1004.7
12/12/2010 08:00	0.0	73.6	23.3	22.7	96	280	7	14	1005.0
12/12/2010 09:00	0.0	74.2	23.5	22.9	96	290	8	14	1005.2
12/12/2010 10:00	0.0	0.0	24.1	23.1	94	270	8	17	1004.9
12/12/2010 11:00	0.0	0.0	24.9	23.3	91	280	7	12	1004.4
12/12/2010 12:00	0.0	0.0	25.2	22.9	87	290	8	13	1004.0
12/12/2010 12:52	0.8	3.0	22.5	21.9	96	280	7	13	1004.0
12/12/2010 12:54	0.4	3.0	22.6	21.9	96	280	7	13	1004.0
12/12/2010 13:00	0.0	3.0	22.7	22.3	98	280	7	13	1004.0
12/12/2010 13:34	0.0	3.0	22.8	22.2	96	290	8	15	1003.1
12/12/2010 13:39	0.0	3.0	22.9	22.5	98	290	8	15	1003.1
12/12/2010 14:00	0.2	3.4	23.0	22.7	98	300	10	16	1003.2
12/12/2010 15:00	2.4	6.4	23.3	22.7	96	300	8	13	1002.4
12/12/2010 16:00	0.0	7.8	23.7	23.3	98	300	8	14	1002.2
12/12/2010 16:14	0.0	7.8	23.5	22.9	96	290	6	11	1002.4
12/12/2010 16:35	0.0	7.8	23.3	22.7	96	280	7	13	1002.7
12/12/2010 17:00	0.0	7.8	23.1	22.5	96	270	5	10	1003.1
12/12/2010 18:00	0.0	8.0	23.1	22.7	98	280	6	11	1003.8
12/12/2010 19:00	0.4	11.4	22.8	22.5	98	290	9	18	1004.6
12/12/2010 20:00	0.0	13.0	22.7	22.4	98	290	9	16	1004.8
12/12/2010 21:00	0.0	13.2	23.4	23.1	98	280	7	15	1005.2

Date and Time (CXT)	Precipitation in last 10 minutes (mm)	Precipitation since 9am local time (mm)	Air Temperature (°C)	Dew point temperature (°C)	Relative humidity (%)	Wind direction (° True)	Wind speed (knots)	Speed of maximum windgust in last 10 minutes (knots)	Mean sea level pressure (hPa)
12/12/2010 22:00	0.2	13.4	23.6	23.0	96	280	7	14	1005.1
12/12/2010 23:00	0.0	13.4	23.7	23.1	96	280	7	15	1005.1
12/12/2010 23:52	0.0	13.4	23.5	22.6	95	290	7	12	1004.6
13/12/2010 00:00	0.0	13.4	23.6	22.6	94	290	8	15	1004.6
13/12/2010 00:16	0.0	13.4	23.7	22.8	95	290	8	15	1004.6
13/12/2010 01:00	0.0	13.4	23.7	22.7	94	290	7	16	1004.4
13/12/2010 02:00	0.0	13.4	24.1	22.5	91	300	8	16	1003.7
13/12/2010 02:32	0.0	13.4	24.2	22.3	89	300	9	18	1003.4
13/12/2010 02:45	0.0	13.4	24.2	22.3	89	300	9	15	1003.4
13/12/2010 02:55	0.0	13.4	24.2	22.3	89	300	9	16	1003.4
13/12/2010 03:00	0.0	13.4	24.1	22.0	88	290	9	18	1003.4
13/12/2010 04:00	0.0	13.4	24.1	22.2	89	290	7	13	1003.3
13/12/2010 04:20	0.0	13.4	24.1	22.5	91	290	8	14	1003.4
13/12/2010 05:00	0.0	13.4	24.2	22.4	90	290	8	14	1003.7
13/12/2010 05:03	0.0	13.4	24.2	22.3	89	290	7	13	1003.8
13/12/2010 05:05	0.0	13.4	24.2	22.4	90	290	7	13	1003.7
13/12/2010 05:48	0.0	13.4	24.1	22.3	90	290	9	14	1004.2
13/12/2010 06:00	0.0	13.4	24.2	22.3	89	280	8	14	1004.4
13/12/2010 06:10	0.0	13.4	24.3	22.5	90	290	7	13	1004.5
13/12/2010 07:00	0.0	13.4	24.3	23.3	94	290	8	17	1005.2
13/12/2010 07:50	0.0	13.6	24.6	23.0	91	290	9	16	1005.8
13/12/2010 08:00	0.0	13.6	24.8	23.3	91	290	10	16	1005.9
13/12/2010 08:18	0.0	13.6	25.0	22.8	88	300	10	16	1005.8
13/12/2010 08:49	0.0	13.6	25.2	23.2	89	300	8	15	1005.9
13/12/2010 09:00	0.0	13.6	25.3	22.8	86	300	11	18	1005.7
13/12/2010 09:05	0.0	0.0	25.5	23.2	87	300	10	17	1005.7
13/12/2010 10:00	0.0	0.0	26.2	23.4	85	300	10	20	1005.2
13/12/2010 10:23	0.0	0.0	25.7	23.5	88	300	11	20	1005.1
13/12/2010 11:00	0.0	0.0	25.9	23.4	86	290	10	20	1004.9
13/12/2010 11:26	0.0	0.0	26.5	22.9	81	290	10	21	1005.0
13/12/2010 12:00	0.0	0.0	26.6	23.6	84	300	10	16	1004.8

Date and Time (CXT)	Precipitation in last 10 minutes (mm)	Precipitation since 9am local time (mm)	Air Temperature (°C)	Dew point temperature (°C)	Relative humidity (%)	Wind direction (° True)	Wind speed (knots)	Speed of maximum windgust in last 10 minutes (knots)	Mean sea level pressure (hPa)
13/12/2010 12:05	0.0	0.0	26.7	23.7	84	300	9	18	1004.7
13/12/2010 12:29	0.0	0.0	26.1	23.6	86	300	9	15	1004.6
13/12/2010 13:00	0.0	0.0	26.7	23.2	81	300	9	19	1004.2
13/12/2010 14:00	0.0	0.0	27.1	23.0	78	290	10	18	1003.6
13/12/2010 15:00	0.0	0.0	25.7	23.7	89	320	11	21	1003.5
13/12/2010 15:12	0.2	0.8	24.9	24.0	95	320	8	18	1003.5
13/12/2010 16:00	0.0	0.8	25.1	24.1	94	290	7	13	1003.5
13/12/2010 16:39	0.0	0.8	25.2	23.5	90	300	9	17	1003.7
13/12/2010 17:00	0.0	0.8	25.3	23.3	89	290	9	16	1003.9
13/12/2010 18:00	0.0	0.8	25.3	23.1	88	300	9	18	1004.3
13/12/2010 19:00	0.0	0.8	25.4	23.1	87	290	9	16	1005.0
13/12/2010 19:46	0.0	0.8	25.2	23.2	89	290	9	19	1005.3
13/12/2010 20:00	0.8	1.6	24.0	22.7	92	280	9	17	1005.5
13/12/2010 20:27	0.2	3.0	23.1	22.4	96	290	9	17	1005.7
13/12/2010 21:00	0.0	3.0	24.2	23.2	94	290	9	19	1005.6
13/12/2010 22:00	0.0	3.8	23.9	22.9	94	310	9	17	1005.9
13/12/2010 22:53	0.0	3.8	24.6	23.4	93	300	9	19	1005.4
13/12/2010 23:00	0.0	3.8	24.6	23.7	95	300	9	19	1005.2
13/12/2010 23:03	0.0	3.8	24.7	23.7	94	310	8	19	1005.2
13/12/2010 23:28	0.0	3.8	24.9	23.9	94	310	8	13	1004.7
13/12/2010 23:58	0.0	5.8	24.0	23.1	95	300	8	14	1004.9
14/12/2010 00:00	0.0	5.8	24.1	23.1	94	300	8	17	1004.9
14/12/2010 00:03	0.0	5.8	24.0	23.1	95	300	8	18	1004.9
14/12/2010 01:00	0.2	6.0	24.4	23.7	96	310	10	19	1004.3
14/12/2010 01:07	2.4	8.2	23.2	22.6	96	270	16	26	1004.6
14/12/2010 02:00	0.0	9.4	23.6	23.2	98	310	8	14	1003.7
14/12/2010 03:00	0.0	9.4	24.4	24.0	98	330	7	10	1003.1
14/12/2010 03:42	0.0	10.4	24.8	23.5	93	320	12	21	1002.8
14/12/2010 03:47	0.0	10.4	24.7	23.5	93	320	11	21	1002.8
14/12/2010 04:00	0.0	10.4	24.9	23.7	93	330	11	23	1002.6
14/12/2010 04:56	0.0	10.4	25.2	22.9	87	330	14	23	1002.5

Date and Time (CXT)	Precipitation in last 10 minutes (mm)	Precipitation since 9am local time (mm)	Air Temperature (°C)	Dew point temperature (°C)	Relative humidity (%)	Wind direction (° True)	Wind speed (knots)	Speed of maximum windgust in last 10 minutes (knots)	Mean sea level pressure (hPa)
14/12/2010 05:00	0.0	10.4	25.2	22.7	86	330	14	24	1002.4
14/12/2010 05:41	0.0	10.4	25.1	23.2	89	330	15	25	1002.6
14/12/2010 06:00	0.0	10.4	25.3	23.4	89	330	13	23	1002.7
14/12/2010 07:00	0.0	10.4	25.2	24.0	93	310	10	18	1003.4
14/12/2010 08:00	0.0	10.6	24.7	23.5	93	300	9	15	1004.0
14/12/2010 08:28	0.0	10.6	25.6	23.7	89	310	10	18	1004.1
14/12/2010 08:29	0.0	10.6	25.7	23.7	89	310	10	18	1004.1
14/12/2010 09:00	0.0	10.6	25.9	23.6	87	310	11	19	1004.2
14/12/2010 10:00	0.0	0.0	25.9	24.2	90	320	10	18	1004.0
14/12/2010 10:23	0.0	0.0	26.0	23.7	87	310	10	17	1003.9
14/12/2010 10:24	0.0	0.0	26.0	23.8	88	310	10	17	1003.9
14/12/2010 10:37	1.0	1.0	25.0	23.8	93	310	9	18	1004.1
14/12/2010 10:53	0.0	1.0	25.4	24.3	94	310	11	25	1003.8
14/12/2010 11:00	0.0	1.0	25.3	24.1	93	320	11	20	1003.6
14/12/2010 12:00	0.0	1.0	25.6	24.2	92	320	11	21	1002.7
14/12/2010 13:00	0.0	1.0	26.3	23.7	86	320	12	23	1002.0
14/12/2010 13:28	0.0	1.0	26.2	23.6	86	310	11	20	1001.5
14/12/2010 14:00	0.0	1.0	24.8	23.2	91	320	10	20	1001.2
14/12/2010 14:05	0.0	1.0	25.2	23.6	91	320	10	20	1001.1
14/12/2010 14:27	0.0	1.0	25.9	23.6	87	320	11	18	1000.7
14/12/2010 15:00	0.0	1.2	24.9	23.9	94	310	10	22	1000.5
14/12/2010 15:43	0.0	1.2	25.9	23.9	89	320	11	24	1000.2
14/12/2010 15:45	0.0	1.2	25.8	23.9	89	320	12	24	1000.2
14/12/2010 16:00	0.0	1.6	24.3	22.8	91	320	13	23	1000.3
14/12/2010 17:00	0.0	1.6	25.5	23.6	89	320	12	24	1000.3
14/12/2010 17:27	0.0	1.6	25.7	23.2	86	320	13	22	1000.6
14/12/2010 17:30	0.0	1.6	25.8	23.5	87	320	13	21	1000.6
14/12/2010 17:42	0.0	1.6	25.8	23.8	89	310	10	18	1000.6
14/12/2010 17:47	0.0	1.6	25.7	24.0	90	310	11	20	1000.7
14/12/2010 18:00	0.0	1.6	25.7	23.8	89	310	11	21	1000.8
14/12/2010 19:00	0.0	1.6	24.9	24.2	96	310	11	23	1001.9

Date and Time (CXT)	Precipitation in last 10 minutes (mm)	Precipitation since 9am local time (mm)	Air Temperature (°C)	Dew point temperature (°C)	Relative humidity (%)	Wind direction (° True)	Wind speed (knots)	Speed of maximum windgust in last 10 minutes (knots)	Mean sea level pressure (hPa)
14/12/2010 19:57	0.0	1.6	25.1	23.1	89	310	14	29	1002.4
14/12/2010 20:00	0.0	1.6	25.2	23.2	89	310	14	29	1002.4
14/12/2010 20:39	3.0	4.6	23.5	22.6	95	280	16	30	1003.4
14/12/2010 21:00	0.0	5.4	24.7	24.3	98	290	14	29	1003.0
14/12/2010 22:00	0.0	5.6	24.4	24.0	98	280	10	26	1003.4
14/12/2010 23:00	0.0	6.6	24.3	23.9	98	290	12	20	1003.2
15/12/2010 00:00	0.0	6.6	24.2	23.8	98	290	13	19	1002.5
15/12/2010 01:00	0.2	7.0	24.6	24.0	96	290	11	23	1001.8
15/12/2010 02:00	0.0	8.2	23.6	23.2	98	290	11	22	1001.4
15/12/2010 03:00	0.0	8.4	24.4	24.1	98	300	11	18	1001.6
15/12/2010 04:00	0.0	8.6	24.2	23.5	96	290	13	23	1001.6
15/12/2010 04:57	0.0	8.6	24.2	23.2	94	320	15	22	1002.0
15/12/2010 05:00	0.0	8.6	24.1	23.2	95	320	13	22	1002.0
15/12/2010 06:00	0.0	9.0	24.3	23.9	98	310	10	21	1003.0
15/12/2010 07:00	0.0	9.2	24.2	23.6	96	280	9	16	1003.7
15/12/2010 08:00	2.6	15.6	23.2	22.9	98	300	10	19	1004.3
15/12/2010 09:00	0.8	22.6	23.8	23.7	99	310	8	15	1004.3
15/12/2010 10:00	0.0	0.6	24.1	24.0	99	310	8	14	1004.2
15/12/2010 11:00	1.0	11.8	23.4	23.1	98	310	8	15	1003.9
15/12/2010 12:00	0.2	17.4	23.9	23.6	98	280	8	15	1003.2
15/12/2010 13:00	0.0	18.2	23.8	23.7	99	280	9	15	1002.9
15/12/2010 14:00	0.0	18.2	24.0	23.7	98	310	7	16	1002.1
15/12/2010 15:00	0.0	21.0	23.8	23.4	98	290	7	14	1001.7
15/12/2010 16:00	0.0	21.0	23.9	23.3	96	280	7	12	1001.3
15/12/2010 16:52	0.0	21.0	23.6	23.2	98	270	7	13	1001.9
15/12/2010 17:00	0.0	21.0	23.7	23.3	98	270	7	13	1001.9
15/12/2010 18:00	0.0	21.0	23.7	23.3	98	270	7	12	1003.0
15/12/2010 18:53	0.0	21.0	23.6	23.0	96	270	7	11	1004.0
15/12/2010 19:00	0.0	21.0	23.6	23.0	96	270	6	11	1004.1
15/12/2010 19:23	0.0	21.0	23.9	23.2	96	270	7	12	1004.3
15/12/2010 20:00	0.0	21.0	24.1	23.4	96	270	7	12	1004.4

Date and Time (CXT)	Precipitation in last 10 minutes (mm)	Precipitation since 9am local time (mm)	Air Temperature (°C)	Dew point temperature (°C)	Relative humidity (%)	Wind direction (° True)	Wind speed (knots)	Speed of maximum windgust in last 10 minutes (knots)	Mean sea level pressure (hPa)
15/12/2010 20:20	0.2	23.4	22.9	22.2	96	260	7	15	1004.9
15/12/2010 21:00	0.0	23.4	23.3	22.7	96	260	8	12	1004.7
15/12/2010 21:23	0.0	23.4	23.5	23.1	98	270	7	15	1004.5
15/12/2010 21:34	0.0	23.4	23.5	22.9	96	270	8	13	1004.5
15/12/2010 22:00	0.0	23.4	23.5	22.8	96	260	7	14	1004.4
15/12/2010 23:00	0.0	23.4	23.6	22.7	95	270	7	13	1004.5
16/12/2010 00:00	0.0	23.4	23.8	22.6	93	260	6	9	1004.1
16/12/2010 01:00	0.0	23.4	23.8	22.6	93	270	5	11	1003.7
16/12/2010 02:00	0.0	23.4	23.8	23.1	96	260	3	6	1003.2
16/12/2010 03:00	0.0	27.8	23.2	22.6	96	280	6	14	1003.0
16/12/2010 03:22	0.0	28.0	23.2	22.8	98	290	7	10	1003.1
16/12/2010 04:00	4.2	33.4	22.9	22.6	98	280	6	10	1003.4
16/12/2010 05:00	1.4	37.4	22.5	22.1	98	260	4	9	1004.2
16/12/2010 05:27	0.2	43.2	21.8	20.7	93	240	8	16	1004.7
16/12/2010 06:00	0.2	44.2	21.9	20.8	93	260	7	13	1005.2
16/12/2010 06:28	1.8	46.0	21.9	21.1	95	280	10	19	1006.1
16/12/2010 06:47	0.2	49.6	21.7	20.8	95	260	6	11	1006.0
16/12/2010 07:00	0.2	50.0	22.2	21.4	95	260	6	11	1005.9
16/12/2010 08:00	0.0	50.0	24.0	23.1	95	270	6	10	1005.7
16/12/2010 09:00	0.0	50.0	25.1	22.9	88	270	7	13	1005.6
16/12/2010 10:00	0.0	0.0	25.7	22.5	83	260	8	14	1005.3
16/12/2010 11:00	0.0	0.0	26.4	23.4	84	250	8	15	1004.7
16/12/2010 12:00	0.0	0.4	27.0	23.8	83	290	9	17	1004.1
16/12/2010 13:00	0.0	1.4	26.3	24.1	88	270	9	17	1003.5
16/12/2010 14:00	0.0	1.6	25.5	23.3	88	280	8	14	1003.0
16/12/2010 14:38	0.0	1.6	25.3	22.8	86	280	10	19	1003.0
16/12/2010 14:53	0.0	1.6	25.2	23.2	89	270	9	15	1002.9
16/12/2010 14:54	0.0	1.6	25.2	23.2	89	270	9	15	1002.9
16/12/2010 15:00	0.0	1.6	25.2	23.3	89	270	8	12	1002.8
16/12/2010 15:07	0.0	1.6	25.4	23.4	89	280	7	19	1003.0
16/12/2010 15:29	0.0	1.6	25.3	23.3	89	280	8	15	1003.0

Date and Time (CXT)	Precipitation in last 10 minutes (mm)	Precipitation since 9am local time (mm)	Air Temperature (°C)	Dew point temperature (°C)	Relative humidity (%)	Wind direction (° True)	Wind speed (knots)	Speed of maximum windgust in last 10 minutes (knots)	Mean sea level pressure (hPa)
16/12/2010 16:00	0.0	1.6	25.2	23.5	90	280	9	17	1002.9
16/12/2010 17:00	0.0	1.6	25.2	23.9	93	280	8	16	1003.3
16/12/2010 17:12	0.0	1.6	25.2	23.3	89	280	9	18	1003.5
16/12/2010 18:00	0.0	1.6	25.2	23.2	89	280	8	17	1004.0
16/12/2010 18:15	1.0	2.6	24.9	23.3	91	270	7	23	1004.5
16/12/2010 18:36	0.4	8.8	24.0	23.3	96	270	8	17	1004.5
16/12/2010 18:53	0.0	8.8	24.1	23.2	95	270	8	16	1004.8
16/12/2010 19:00	0.0	8.8	24.2	23.3	95	270	8	18	1004.9
16/12/2010 20:00	0.0	8.8	24.3	23.1	93	270	7	14	1005.5
16/12/2010 21:00	0.0	8.8	24.6	23.1	91	280	7	14	1006.0
16/12/2010 21:14	0.0	8.8	24.8	23.3	91	270	8	15	1006.0
16/12/2010 21:33	0.0	9.2	24.2	23.2	94	270	7	13	1006.0
16/12/2010 21:58	0.0	9.2	24.3	23.4	95	280	8	15	1006.0
16/12/2010 22:00	0.0	9.2	24.3	23.4	95	280	7	14	1005.9
16/12/2010 22:09	0.0	9.2	23.9	22.9	94	270	10	17	1006.1
16/12/2010 22:13	0.0	9.2	23.7	22.7	94	270	9	17	1006.2
16/12/2010 23:00	0.8	11.6	23.8	23.4	98	270	8	15	1005.6
17/12/2010 00:00	0.2	15.0	23.5	23.1	98	270	8	13	1005.0
17/12/2010 01:00	0.0	19.0	23.6	23.3	98	270	7	14	1004.3
17/12/2010 02:00	0.2	21.0	23.5	23.1	98	270	7	15	1004.1
17/12/2010 02:33	0.0	21.2	23.5	23.1	98	270	7	12	1003.6
17/12/2010 02:43	0.0	21.2	23.6	23.2	98	260	7	13	1003.6
17/12/2010 03:00	0.0	21.2	23.8	23.2	96	270	7	16	1003.5
17/12/2010 03:21	0.0	21.2	23.5	22.8	96	250	6	12	1003.7
17/12/2010 04:00	0.0	21.2	23.4	22.5	95	270	6	11	1003.8
17/12/2010 05:00	0.0	21.2	23.4	22.7	96	270	7	13	1004.1
17/12/2010 06:00	0.0	21.6	23.6	22.6	94	250	6	11	1004.7
17/12/2010 07:00	0.0	21.6	24.2	22.6	91	260	6	13	1005.4
17/12/2010 08:00	0.0	21.6	25.4	22.5	84	260	7	13	1006.0
17/12/2010 09:00	0.0	21.6	26.3	22.8	81	260	8	19	1006.4
17/12/2010 10:00	0.0	0.0	26.1	22.7	82	250	8	16	1006.3

Date and Time (CXT)	Precipitation in last 10 minutes (mm)	Precipitation since 9am local time (mm)	Air Temperature (°C)	Dew point temperature (°C)	Relative humidity (%)	Wind direction (° True)	Wind speed (knots)	Speed of maximum windgust in last 10 minutes (knots)	Mean sea level pressure (hPa)
17/12/2010 11:00	0.0	0.0	27.2	22.5	76	270	9	18	1005.7
17/12/2010 12:00	0.0	0.0	26.3	21.7	76	260	10	20	1005.6
17/12/2010 13:00	0.0	0.0	26.7	22.0	75	250	11	18	1004.9
17/12/2010 14:00	0.0	0.2	26.8	21.6	73	260	7	13	1004.2
17/12/2010 15:00	0.0	0.2	27.1	21.3	71	240	10	22	1003.6
17/12/2010 16:00	0.0	0.2	26.1	22.4	80	250	9	14	1003.7
17/12/2010 17:00	0.0	0.2	25.5	21.9	81	250	8	15	1004.7
17/12/2010 18:00	0.0	0.2	24.7	22.3	87	260	6	11	1005.7
17/12/2010 19:00	0.0	0.2	24.3	22.2	88	250	7	12	1006.7
17/12/2010 20:00	0.0	0.2	24.2	22.4	90	250	5	8	1007.5
17/12/2010 21:00	0.0	0.2	24.2	22.7	91	250	6	9	1007.7
17/12/2010 22:00	0.0	0.2	24.1	22.5	91	250	5	9	1007.7
17/12/2010 23:00	0.0	0.2	24.1	22.5	91	260	5	9	1007.4
18/12/2010 00:00	0.0	0.2	24.0	22.7	92	240	4	7	1006.9
18/12/2010 01:00	0.0	0.2	23.8	22.5	92	250	5	9	1006.4
18/12/2010 02:00	0.0	0.2	23.7	22.2	91	250	5	8	1006.0
18/12/2010 03:00	0.0	0.2	23.5	22.3	93	250	5	8	1005.6
18/12/2010 04:00	0.0	0.2	23.5	22.2	92	240	5	9	1005.6
18/12/2010 05:00	0.0	0.2	23.5	22.2	92	250	5	8	1006.0
18/12/2010 06:00	0.0	0.8	23.9	22.3	91	260	5	8	1006.6
18/12/2010 07:00	0.0	0.8	24.7	22.6	88	230	4	6	1007.1
18/12/2010 08:00	0.0	0.8	25.4	22.1	82	240	8	13	1007.1
18/12/2010 09:00	0.0	0.8	26.9	22.3	76	230	8	12	1007.0
18/12/2010 10:00	0.0	0.0	27.3	21.7	72	260	9	14	1006.8
18/12/2010 11:00	0.0	0.0	27.6	21.8	71	260	8	15	1006.5
18/12/2010 12:00	0.0	0.0	26.9	22.3	76	270	7	12	1006.3
18/12/2010 13:00	0.0	0.0	27.2	22.4	75	260	7	13	1005.6
18/12/2010 14:00	0.0	0.0	27.9	22.2	71	250	7	12	1005.4
18/12/2010 15:00	0.0	0.0	27.6	21.7	70	240	8	15	1005.2
18/12/2010 16:00	0.0	0.0	27.0	21.8	73	240	6	13	1005.5
18/12/2010 17:00	0.0	0.0	26.4	21.5	75	240	8	13	1005.8

Date and Time (CXT)	Precipitation in last 10 minutes (mm)	Precipitation since 9am local time (mm)	Air Temperature (°C)	Dew point temperature (°C)	Relative humidity (%)	Wind direction (° True)	Wind speed (knots)	Speed of maximum windgust in last 10 minutes (knots)	Mean sea level pressure (hPa)
18/12/2010 18:00	0.0	0.0	25.0	22.3	85	250	4	7	1007.0
18/12/2010 19:00	0.0	0.6	24.4	22.6	90	230	5	8	1008.0
18/12/2010 20:00	0.0	0.6	23.9	22.6	92	230	5	8	1009.0
18/12/2010 21:00	0.0	0.6	24.0	22.8	93	240	4	6	1009.4
18/12/2010 21:45	2.6	3.2	23.5	22.6	95	260	8	14	1009.8
18/12/2010 22:00	0.0	3.2	23.3	22.7	96	270	5	10	1009.7
18/12/2010 22:29	0.0	3.2	23.0	22.6	98	270	5	7	1009.8
18/12/2010 23:00	0.0	3.2	23.1	22.7	98	240	5	11	1009.7
19/12/2010 00:00	0.0	3.6	23.0	22.4	96	230	4	5	1009.1
19/12/2010 01:00	0.0	3.6	23.2	22.6	96	230	4	5	1008.4
19/12/2010 02:00	0.0	3.6	22.7	22.3	98	250	4	5	1008.3
19/12/2010 03:00	0.0	3.6	22.6	22.0	96	230	4	6	1007.9
19/12/2010 04:00	0.0	3.6	22.4	21.8	96	250	4	5	1008.0
19/12/2010 05:00	0.0	3.6	22.3	21.7	96	240	4	6	1008.0
19/12/2010 06:00	0.0	3.6	22.2	21.6	96	230	3	5	1008.7
19/12/2010 07:00	0.0	3.6	23.6	22.1	91	220	4	7	1009.1
19/12/2010 08:00	0.0	3.6	24.9	22.5	87	220	3	6	1009.4
19/12/2010 09:00	0.2	3.8	26.0	21.8	78	220	7	12	1009.3
19/12/2010 10:00	0.0	0.0	26.6	21.2	72	230	7	10	1009.0
19/12/2010 11:00	0.0	0.0	27.0	20.9	69	220	8	14	1008.4
19/12/2010 12:00	0.0	0.0	27.8	21.1	67	250	5	11	1007.9
19/12/2010 13:00	0.0	0.0	27.6	20.5	65	220	7	11	1007.2
19/12/2010 14:00	0.0	0.0	27.1	20.8	69	230	6	8	1007.0
19/12/2010 15:00	0.0	0.0	26.9	21.1	71	230	6	9	1006.5
19/12/2010 16:00	0.0	0.0	26.3	19.9	68	220	7	10	1006.6
19/12/2010 17:00	0.0	0.0	25.5	21.0	76	220	5	7	1006.9
19/12/2010 18:00	0.0	0.0	24.8	21.5	82	240	2	5	1007.6
19/12/2010 19:00	0.0	0.0	24.0	21.6	86	220	5	8	1008.1
19/12/2010 20:00	0.0	0.0	23.4	21.1	87	220	4	6	1008.5
19/12/2010 21:00	0.0	0.0	22.9	20.9	89	220	1	4	1009.2
19/12/2010 22:00	0.0	0.0	22.6	20.9	90	220	2	5	1009.4

Date and Time (CXT)	Precipitation in last 10 minutes (mm)	Precipitation since 9am local time (mm)	Air Temperature (°C)	Dew point temperature (°C)	Relative humidity (%)	Wind direction (° True)	Wind speed (knots)	Speed of maximum windgust in last 10 minutes (knots)	Mean sea level pressure (hPa)
19/12/2010 23:00	0.0	0.0	22.2	21.0	93	220	4	5	1009.3

Appendix B: Hourly cloud observations from Christmas Island Aerodrome; 10 to 19 December 2010

Date and Time (CXT)	Ceilometer cloud amount (of first group)	Ceilometer cloud height (of first group) in feet	Ceilometer cloud amount(of second group)	Ceilometer cloud height (of second group) in feet	Ceilometer cloud amount (of third group)	Ceilometer cloud height (of third group) in feet
10/12/2010 00:00						
10/12/2010 01:00	BKN	4000				
10/12/2010 02:00	SCT	4200				
10/12/2010 03:00	SCT	4400				
10/12/2010 04:00	SCT	6500				
10/12/2010 05:00	SCT	4800	SCT	6300		
10/12/2010 06:00	BKN	6300				
10/12/2010 07:00	SCT	8800				
10/12/2010 08:00	SCT	7000				
10/12/2010 09:00	SCT	3200	BKN	4300	OVC	5100
10/12/2010 09:45	BKN	200	OVC	3200		
10/12/2010 10:00	SCT	200	BKN	600	OVC	2900
10/12/2010 10:24	SCT	600	BKN	2900	OVC	3900
10/12/2010 11:00	SCT	2000	BKN	4000	OVC	6300
10/12/2010 12:00	SCT	4100	BKN	4800	OVC	5600
10/12/2010 13:00	SCT	3500	BKN	4300	OVC	5100
10/12/2010 14:00	SCT	3300	BKN	4700	OVC	5700
10/12/2010 15:00	SCT	2200	BKN	2900	OVC	3800
10/12/2010 16:00	SCT	2800	BKN	3800	OVC	4700
10/12/2010 17:00	SCT	2400	BKN	6700	OVC	11000
10/12/2010 18:00	SCT	100	SCT	9100	SCT	11500
10/12/2010 19:00						
10/12/2010 20:00	SCT	400				
10/12/2010 21:00	SCT	1600	BKN	10500		
10/12/2010 22:00	SCT	800	SCT	1300		
10/12/2010 22:42	SCT	400	BKN	900	OVC	2800
10/12/2010 23:00	BKN	400	BKN	800	OVC	1200
11/12/2010 00:00	BKN	800	BKN	1200		
11/12/2010 01:00	SCT	800	BKN	1200		
11/12/2010 01:13	SCT	800	SCT	1200		
11/12/2010 02:00	SCT	1200	SCT	11000		
11/12/2010 02:18	BKN	1200				
11/12/2010 03:00	BKN	1000	BKN	1500	OVC	7000

Date and Time (CXT)	Ceilometer cloud amount (of first group)	Ceilometer cloud height (of first group) in feet	Ceilometer cloud amount(of second group)	Ceilometer cloud height (of second group) in feet	Ceilometer cloud amount (of third group)	Ceilometer cloud height (of third group) in feet
11/12/2010 03:11	SCT	1000	BKN	1700	OVC	7000
11/12/2010 03:34	SCT	800	BKN	1300	OVC	3500
11/12/2010 04:00	SCT	600	BKN	1200	OVC	3100
11/12/2010 05:00	SCT	700	BKN	2400	OVC	3500
11/12/2010 06:42	BKN	200	BKN	800	OVC	2200
11/12/2010 06:48	BKN	200	OVC	600		
11/12/2010 07:00	BKN	300	BKN	1000	OVC	1300
11/12/2010 08:00	BKN	300	OVC	900		
11/12/2010 08:26	SCT	400	BKN	2100	OVC	4700
11/12/2010 09:00	SCT	3700	BKN	5400	OVC	8200
11/12/2010 10:00	SCT	600	BKN	4300	OVC	5000
11/12/2010 10:26	SCT	600	BKN	1200	OVC	4400
11/12/2010 11:00						
11/12/2010 11:53	SCT	600	BKN	3700	OVC	5100
11/12/2010 12:00	SCT	600	BKN	3700	OVC	4900
11/12/2010 12:18	SCT	600	BKN	1200	OVC	4900
11/12/2010 12:36	SCT	600	BKN	2100	OVC	2900
11/12/2010 13:00	SCT	2300	BKN	3400	OVC	3800
11/12/2010 14:00	SCT	400	BKN	4400	OVC	5500
11/12/2010 15:00	SCT	300	BKN	2800	OVC	6600
11/12/2010 16:00						
11/12/2010 17:00	SCT	400	BKN	900	OVC	3200
11/12/2010 18:00	OVC	500				
11/12/2010 19:00	SCT	600	BKN	1300	OVC	2800
11/12/2010 19:12	SCT	300	BKN	2800	OVC	3800
11/12/2010 20:00	BKN	6300	OVC	7600		
11/12/2010 21:00	BKN	2100	BKN	2500	OVC	7500
11/12/2010 22:00	BKN	3100	OVC	11500		
11/12/2010 23:00	SCT	100	SCT	3500		
11/12/2010 23:10	BKN	200				
12/12/2010 00:00	BKN	300	OVC	6300		
12/12/2010 01:00	SCT	200	BKN	900	OVC	7100
12/12/2010 02:00	SCT	600	BKN	1100	OVC	7700
12/12/2010 03:00	SCT	800	BKN	1300	BKN	10000
12/12/2010 04:00	SCT	800	BKN	1200	OVC	12000

Date and Time (CXT)	Ceilometer cloud amount (of first group)	Ceilometer cloud height (of first group) in feet	Ceilometer cloud amount(of second group)	Ceilometer cloud height (of second group) in feet	Ceilometer cloud amount (of third group)	Ceilometer cloud height (of third group) in feet
12/12/2010 05:00	SCT	400	BKN	800	OVC	11500
12/12/2010 06:00	SCT	500	BKN	900	BKN	1400
12/12/2010 07:00	BKN	900	BKN	1500	BKN	2300
12/12/2010 08:00	BKN	300	BKN	800	OVC	1300
12/12/2010 09:00	BKN	400	OVC	800		
12/12/2010 10:00	BKN	400	BKN	900	OVC	1200
12/12/2010 11:00	SCT	800	BKN	1100		
12/12/2010 12:00	SCT	800	SCT	1200	BKN	3400
12/12/2010 12:52	SCT	500	BKN	1500	OVC	4300
12/12/2010 12:54	BKN	500	BKN	1500	OVC	4300
12/12/2010 13:00	SCT	200	BKN	600	OVC	4700
12/12/2010 13:34	SCT	600	BKN	1800	OVC	3900
12/12/2010 13:39	BKN	600	BKN	1800	OVC	3600
12/12/2010 14:00	BKN	200	OVC	1000		
12/12/2010 15:00	SCT	400	BKN	700	OVC	1400
12/12/2010 16:00	SCT	400	BKN	800		
12/12/2010 16:14	SCT	500				
12/12/2010 16:35	SCT	400	SCT	900	BKN	1200
12/12/2010 17:00	BKN	500	BKN	800		
12/12/2010 18:00	BKN	400	OVC	1000		
12/12/2010 19:00	BKN	300	OVC	900		
12/12/2010 20:00	BKN	400	BKN	2500	OVC	4500
12/12/2010 21:00	BKN	500	OVC	800		
12/12/2010 22:00	SCT	600	BKN	1000	BKN	1500
12/12/2010 23:00	SCT	400	BKN	900	OVC	1400
12/12/2010 23:52	SCT	900				
13/12/2010 00:00	SCT	900				
13/12/2010 00:16	SCT	900	BKN	1300		
13/12/2010 01:00	BKN	1000	BKN	1500	OVC	2100
13/12/2010 02:00	BKN	1200	BKN	1600	OVC	3400
13/12/2010 02:32	SCT	1200	BKN	2200	OVC	3300
13/12/2010 02:45	BKN	1200	BKN	2500	BKN	3200
13/12/2010 02:55	SCT	1200	SCT	1700	BKN	2500
13/12/2010 03:00	SCT	1400				
13/12/2010 04:00	SCT	1400	SCT	2000		

Date and Time (CXT)	Ceilometer cloud amount (of first group)	Ceilometer cloud height (of first group) in feet	Ceilometer cloud amount(of second group)	Ceilometer cloud height (of second group) in feet	Ceilometer cloud amount (of third group)	Ceilometer cloud height (of third group) in feet
13/12/2010 04:20	BKN	1200	BKN	2000		
13/12/2010 05:00	SCT	1200	SCT	2300		
13/12/2010 05:03	SCT	1200	BKN	2300		
13/12/2010 05:05	BKN	1200	BKN	2000		
13/12/2010 05:48	SCT	900	SCT	1400	BKN	2400
13/12/2010 06:00	SCT	1400	BKN	2400	BKN	2900
13/12/2010 06:10	BKN	1200	BKN	2400		
13/12/2010 07:00	SCT	700	BKN	1200	OVC	2600
13/12/2010 07:50	BKN	1100	BKN	1700		
13/12/2010 08:00	BKN	1300	BKN	1900		
13/12/2010 08:18	BKN	1500	BKN	1900		
13/12/2010 08:49	BKN	1300	BKN	1800		
13/12/2010 09:00	BKN	1500				
13/12/2010 09:05	BKN	1500				
13/12/2010 10:00	SCT	1500				
13/12/2010 10:23	SCT	600	BKN	1300	BKN	2000
13/12/2010 11:00	BKN	1000	OVC	1500		
13/12/2010 11:26	SCT	1400	BKN	1800	BKN	2500
13/12/2010 12:00	BKN	1400	BKN	1800	BKN	2300
13/12/2010 12:05	BKN	1200	BKN	1800	OVC	2300
13/12/2010 12:29	OVC	1400				
13/12/2010 13:00	BKN	1400	BKN	2100	BKN	2900
13/12/2010 14:00	SCT	1900	SCT	2400		
13/12/2010 15:00	SCT	800	BKN	1600	OVC	2600
13/12/2010 15:12	SCT	400	BKN	1000	OVC	2400
13/12/2010 16:00	BKN	600	BKN	1000	OVC	3100
13/12/2010 16:39	BKN	1400	OVC	1800		
13/12/2010 17:00	BKN	1400	OVC	2000		
13/12/2010 18:00	BKN	1600	BKN	2100		
13/12/2010 19:00	SCT	1400	SCT	2000		
13/12/2010 19:46	BKN	1200	BKN	2100	OVC	6500
13/12/2010 20:00	SCT	1200	BKN	2100	OVC	4700
13/12/2010 20:27	SCT	900	BKN	2100	OVC	6900
13/12/2010 21:00	SCT	2400	SCT	3900	BKN	5800
13/12/2010 22:00	SCT	1400	SCT	5000	SCT	10000

Date and Time (CXT)	Ceilometer cloud amount (of first group)	Ceilometer cloud height (of first group) in feet	Ceilometer cloud amount(of second group)	Ceilometer cloud height (of second group) in feet	Ceilometer cloud amount (of third group)	Ceilometer cloud height (of third group) in feet
13/12/2010 22:53	SCT	800	BKN	1300		
13/12/2010 23:00	SCT	800	SCT	1300		
13/12/2010 23:03	SCT	800	SCT	1300		
13/12/2010 23:28	SCT	700	BKN	1100	BKN	1600
13/12/2010 23:58	SCT	300	SCT	700	BKN	1400
14/12/2010 00:00	SCT	500	BKN	1400	BKN	2000
14/12/2010 00:03	SCT	300	BKN	1200	BKN	1800
14/12/2010 01:00	BKN	600	BKN	1300	OVC	5300
14/12/2010 01:07	BKN	500	OVC	1500		
14/12/2010 02:00	BKN	400	BKN	900	OVC	1100
14/12/2010 03:00	SCT	300	BKN	600	OVC	1100
14/12/2010 03:42	SCT	1300	BKN	1700		
14/12/2010 03:47	BKN	1300	BKN	1900		
14/12/2010 04:00	SCT	1100	BKN	1600	OVC	2100
14/12/2010 04:56	SCT	1300	BKN	1700	OVC	2500
14/12/2010 05:00	SCT	1000	BKN	1700	OVC	2500
14/12/2010 05:41	BKN	1200	BKN	1800	OVC	2200
14/12/2010 06:00	BKN	1200	BKN	1700	OVC	2100
14/12/2010 07:00	SCT	600	BKN	1000	OVC	1600
14/12/2010 08:00	SCT	500	BKN	1200	OVC	1600
14/12/2010 08:28	BKN	1500	OVC	1900		
14/12/2010 08:29	BKN	1300	OVC	1900		
14/12/2010 09:00	BKN	1300	OVC	1900		
14/12/2010 10:00	BKN	1000	BKN	1300	OVC	2000
14/12/2010 10:23	SCT	1100	BKN	1600	OVC	4200
14/12/2010 10:24	BKN	1300	OVC	4200		
14/12/2010 10:37	SCT	600	BKN	1500	OVC	2200
14/12/2010 10:53	SCT	600	BKN	1000	OVC	1500
14/12/2010 11:00	SCT	500	BKN	1000	OVC	1500
14/12/2010 12:00	BKN	800	OVC	1200		
14/12/2010 13:00	BKN	1200	BKN	1700		
14/12/2010 13:28	BKN	1200	BKN	1600	OVC	2000
14/12/2010 14:00	SCT	900	BKN	3600	OVC	5700
14/12/2010 14:05	SCT	1100	BKN	3400	OVC	4900
14/12/2010 14:27	BKN	1100	BKN	1900	OVC	3800

Date and Time (CXT)	Ceilometer cloud amount (of first group)	Ceilometer cloud height (of first group) in feet	Ceilometer cloud amount(of second group)	Ceilometer cloud height (of second group) in feet	Ceilometer cloud amount (of third group)	Ceilometer cloud height (of third group) in feet
14/12/2010 15:00	SCT	500	BKN	1000	OVC	1900
14/12/2010 15:43	SCT	700	SCT	1100	BKN	2000
14/12/2010 15:45	BKN	900	BKN	2000		
14/12/2010 16:00	BKN	1100	BKN	1900	BKN	2400
14/12/2010 17:00	SCT	900	BKN	1500	OVC	2100
14/12/2010 17:27	BKN	1500	OVC	1800		
14/12/2010 17:30	BKN	1300	OVC	1700		
14/12/2010 17:42	BKN	1500	OVC	2200		
14/12/2010 17:47	BKN	1200	BKN	1700	OVC	2200
14/12/2010 18:00	BKN	1000	BKN	1500	OVC	1900
14/12/2010 19:00	BKN	400	OVC	1000		
14/12/2010 19:57	SCT	800	OVC	1400		
14/12/2010 20:00	SCT	800	OVC	1400		
14/12/2010 20:39	SCT	300	SCT	600	OVC	1200
14/12/2010 21:00	BKN	300	BKN	900	OVC	2500
14/12/2010 22:00	BKN	500	OVC	800		
14/12/2010 23:00	BKN	600	OVC	1100		
15/12/2010 00:00	BKN	200	BKN	600	OVC	1000
15/12/2010 01:00	BKN	400	BKN	900	OVC	2000
15/12/2010 02:00	SCT	300	BKN	600	BKN	1100
15/12/2010 03:00	OVC	300				
15/12/2010 04:00	SCT	200	BKN	800	OVC	5400
15/12/2010 04:57	SCT	400	BKN	1300	BKN	2000
15/12/2010 05:00	SCT	400	BKN	1300	BKN	1800
15/12/2010 06:00	BKN	400	BKN	1300	OVC	4300
15/12/2010 07:00	OVC	500				
15/12/2010 08:00	BKN	200	BKN	800	OVC	1100
15/12/2010 09:00	BKN	200	OVC	600		
15/12/2010 10:00	BKN	200	OVC	700		
15/12/2010 11:00	BKN	200	OVC	600		
15/12/2010 12:00	BKN	200	OVC	600		
15/12/2010 13:00	BKN	200	BKN	600	OVC	900
15/12/2010 14:00	BKN	300	OVC	700		
15/12/2010 15:00	BKN	400	OVC	1200		
15/12/2010 16:00	BKN	400	BKN	900	BKN	1100

Date and Time (CXT)	Ceilometer cloud amount (of first group)	Ceilometer cloud height (of first group) in feet	Ceilometer cloud amount(of second group)	Ceilometer cloud height (of second group) in feet	Ceilometer cloud amount (of third group)	Ceilometer cloud height (of third group) in feet
15/12/2010 16:52	SCT	400	BKN	700	OVC	1700
15/12/2010 17:00	BKN	300	BKN	700	OVC	1500
15/12/2010 18:00	BKN	600	BKN	900		
15/12/2010 18:53	SCT	600	SCT	1200		
15/12/2010 19:00	SCT	1200				
15/12/2010 19:23	SCT	800	BKN	1200	BKN	1600
15/12/2010 20:00	SCT	800	BKN	1200	BKN	1800
15/12/2010 20:20	SCT	800	SCT	1600	BKN	3200
15/12/2010 21:00						
15/12/2010 21:23	SCT	800	BKN	1200		
15/12/2010 21:34	SCT	1200				
15/12/2010 22:00	SCT	900	SCT	1400	SCT	2200
15/12/2010 23:00	SCT	1600				
16/12/2010 00:00	SCT	4800				
16/12/2010 01:00	SCT	1500				
16/12/2010 02:00	SCT	900	BKN	1700	BKN	2300
16/12/2010 03:00	SCT	5200	SCT	7000	SCT	11000
16/12/2010 03:22	BKN	200	BKN	1500	BKN	11000
16/12/2010 04:00	BKN	100	OVC	400		
16/12/2010 05:00	SCT	600	BKN	1200	BKN	2500
16/12/2010 05:27	SCT	1000	BKN	4200	OVC	5300
16/12/2010 06:00	SCT	1900	BKN	4400	OVC	11500
16/12/2010 06:28	BKN	1200	BKN	2800	BKN	9600
16/12/2010 06:47	SCT	900	BKN	2600	OVC	4900
16/12/2010 07:00	SCT	1600	BKN	3700	OVC	4900
16/12/2010 08:00						
16/12/2010 09:00						
16/12/2010 10:00	SCT	1500	SCT	4500	BKN	5400
16/12/2010 11:00	SCT	1800	BKN	2500	BKN	3500
16/12/2010 12:00	SCT	1400	SCT	2000	BKN	2300
16/12/2010 13:00	SCT	1600	BKN	2900	BKN	4400
16/12/2010 14:00	SCT	2500	SCT	4100	OVC	10500
16/12/2010 14:38	BKN	1300	BKN	1900	OVC	11000
16/12/2010 14:53	BKN	1400	BKN	2000	OVC	11500
16/12/2010 14:54	BKN	1200	BKN	2000	OVC	11500

Date and Time (CXT)	Ceilometer cloud amount (of first group)	Ceilometer cloud height (of first group) in feet	Ceilometer cloud amount(of second group)	Ceilometer cloud height (of second group) in feet	Ceilometer cloud amount (of third group)	Ceilometer cloud height (of third group) in feet
16/12/2010 15:00	SCT	1200	BKN	1600	OVC	11500
16/12/2010 15:07	SCT	900	BKN	1400	OVC	11500
16/12/2010 15:29	SCT	700	BKN	1100	OVC	11500
16/12/2010 16:00	BKN	700	BKN	1200		
16/12/2010 17:00	SCT	600	BKN	1100	BKN	1700
16/12/2010 17:12	SCT	800	BKN	1700	OVC	12000
16/12/2010 18:00	SCT	1500	BKN	12000		
16/12/2010 18:15	BKN	1300	BKN	1800	BKN	3100
16/12/2010 18:36	BKN	1100	BKN	1800	OVC	3300
16/12/2010 18:53	SCT	1200	SCT	1900	BKN	3400
16/12/2010 19:00	SCT	900	SCT	1500	BKN	2300
16/12/2010 20:00	BKN	1700				
16/12/2010 21:00	BKN	1900	BKN	2300		
16/12/2010 21:14	BKN	1300	BKN	1900	BKN	3200
16/12/2010 21:33	SCT	1300	BKN	2000	BKN	3100
16/12/2010 21:58	SCT	800	BKN	1300	BKN	3800
16/12/2010 22:00	SCT	800	BKN	1400	BKN	4000
16/12/2010 22:09	SCT	800	BKN	1400	OVC	5000
16/12/2010 22:13	SCT	800	BKN	1300	OVC	5000
16/12/2010 23:00	BKN	400	BKN	1300	OVC	3500
17/12/2010 00:00	BKN	400	BKN	1600	OVC	3000
17/12/2010 01:00	OVC	200				
17/12/2010 02:00	SCT	500	BKN	1000	OVC	1800
17/12/2010 02:33	SCT	600	SCT	1300		
17/12/2010 02:43	BKN	1100				
17/12/2010 03:00	SCT	800	BKN	1100		
17/12/2010 03:21	SCT	800	SCT	1100		
17/12/2010 04:00	SCT	1600	SCT	2100	BKN	2800
17/12/2010 05:00	SCT	2300	SCT	3400	BKN	4700
17/12/2010 06:00	SCT	1500	SCT	2200	BKN	4500
17/12/2010 07:00						
17/12/2010 08:00	SCT	4100				
17/12/2010 09:00	SCT	1700	SCT	4500	BKN	5400
17/12/2010 10:00	SCT	1700	BKN	2500	OVC	5400
17/12/2010 11:00	SCT	1900	SCT	2500	BKN	3300

Date and Time (CXT)	Ceilometer cloud amount (of first group)	Ceilometer cloud height (of first group) in feet	Ceilometer cloud amount(of second group)	Ceilometer cloud height (of second group) in feet	Ceilometer cloud amount (of third group)	Ceilometer cloud height (of third group) in feet
17/12/2010 12:00	SCT	1900	BKN	2600	OVC	3300
17/12/2010 13:00	SCT	2300	SCT	2700	BKN	4800
17/12/2010 14:00	SCT	2600				
17/12/2010 15:00						
17/12/2010 16:00						
17/12/2010 17:00	SCT	1900				
17/12/2010 18:00						
17/12/2010 19:00	SCT	2700				
17/12/2010 20:00						
17/12/2010 21:00						
17/12/2010 22:00						
17/12/2010 23:00						
18/12/2010 00:00	SCT	1600	SCT	2300	BKN	4400
18/12/2010 01:00						
18/12/2010 02:00						
18/12/2010 03:00						
18/12/2010 04:00						
18/12/2010 05:00						
18/12/2010 06:00	SCT	1500				
18/12/2010 07:00						
18/12/2010 08:00	SCT	1600	SCT	2700		
18/12/2010 09:00	SCT	1800	SCT	2300	BKN	3100
18/12/2010 10:00	SCT	2100	SCT	2700		
18/12/2010 11:00	SCT	2100	BKN	2700	BKN	3200
18/12/2010 12:00	SCT	1800	BKN	2100	BKN	2700
18/12/2010 13:00	SCT	2000	BKN	2700	BKN	3100
18/12/2010 14:00	SCT	2200	SCT	2700	BKN	3500
18/12/2010 15:00	BKN	2000	BKN	2600		
18/12/2010 16:00	SCT	2000	SCT	2900		
18/12/2010 17:00						
18/12/2010 18:00						
18/12/2010 19:00	SCT	5300				
18/12/2010 20:00						
18/12/2010 21:00	SCT	2900	BKN	3400		
18/12/2010 21:45	SCT	400	BKN	1200	OVC	4000

Date and Time (CXT)	Ceilometer cloud amount (of first group)	Ceilometer cloud height (of first group) in feet	Ceilometer cloud amount(of second group)	Ceilometer cloud height (of second group) in feet	Ceilometer cloud amount (of third group)	Ceilometer cloud height (of third group) in feet
18/12/2010 22:00	BKN	300	BKN	800	OVC	1300
18/12/2010 22:29	SCT	200	BKN	6800		
18/12/2010 23:00	SCT	900	SCT	1900	OVC	7200
19/12/2010 00:00	OVC	5300				
19/12/2010 01:00	SCT	3600	OVC	7100		
19/12/2010 02:00	BKN	5400				
19/12/2010 03:00	SCT	1500	BKN	4000	BKN	7100
19/12/2010 04:00	SCT	1900	SCT	2500	SCT	4500
19/12/2010 05:00	SCT	1900	SCT	3300		
19/12/2010 06:00						
19/12/2010 07:00						
19/12/2010 08:00	SCT	1500	BKN	4100	OVC	5600
19/12/2010 09:00	SCT	1400	SCT	2200	SCT	3000
19/12/2010 10:00	SCT	1900	SCT	2900		
19/12/2010 11:00	SCT	2300				
19/12/2010 12:00	SCT	2500	SCT	3300	SCT	6900
19/12/2010 13:00	BKN	3100	BKN	5200		
19/12/2010 14:00	SCT	2800	BKN	3600	OVC	7600
19/12/2010 15:00	SCT	2500	SCT	3100	BKN	5700
19/12/2010 16:00	SCT	2400	SCT	6200		
19/12/2010 17:00	OVC	6200				
19/12/2010 18:00	OVC	6200				
19/12/2010 19:00	SCT	4300	BKN	6600		
19/12/2010 20:00						
19/12/2010 21:00						
19/12/2010 22:00						
19/12/2010 23:00						

Appendix C: Explanation of observation parameters

1. Observation **Date** and **Time** are expressed in Christmas Island Time (CXT) which is Coordinated Universal Time plus 7 hours. **Date** format is in day/month/year, whilst **Time** is based on a 24-hour clock.

2. **Precipitation** is is recorded in 0.2mm increments.

3. **Air Temperature** is expressed as degrees Celsius (ºC). The value is the instantaneous reading at the observation time.

4. **Dew Point Temperature** is expressed as degrees Celsius (ºC). The value is calculated from instantaneous readings of air temperature and wet-bulb temperature. The dew point is the temperature to which the air must be cooled, without change in pressure and water vapour content, in order for condensation of water vapour to occur.

5. **Relative Humidity** is expressed as a percentage (%). The value is calculated using the instantaneous air temperature reading and the calculated instantaneous dew point temperature.

6. **Wind Direction** is expressed as degrees clockwise from True North. For example 090 is equivalent to a wind coming from the East. The wind direction value is generally the average direction over the ten minutes preceding the observation time. * See note below.

7. **Wind Speed** is expressed in knots. The wind speed value is generally the average wind speed over the 10 minutes preceding the observation time. * See note below.

*Note: If a significant wind change occurs during the ten-minute period prior to an observation, the wind direction and speed are averaged over the period since the change, thus means over periods of less than ten minutes can be reported.

8. **Wind Gust** is expressed it knots. The wind gust value is defined as the greatest three second mean wind speed measured in the ten minutes preceding the observation time.

9. **MSLP** is the Mean Sea Level Pressure, corrected from the instantaneous station level pressure and expressed in hectopascals (hPa).

10. **Cloud data** is from a ceilometer, which is an instrument that uses a vertical laser beam to estimate cloud amounts and heights. The instrument only samples the sky directly above it and so care should be taken when using these values for estimates of whole sky amounts. The ceilometer reports heights to 12,500 feet with amounts broken into the following subgroups; SCT: scattered (3-4 octas); BKN: broken (5-7 octas); OVC: overcast (8 octas). The first cloud group is the lowest level of cloud detected with an amount of SCT or more; the second cloud group is the second lowest level of cloud detected with an amount of SCT or more; the third cloud group is the third lowest level of cloud detected with an amount of SCT or more. Cloud heights are measured in feet above above ground level. 1m = 3.28 feet.

At times a weather report is sent outside of the normal half hourly reporting times. This 'special' weather report is sent when certain criteria, relevant to aviation requirements, are exceeded.

Appendix D: Ship observations within approximately 300 nm of Christmas Island; 10 to 19 December 2010

Call Sign	Date and Time (CXT)	Latitude	Longitude	Air temperature (°C)	Dew point temperature (°C)	Wind direction in degrees	Wind speed in knots	Visibility (km)	Present weather in code	Past weather in code	Pressure(hPa)
A8JY5	10/12/2010 13:00	-6.0	106.9	29.0	24.8	230	16	20	2	22	1008.0
9VBM6	11/12/2010 16:00	-5.8	106.0	28.0	23.9	210	15		2	51	1005.0
9VBM6	12/12/2010 07:00	-5.8	103.1	28.0	23.9	300	20		3	22	1007.0
9VBM6	12/12/2010 12:00	-5.7	102.4	29.0	24.9	300	27	10	81	66	1007.0
9VBM6	12/12/2010 16:00	-5.5	101.6	30.0	24.6	300	22	10	81	61	1005.0
A8UG5	13/12/2010 21:00	-14.3	106.5	25.5	24.1	160	15	20	3	11	1003.0
PHAM	14/12/2010 07:00	-5.6	109.0	28.2	24.0	340	15	20	2	82	1007.1
A8RV9	16/12/2010 01:00	-8.3	101.6	26.0	21.8	270	14	10	3	22	1005.0
VRDU8	16/12/2010 01:00	-12.2	106.8	28.0	23.7	260	20	10	2	22	1001.6
VRDU8	16/12/2010 07:00	-10.4	106.2	28.0	22.9	230	26	10	63	66	1005.0
A8RV9	16/12/2010 13:00	-6.5	105.0	27.0	23.3	310	23	10	3	22	1006.0
DGKV	16/12/2010 13:00	-5.5	107.0	28.8	23.7	300	17	20	3	22	1005.5
VRDU8	16/12/2010 13:00	-8.9	105.6	28.0	25.2	270	17	10	21	62	1003.6
VRFN8	16/12/2010 13:00	-13.1	107.3	29.0	23.2	240	14	10		22	1001.6
VRFN8	16/12/2010 19:00	-14.8	107.9	27.4	24.8	230	14	10	3	0	1001.1
DDSE2	18/12/2010 19:00	-11.6	106.8	29.0	22.8	250	12	20	2	11	1007.0
A8GU8	19/12/2010 07:00	-14.1	106.1	27.0	19.0	230	16	10	1	11	1008.0
A8GU8	19/12/2010 13:00	-11.9	105.6	29.0	22.0	240	12	20	2	0	1007.2

Table 2: Weather observations from ships within 300 nm of Christmas Island. Note that past weather code '22' (snow) is likely to be incorrect.

Call Sign	Date and Time (CXT)	Latitude	Longitude	Total Cloud Amount (octas)	Total Low and Middle Cloud Amount (octas)	Cloud Base Height ID	Low Cloud ID	Middle Cloud ID	High Cloud ID
A8JY5	10/12/2010 13:00	-6.0	106.9	6	5	3	6	7	8
9VBM6	11/12/2010 16:00	-5.8	106.0	8	7	8	7	4	7
9VBM6	12/12/2010 07:00	-5.8	103.1	6	6	5	4	4	2
9VBM6	12/12/2010 12:00	-5.7	102.4	8	7	6	7	4	
9VBM6	12/12/2010 16:00	-5.5	101.6	8	6	6	7	7	7
A8UG5	13/12/2010 21:00	-14.3	106.5	5	4	2	7	7	
PHAM	14/12/2010 07:00	-5.6	109.0	7	4	6	3	6	2
A8RV9	16/12/2010 01:00	-8.3	101.6	4	3	3	7	7	8
VRDU8	16/12/2010 01:00	-12.2	106.8						
VRDU8	16/12/2010 07:00	-10.4	106.2	8			7		
A8RV9	16/12/2010 13:00	-6.5	105.0	6	5	3	7	7	6
DGKV	16/12/2010 13:00	-5.5	107.0	6	2	5	2	3	8
VRDU8	16/12/2010 13:00	-8.9	105.6	7	7	3	7		
VRFN8	16/12/2010 13:00	-13.1	107.3	7		3	7	1	7
VRFN8	16/12/2010 19:00	-14.8	107.9	8	6	2	7	0	0
DDSE2	18/12/2010 19:00	-11.6	106.8	4					
A8GU8	19/12/2010 07:00	-14.1	106.1	3	3	6	1	4	5
A8GU8	19/12/2010 13:00	-11.9	105.6	3		5	1	4	5

Table 3: Cloud observations from ships within 300 nm of Christmas Island.

Call Sign	Date and Time (CXT)	Latitude	Longitude	Wave Height (m)	Wave Period (seconds)	Swell 1 Direction (degrees)	Swell 1 Height (m)	Swell 1 Period (seconds)	Swell 2 Direction (degrees)	Swell 2 Height (m)	Swell 2 Period (seconds)
A8JY5	10/12/2010 13:00	-6.0	106.9	0.5	3	230	1.0	4			
9VBM6	11/12/2010 16:00	-5.8	106.0								
9VBM6	12/12/2010 07:00	-5.8	103.1								
9VBM6	12/12/2010 12:00	-5.7	102.4	2.0	6	90	2.0	5			
9VBM6	12/12/2010 16:00	-5.5	101.6	2.0	8	170	2.0	10	150	1.5	7
A8UG5	13/12/2010 21:00	-14.3	106.5	1.0	1	140	1.0	3			
PHAM	14/12/2010 07:00	-5.6	109.0	0.5	1	0					
A8RV9	16/12/2010 01:00	-8.3	101.6	2.0	6	250	2.0	5			
VRDU8	16/12/2010 01:00	-12.2	106.8	1.0	3						
VRDU8	16/12/2010 07:00	-10.4	106.2	2.0	5						
A8RV9	16/12/2010 13:00	-6.5	105.0	2.5	6	290	3.0	6			
DGKV	16/12/2010 13:00	-5.5	107.0	1.5	2						
VRDU8	16/12/2010 13:00	-8.9	105.6	1.5	3	130	2.0	3			
VRFN8	16/12/2010 13:00	-13.1	107.3	3.0	6						
VRFN8	16/12/2010 19:00	-14.8	107.9	2.5	11						
DDSE2	18/12/2010 19:00	-11.6	106.8	1.0	8	210	2.0	14			
A8GU8	19/12/2010 07:00	-14.1	106.1	2.5	3	180	3.5	4			
A8GU8	19/12/2010 13:00	-11.9	105.6	0.5	5	180	1.5	10			

Table 4: Sea and swell data from ships within 300 nm of Christmas Island

Appendix E: Explanation of ship observation terms

1. **Callsign** is the ships identifier.
2. Observation **Date** and **Time** are expressed in Christmas Island Time (CXT) which is Coordinated Universal Time plus 7 hours. **Date** format is in day/month/year, whilst **Time** is based on a 24-hour clock.
3. **Latitude** is expressed as degree (-90 to +90). Negative is for southern hemisphere.
4. **Longitude** is expressed as degree E (0-360).
5. **Air Temperature** is expressed as degrees Celsius (ºC). The value is the instantaneous reading at the observation time.
6. **Dew Point Temperature** is expressed as degrees Celsius (ºC). The value is calculated from instantaneous readings of air temperature and wet-bulb temperature. The dew point is the temperature to which the air must be cooled, without change in pressure and water vapour content, in order for condensation of water vapour to occur.
7. **Wind Direction** is expressed as degrees clockwise from True North. For example 090 is equivalent to a wind coming from the East. The wind direction value is generally the average direction over the ten minutes preceding the observation time.
8. **Wind Speed** is expressed in knots. The wind speed value is generally the average wind speed over the 10 minutes preceding the observation time.
9. **MSLP** is the isntantaneaous Mean Sea Level Pressure expressed in hectopascals (hPa).
10. **Wave Height** and **Wave Period** refer to locally generated waves (seas). **Wave Height** (in metres) is the distance between the trough and crest of the wave; while **Wave Period** (in seconds) is the time between consecutive troughs or crests.
11. **Swell Height** and **Swell Period** refer to waves not generated locally and are usually more formed and have longer period. **Swell Height** (in metres) is the distance between the trough and crest of the wave; while **Swell Period** (in seconds) is the time between consecutive troughs or crests.
12. **Past** and **Present Weather** codes are included in Table 5.
13. **Cloud data** is manually estimated, with the sky divided into 8 sections (octas). **Cloud Base Height** codes are included in Table 6. **Low**, **Middle** and **High Cloud** codes and information is included in Table 7.

Code	Description
At the time of observation (Thunder is heard).	
99	Heavy Thunderstorm with hail
98	Thunderstorm with dust or sand storm
97	Heavy thunderstorm with rain/snow
96	Slight or moderate thunderstorm with hail
95	Slight or moderate thunderstorm with rain / snow
17	Thunderstorm without precipitation
Thunderstorm in the past hour with (Thunder was heard).	
94	Moderate or heavy snow or hail at the time of observation
93	Slight snow or hail at the time of observation
92	Moderate or heavy rain at the time of observation
91	Slight rain at the time of observation
Showers at the time of observation.	
90	Moderate or heavy hail shower
89	Slight Hail shower
88	Moderate or heavy soft hail shower
87	Slight soft hail shower
86	Moderate or heavy snow shower
85	Slight snow shower
84	Moderate or heavy rain and snow shower
83	Slight snow shower
82	Violent rain shower
81	Moderate or heavy rain shower
80	Slight rain shower
Frozen Precipitation (not showers) at the time of observation.	
79	Ice Pellets
78	Isolated starlike crystals
77	Snow grains
76	Ice Prisms
75	Heavy continuous snow
74	Heavy intermittent snow
73	Moderate continuous snow
72	Moderate intermittent snow
71	Slight continuous snow
70	Slight intermittent snow
Rain / Drizzle at the time of observation (not showers).	
Rain	
69	Moderate or heavy rain or drizzle with snow
68	Slight rain or drizzle with snow
67	Freezing moderate or heavy rain
66	Freezing slight rain
65	Heavy continuous rain
64	Heavy intermittent rain
63	Moderate continuous rain
62	Moderate intermittent rain
61	Slight continuous rain
60	Slight intermittent rain
Drizzle	
59	Moderate or heavy drizzle with rain
58	Slight drizzle with rain
57	Freezing, moderate or heavy drizzle
56	Freezing, slight drizzle

55	Heavy, continuous drizzle
54	Heavy, intermittent drizzle
53	Moderate, continuous drizzle
Code	**Description**
Drizzle	
52	Moderate, intermittent drizzle.
51	Slight continuous drizzle
50	Slight intermittent drizzle
Fog at the time of observation, sky invisible, Visibility less than 1000 metres.	
49	Depositing rime
47	Has begun or become thicker during the past hour
45	No appreciable change during the past hour
43	Become thinner during the past hour
Fog at the time of observation, sky visible, Visibility reported less than 1000 metres.	
48	Depositing rime
46	Has begun or become thicker during the past hour
44	No appreciable change during the past hour
42	Become thinner during the past hour
Fog at the time of observation, sky visible, Visibility reported greater than 1000 metres.	
41	In patches. (Visibility less than 1000 metres in patches)
40	Fog at a distance, but no fog at the station during the past hour
Blowing snow.	
39	Thick above eye level
38	Slight or moderate above eye level
Drifting snow.	
37	Thick below eye level
36	Slight or moderate below eye level
Severe sand or duststorm, visibility less than 200 metres.	
35	Begun or increased during the past hour
34	No appreciable change during the past hour
33	Decreased during the past hour
Slight or moderate sand or duststorm. Visibility less than 1000 metres but not less than 200 metres.	
32	Begun or increased during the past hour
31	No appreciable change during the past hour
30	Decreased during the past hour
At the station within the past hour but not at the time of observation.	
29	Thunderstorm, thunder is heard
28	Fog (visibility < 1000 m)
27	Shower of hail
26	Shower of snow
25	Shower of rain
24	Freezing Drizzle or rain
23	Rain or snow
22	Snow
21	Rain or Drizzle
20	Drizzle
19	Funnel Cloud - during past hour or at time of observation
18	Squall - during past hour or at time of observation
16	Precipitation reaching the ground but not at the station: estimated < 5km away
15	Precipitation reaching the ground but not at the station: estimated > 5km away
14	Precipitation not reaching the ground - near or at a distance
13	Lightning seen - no thunder is heard
12	Shallow fog (below 2m) - generally continuous
11	Shallow fog (below 2m) - in patches

10	Mist - visibility between 1000 metres and 10 km (Note: relative humidity 90% or more).
09	Distant or past duststorm or sandstorm. Distant at the time of observation or at the station during the past hour.
08	Well developed dust whirls at or near the station at time of observation or during past hour.
07	Raised dust or sand at the time of observation. No well developed whirls and no duststorm or sandstorm seen.
Code	**Description**
06	Widespread dust in suspension Not raised at or near the station at the time of observation.
At the station within the past hour but not at the time of observation.	
05	Haze - very small dry particles. (Note: relative humidity below 90%).
04	Smoke - originating from bush or industrial fires.
State of Cloud development, if any, during the past hour.	
03	Generally forming or developing.
02	On the whole unchanged or cloudless.
01	Generally dissolving or becoming less developed.
00	Not observed or not observable.

Table 5: Past and present weather codes available for ship reporting.

Code	Height (ft)	Height (m)
0	0 to 150	0 to 50
1	150 to 300	50 to 100
2	300 to 600	100 to 200
3	600 to 1,000	200 to 300
4	1,000 to 2,000	300 to 600
5	2,000 to 3,000	600 to 1,000
6	3,000 to 5,000	1,000 to 1,500
7	5,000 to 6,500	1,500 to 2,000
8	6,500 to 8,000	2,000 to 2,500
9	8,000 or more or no cloud	2,500 or more or no cloud

Table 6: Cloud base height codes

	Cloud ID	Cloud Type Name	Description
Low Cloud	0	-	No low cloud types
	1	Cumulus (Cu)	Fine weather Cu, little vertical development
	2	Cumulus (Cu)	Large Cu, flat bases
	3	Cumulonimbus (Cb)	Cb without anvil or fibrous cirriform top.
	4	Stratocumulus (Sc)	Sc formed form the spreading out of Cu, Cu often present.
	5	Stratocumulus (Sc)	Sc not formed by the spreading out of Cu.
	6	Stratus (St)	Stratus or fractostratus (Fs), or both, but not Fs of bad weather.
	7	Stratus (St)	Fs or Fc (fractocumulus) of bad weather (scud) (see note 1)
	8	Stratocumulus (Sc)	Cu and Sc, other than those formed by spreading out Cu, bases at different levels
	9	Cumulonimbus (Cb)	Cb with fibrous cirriform top, often anvil shaped.
Middle Cloud	0	-	No middle cloud types
	1	Altostratus (As)	Thin As, semi transparent (no halo)
	2	Altostratus (As) or Nimbostratus (Ns)	Thick As or Ns, sun or moon invisible (no halo)
	3	Altocumulus (Ac)	Thin Ac at a single level
	4	Altocumulus (Ac)	Thin Ac in patches, often lens shaped, and at different levels
	5	Altocumulus (Ac)	Thin Ac in bands or layer, invading the sky and thickening
	6	Altocumulus (Ac)	Ac formed from spreading out of Cu
	7	Altocumulus (Ac)	Ac and As or Nimbostratus (Ns) together
	8	Altocumulus (Ac)	Ac as cumiliform tufts or with turrets.
	9	Altocumulus (Ac)	Ac of a chaotic sky, generally with clouds at different levels
High Cloud	0	-	No high cloud types
	1	Cirrus (Cs)	Filaments, strands or hooks of Ci
	2	Cirrus (Cs)	Dense Ci in patches or twisted masses, not increasing
	3	Cirrus (Cs)	Dense Ci, often anvil shaped, being the remains of the upper part of a Cb
	4	Cirrus (Cs)	Dense Ci, often book shaped, invasive and thickening
	5	Cirrus/Cirrostratus (Ci/Cs)	Ci and Cirrostratus (Cs) and/or Cs, increasing and thickening, <45 degrees
	6	Cirrus/Cirrostratus (Ci/Cs)	As 5, but continuous veil higher than 45 degrees
	7	Cirrostratus (Cs)	Veil of Cs covering the whole sky
	8	Cirrostratus (Cs)	Cs not increasing and not covering the whole sky
	9	Cirrocumulus	Cirrocumulus alone, or with Ci, but Cc predominant.

Table 6: Low, middle and high cloud decoder for ship observations.

Appendix F: Northern Area High Seas Forecasts; 10 to 19 December 2010

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 2300 UTC 08 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here,
and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 081800 UTC.
Trough from 7S 90E to 11S 105E to 8S 120E to Equator 132E.

PART 3. FORECAST
Java Sea.
Southwest/northwest winds 15/20 knots. Moderate seas. Isolated storms.

Remainder North of Trough.
Southwest/northwest winds 10/15 knots. Slight seas. Isolated storms.

South of Trough.
Southeast/northeast winds 10/15 knots. Slight seas. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 1100 UTC 09 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here,
and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 090600 UTC.
Trough from 7S 90E to 11S 105E to 8S 120E to Equator 130E.

PART 3. FORECAST
Java Sea.
Southwest/northwest winds 15/20 knots. Slight to moderate seas. Isolated storms.

Remainder North of Trough.
Southwest/northwest winds 10/15 knots. Slight seas. Isolated storms.

South of Trough.
Southeast/northeast winds 10/15 knots. Slight seas. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 2300 UTC 09 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here,
and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 091800 UTC.
Trough from 8S 90E to 11S 105E to 7S 117E to 9S 142E.

PART 3. FORECAST
Java Sea.
Southwest/northwest winds 15/20 knots. Moderate seas. Isolated storms.

Remainder North of trough.
Variable winds 10 knots. Slight seas. Isolated storms.

South of Trough, west of 115E.
Variable winds 10 knots. Slight seas. Moderate swell. Isolated storms.

South of Trough, east of 115E.
Southeast/northeast winds 10/15 knots. Slight seas. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 1100 UTC 10 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here,
and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 100600 UTC.
Trough from 8S 90E to 12S 105E to low [1007hPa] 7S 115E to 10S 130E.

PART 3. FORECAST
North of trough, west of 120E.
Southwest/northwest winds 10/15 knots, reaching 15/25 knots in the Java Sea.
Slight/moderate seas. Moderate swell in the Java Sea. Isolated storms.

South of trough, west of 120E.
Southeast winds 10/15 knots. Slight seas. Moderate swell. Isolated storms.

East of 120E.
Northwest/northeast winds 10/15 knots tending variable 10 knots in the Gulf of
Carpentaria. Slight seas. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 2300 UTC 10 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 101800 UTC.
Trough from 11S 90E to 12S 100E to low [1006hPa] near 8S 111E to 9S 125E to 9S 135E.

PART 3. FORECAST
North of trough, west of 120E.
Southwest/northwest winds 10/15 knots, reaching 15/25 knots in the Java Sea.
Slight/moderate seas. Moderate westerly swell in the Java Sea. Isolated storms.

South of trough, west of 120E.
Southeast/northeast winds 10/15 knots. Slight seas. Moderate southerly swell.
Isolated storms.

East of 120E.
Northwest/northeast winds 10/15 knots, tending variable 10 knots in the Gulf of Carpentaria. Slight seas. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 1100 UTC 11 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 110600 UTC.
Trough from 11S 90E to low [1006hPa] near 11S 109E to 12S 125E to 5S 140E.

PART 3. FORECAST
North of trough, west of 120E.
Southwest/northwest winds 10/15 knots, reaching 15/25 knots in the Java Sea. Slight/moderate seas. Moderate westerly swell in the eastern Java Sea. Isolated storms.

South of trough, west of 120E.
Southwest/southeast winds 10/15 knots. Slight seas. Moderate southerly swell. Isolated storms.

East of 120E.
Northwest/northeast winds 10/15 knots, tending variable 10 knots in the Gulf of Carpentaria. Slight seas. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 2300 UTC 11 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 111800 UTC.
Trough from 11S 90E to low [1004hPa] near 12S 106E to 12S 130E to 10S 142E.

PART 3. FORECAST
North of trough, west of 130E.
Southwest/northwest winds 10/20 knots, reaching 15/25 knots in the Java Sea. Slight/moderate seas, reaching moderate/rough in Java Sea. Moderate westerly swell in the eastern Java Sea. Isolated storms.

South of trough, west of 130E.
Southeast winds 10/15 knots. Slight seas. Moderate southerly swell. Isolated storms.

East of 130E.
Northwest/northeast winds 10/15 knots. Slight seas. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 1100 UTC 12 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 120600 UTC.
Trough from 10S 90E to low near 13S 105E to 12S 115E to 10S 142E.

PART 3. FORECAST
North of trough.
Southwest/northwest winds 10/20 knots, reaching 15/25 knots in the Indian Ocean between 100E and 110E. Slight/moderate seas, tending moderate/rough in the Indian Ocean between 100E and 110E. Moderate southerly swell in the Indian Ocean. Isolated storms.

South of trough.
Southeast winds 10/15 knots, tending variable 10 knots in the Gulf of Carpentaria. Slight seas. Moderate southerly swell in the Indian Ocean. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 2300 UTC 12 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 121800 UTC.
Trough from 10S 90E to low [1003] near 14S 103E to 13S 125E to 11S 142E.

PART 3. FORECAST
North of trough.
Southwest/northwest winds 10/20 knots, reaching 15/25 knots in the Indian Ocean between 98E and 112E. Slight/moderate seas, tending moderate/rough in the Indian Ocean between 98E and 98E. Moderate southerly swell in the Indian Ocean. Isolated storms.

South of trough.
Southeast winds 10/15 knots, tending variable 10 knots in the Gulf of Carpentaria. Slight seas. Moderate southerly swell in the Indian Ocean. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 1100 UTC 13 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 130600 UTC.
Trough from 9S 90E to low [1003hPa] near 14S 102E to 13S 125E to 11S 142E.

PART 3. FORECAST
North of trough.
Southwest/northwest winds 10/20 knots, reaching 15/25 knots in the Indian Ocean between 98E and 112E. Slight/moderate seas, tending moderate/rough in the Indian Ocean between 98E and 112E. Moderate southerly swell in the Indian Ocean. Isolated storms.

South of trough.
Southeast winds 10/15 knots, tending variable 10 knots in the Timor Sea. Slight seas. Moderate southerly swell in the Indian Ocean. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 2300 UTC 13 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 131800 UTC.
Trough from 9S 90E to low [1002hPa] near 13S 102E to second low [1003hPa] near 15S 112E to 13S 125E to 11S 142E.

PART 3. FORECAST
North of trough.
Southwest/northwest winds 10/20 knots, reaching 15/25 knots in the Indian Ocean between 100E and 115E. Slight/moderate seas, tending moderate/rough in the Indian Ocean between 100E and 115E. Moderate southerly swell in the Indian Ocean. Isolated storms tending occasional near trough.

South of trough.
Southeast winds 10/15 knots, tending variable 10 knots in the Timor Sea. Slight seas. Moderate southerly swell in the Indian Ocean. Isolated storms tending occasional near trough.

WEATHER DARWIN

IDD10210

UPDATED
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

UPDATED HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 0300 UTC 14 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 1403 UTC.
Trough from 9S 90E to low [1001hPa] near 15S 107E to 13S 125E to 11S 142E.

PART 3. FORECAST
North of trough.
Southwest/northwest winds 15/25 knots, reaching 25/33 knots in the Indian Ocean between 100E and 117E. Slight/moderate seas, tending moderate/rough in the Indian Ocean between 100E and 115E. Moderate southerly swell in the Indian Ocean. Isolated storms tending occasional near trough.

South of trough.
Southeast winds 10/15 knots, tending variable 10 knots in the Timor Sea. Slight seas. Moderate southerly swell in the Indian Ocean. Isolated storms tending occasional near trough.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 1100 UTC 14 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 140600 UTC.
Trough from 9S 90E to low [1000hPa] near 15S 107E to 14S 123E to 10S 132E to 11S 142E.

PART 3. FORECAST
North of trough.
Southwest/northwest winds 15/25 knots, reaching 25/33 knots in the Indian Ocean between 100E and 117E. Slight/moderate seas, tending rough/very rough in the Indian Ocean between 100E and 117E. Moderate southerly swell in the Indian Ocean. Isolated storms tending occasional near trough.

South of trough.
Southeast winds 10/15 knots, tending variable 10 knots in the Timor Sea. Slight seas. Moderate southerly swell in the Indian Ocean. Isolated storms tending occasional near trough.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 2300 UTC 14 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 141800 UTC.
Trough from 9S 90E to low [999hPa] near 17S 109E to 14S 123E to 10S 132E to 11S 142E.

PART 3. FORECAST
North of trough.
Southwest/northwest winds 15/25 knots, reaching 25/33 knots in the Indian Ocean between 100E and 117E. Slight/moderate seas, tending rough/very rough in the Indian Ocean between 100E and 117E. Moderate southerly swell in the Indian Ocean. Isolated storms tending occasional near trough.

South of trough.
Southeast winds 10/15 knots, tending variable 10 knots in the Timor Sea. Slight seas. Moderate southerly swell in the Indian Ocean. Isolated storms tending occasional near trough.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 1100 UTC 15 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 150600 UTC.
Trough from 9S 90E to 12S 100E. Another trough from 13S 125E to a weak low [1006 hPa] near 12S 127E to another weak low [1006 hPa] near 12S 138E to 11S 142E.

PART 3. FORECAST
North of trough.
Southwest/northwest winds 15/25 knots, reaching 25/33 knots in the Indian Ocean between 100E and 115E. Slight/moderate seas, tending rough/very rough in the Indian Ocean between 100E and 115E. Moderate southwesterly swell in the Indian Ocean. Isolated storms tending occasional near trough.

South of trough.
South/southwest winds 10/15 knots west of 100E. Northeast/southeast winds 10/20 knots east of 125E. Slight/moderate seas. Moderate southwesterly swell in the Indian Ocean. Isolated storms tending occasional near trough.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 2300 UTC 15 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 151800 UTC.
Trough from 9S 90E to 12S 105E. Another trough from 13S 125E to 12S 130E to 13S 138E to 12S 142E.

PART 3. FORECAST
North of troughs.
Southwest/northwest winds 15/25 knots, reaching 25/33 knots in the Indian Ocean between 105E and 115E. Slight/moderate seas, tending rough/very rough in the Indian Ocean between 105E and 115E. Moderate southwesterly swell in the Indian Ocean. Isolated storms tending occasional near trough.

South of troughs.
Southeast/southwest winds 10/15 knots west of 105E. Northeast/southeast winds 10/20 knots east of 125E. Slight/moderate seas. Moderate southwesterly swell in the Indian Ocean. Isolated storms tending occasional near trough.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 1100 UTC 16 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 160600 UTC.
Trough from 10S 90E to 13S 100E. Another trough from 13S 125E to 12S 130E to 13S 138E to 12S 142E.

PART 3. FORECAST
North of troughs.
Southwest/northwest winds 15/25 knots, reaching 25/33 knots in the Indian Ocean between 105E and 115E. Slight/moderate seas, tending rough/very rough in the Indian Ocean between 105E and 115E. Moderate southwesterly swell in the Indian Ocean. Isolated storms tending occasional near trough.

South of troughs.
Southeast/southwest winds 10/15 knots west of 105E. Northeast/southeast winds 10/20 knots east of 125E. Slight/moderate seas. Moderate southwesterly swell in the Indian Ocean. Isolated storms tending occasional near trough.

WEATHER DARWIN

IDD10210

UPDATED
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

UPDATED HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 1500 UTC 16 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 160600 UTC.
Trough from 10S 90E to 13S 100E. Another trough from 13S 125E to 12S 130E to 13S 138E to 12S 142E.

PART 3. FORECAST
North of troughs.
Southwest/northwest winds 15/25 knots, reaching 25/33 knots south of 3S between 105E and 115E. Slight/moderate seas, tending rough/very rough south of 3S between 105E and 115E. Moderate southwesterly swell in the Indian Ocean. Isolated storms tending occasional near trough.

South of troughs.
Southeast/southwest winds 10/15 knots west of 105E. Northeast/southeast winds 10/20 knots east of 125E. Slight/moderate seas. Moderate southwesterly swell in the Indian Ocean. Isolated storms tending occasional near trough.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 2300 UTC 16 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 161800 UTC.
Trough from 9S 90E to 12S 100E.

PART 3. FORECAST
Between 105E and 120E.
Southwest/northwest winds 10/20 knots, reaching 20/33 knots south of 5S between 105E and 115E. Moderate seas, tending rough/very rough south of 5S. Moderate swell in the Indian Ocean. Isolated storms.

West of 105E.
Southwest/northwest winds 10/15 knots. Slight/moderate seas. Moderate swell south of 5S. Isolated storms.

East of 120E.
Northeast/northwest winds 10 knots tending northwest 15/20 knots south of 5S. Moderate seas. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 1100 UTC 17 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 170600 UTC.
Trough from 9S 90E to 12S 97E.

PART 3. FORECAST
Between 105E and 125E.
Southwest/northwest winds 10/20 knots, reaching 20/33 knots south of 5S between 110E and 120E. Moderate seas, tending rough/very rough south of 5S. Moderate swell in the Indian Ocean. Isolated storms.

West of 105E.
Southwest/northwest winds 10/15 knots. Slight/moderate seas. Moderate swell south of 5S. Isolated storms.

East of 125E.
Northeast/northwest winds 10 knots tending north/northwest winds 15/20 knots south of 5S. Moderate seas. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 2300 UTC 17 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 171800 UTC.
Trough from 10S 90E to 12S 97E.

PART 3. FORECAST
Between 105E and 125E.
Southwest/northwest winds 10/20 knots. Winds reaching 20/30 knots south of 5S before easing to 15/25 knots after 180900 UTC. Moderate seas, tending rough/very rough south of 5S. Moderate swell in the Indian Ocean. Isolated storms.

West of 105E.
Southwest/northwest winds 10/15 knots. Slight/moderate seas. Moderate swell south of 5S. Isolated storms.

East of 125E.
Northeast/northwest winds 10 knots tending north/northwest winds 15/20 knots south of 5S. Moderate seas. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 1100 UTC 18 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here,
and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 180600 UTC.
Trough from 7S 90E to 12S 100E.

PART 3. FORECAST
Southwest of trough.
Southeast winds 10 knots. Moderate swell. Isolated storms.

Elsewhere.
West to north winds 10/20 knots. Winds reaching 25 knots south of 10S between
113E and 123E. Moderate seas, tending rough south of 10S between 113E and 123E.
Moderate swell in the Indian Ocean. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 2300 UTC 18 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 181800 UTC.
Trough from 9S 90E to 12S 100E to 15S 105E.

PART 3. FORECAST
South of trough.
Southeast/southwest winds 10/15 knots. Moderate southerly swell. Isolated storms.

North of trough.
Southwest/northwest winds 10/20 knots, reaching 15/25 knots south of 10S between 110E and 120E. Moderate/rough seas. Moderate southerly swell in the Indian Ocean. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 1100 UTC 19 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here, and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 190600 UTC.
Trough from 09S 90E to 11S 100E to 12S 105E.

PART 3. FORECAST
South of trough.
Southeast/southwest winds 10/15 knots. Moderate southerly swell. Isolated storms.

North of trough.
Southwest/northwest winds 10/20 knots, reaching 15/25 knots south of 10S between 110E and 120E. Moderate/rough seas. Moderate southerly swell in the Indian Ocean. Isolated storms.

WEATHER DARWIN

IDD10210
SECURITE
Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

HIGH SEAS FORECAST FOR METAREA 10/11
NORTHERN AREA: EQUATOR TO 12 SOUTH BETWEEN 90/142 EAST AND
SOUTHWARD TO COAST BETWEEN 125/142 EAST
ISSUED BY THE AUSTRALIAN BUREAU OF METEOROLOGY, DARWIN
FOR 24 HOURS COMMENCING 2300 UTC 19 December 2010

PLEASE BE AWARE
Wind gusts can be a further 40 percent stronger than the averages given here,
and maximum waves may be up to twice the height.

PART 1. WARNINGS
Nil.

PART 2. SITUATION
At 191800 UTC.
Trough from 10S 90E to 12S 105E.

PART 3. FORECAST
South of trough.
Southeast/south winds 15/20 knots. Moderate seas. Moderate southerly swell.
Isolated storms.

North of trough.
Southwest/northwest winds 10/20 knots. Slight/moderate seas. Moderate southerly
swell in the Indian Ocean. Isolated storms.

WEATHER DARWIN

Appendix G: Indian Ocean Islands Forecasts; 10 to 19 December 2010

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 3:46pm WST on Thursday the 9th of December 2010
Valid for tonight and tomorrow

CHRISTMAS ISLAND:
A few showers with the risk of a thunderstorm. Light W'ly winds.
Maximum temperature: Friday 28

COCOS ISLAND:
A shower or two with the risk of a thunderstorm. Light SE/NE winds.
Maximum temperature: Friday 30

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 5:30am WST on Friday the 10th of December 2010
Valid for today

CHRISTMAS ISLAND:
A few showers with the risk of a thunderstorm. Light W'ly winds.
Maximum temperature: Friday 28

COCOS ISLAND:
A shower or two with the risk of a thunderstorm. Light SE/NE winds.
Maximum temperature: Friday 30

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 3:45pm WST on Friday the 10th of December 2010
Valid for tonight and tomorrow

CHRISTMAS ISLAND:
Showers with a few thunderstorms. Light SW'ly winds.
Maximum temperature: Saturday 27

COCOS ISLAND:
Showers with a thunderstorm or two. Light SE winds.
Maximum temperature: Saturday 29

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 5:30am WST on Saturday the 11th of December 2010
Valid for today

CHRISTMAS ISLAND:
Showers with a few thunderstorms. Light S/SW'ly winds.
Maximum temperature: Saturday 27

COCOS ISLAND:
Showers with a thunderstorm or two. Light SE winds.
Maximum temperature: Saturday 29

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 3:45pm WST on Saturday the 11th of December 2010
Valid for tonight and tomorrow

CHRISTMAS ISLAND:
Showers and thunderstorms. Light winds.
Maximum temperature: Sunday 25

COCOS ISLAND:
Showers and thunderstorms. Light winds.
Maximum temperature: Sunday 27

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 5:30am WST on Sunday the 12th of December 2010
Valid for today

CHRISTMAS ISLAND:
Shower or two, thunderstorm possible. Light winds.
Maximum temperature: Sunday 25

COCOS ISLAND:
Shower or two, thunderstorm possible. Light winds.
Maximum temperature: Sunday 27

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 4:19pm WST on Sunday the 12th of December 2010
Valid for tonight and tomorrow

CHRISTMAS ISLAND:
Showery periods and a possible thunderstorm. W/NW winds becoming fresh to strong.
Maximum temperature: Monday 28

COCOS ISLAND:
Shower or two and a possible thunderstorm. Moderate S/SW winds.
Maximum temperature: Monday 29

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 5:30am WST on Monday the 13th of December 2010
Valid for today

CHRISTMAS ISLAND:
Showery periods and a possible thunderstorm. Freshening W/NW winds.
Maximum temperature: Monday 28

COCOS ISLAND:
Shower or two and a possible thunderstorm. Light to moderate S/SW winds.
Maximum temperature: Monday 29

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 3:45pm WST on Monday the 13th of December 2010
Valid for tonight and tomorrow

CHRISTMAS ISLAND:
Showery periods and a possible thunderstorm. Fresh W/NW winds.
Maximum temperature: Tuesday 29

COCOS ISLAND:
Shower or two and a possible thunderstorm. Light to moderate S/SW winds.
Maximum temperature: Tuesday 29

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 5:30am WST on Tuesday the 14th of December 2010
Valid for today

CHRISTMAS ISLAND:
Rain periods. Possible thunderstorm. Moderate to fresh W/NW winds.
Maximum temperature: Tuesday 27

COCOS ISLAND:
Shower or two. Possible thunderstorm. Moderate S/SW winds.
Maximum temperature: Tuesday 30

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 3:45pm WST on Tuesday the 14th of December 2010
Valid for tonight and tomorrow

CHRISTMAS ISLAND:
Few showers. Possible thunderstorm. Moderate to fresh W/NW winds.
Maximum temperature: Wednesday 28

COCOS ISLAND:
Shower or two. Possible thunderstorm. Moderate S'ly winds.
Maximum temperature: Wednesday 30

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 5:30am WST on Wednesday the 15th of December 2010
Valid for today

CHRISTMAS ISLAND:
Few showers. Possible thunderstorm. Moderate to fresh W/NW winds.
Maximum temperature: Wednesday 28

COCOS ISLAND:
Shower or two. Moderate S'ly winds.
Maximum temperature: Wednesday 30

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 3:45pm WST on Wednesday the 15th of December 2010
Valid for tonight and tomorrow

CHRISTMAS ISLAND:
A few showers, with one or two thunderstorms possible. Moderate to fresh W/NW winds, tending more W/SW'ly on Thursday.
Maximum temperature: Thursday 28

COCOS ISLAND:
A shower or two. Moderate S/SE winds.
Maximum temperature: Thursday 30

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 5:30am WST on Thursday the 16th of December 2010
Valid for today

CHRISTMAS ISLAND:
A few showers, with one or two thunderstorms possible. Moderate to fresh W/SW winds.
Maximum temperature: Thursday 28

COCOS ISLAND:
A shower or two. Moderate SW/SE winds.
Maximum temperature: Thursday 30

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 3:45pm WST on Thursday the 16th of December 2010
Valid for tonight and tomorrow

CHRISTMAS ISLAND:
A few showers, possible thunderstorm. Moderate to fresh W/SW winds.
Maximum temperature: Friday 28

COCOS ISLAND:
A shower or two. Moderate S'ly winds.
Maximum temperature: Friday 30

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 5:30am WST on Friday the 17th of December 2010
Valid for today

CHRISTMAS ISLAND:
A few showers, possible thunderstorm. Moderate to fresh W/SW winds.
Maximum temperature: Friday 28

COCOS ISLAND:
A shower or two. Moderate S'ly winds.
Maximum temperature: Friday 30

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 3:48pm WST on Friday the 17th of December 2010
Valid for tonight and tomorrow

CHRISTMAS ISLAND:
A few showers, possible thunderstorm. Moderate to fresh W/SW winds.
Maximum temperature: Saturday 28

COCOS ISLAND:
Chance of a shower or two. Moderate S'ly winds.
Maximum temperature: Saturday 29

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 5:30am WST on Saturday the 18th of December 2010
Valid for today

CHRISTMAS ISLAND:
A shower and possible thunderstorm. Moderate to fresh W/SW winds.
Maximum temperature: Saturday 28

COCOS ISLAND:
Chance of a shower or two. Moderate S'ly winds.
Maximum temperature: Saturday 29

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 3:45pm WST on Saturday the 18th of December 2010
Valid for tonight and tomorrow

CHRISTMAS ISLAND:
Cloudy, with a shower or two. Possible thunderstorm. Light to moderate W/SW winds.
Maximum temperature: Sunday 28

COCOS ISLAND:
Chance of a shower. Light to moderate S/SE winds.
Maximum temperature: Sunday 29

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 5:30am WST on Sunday the 19th of December 2010
Valid for today

CHRISTMAS ISLAND:
Cloudy, with a shower or two. Possible thunderstorm. Light to moderate W/SW winds.
Maximum temperature: Sunday 28

COCOS ISLAND:
Chance of a shower. Light to moderate S/SE winds.
Maximum temperature: Sunday 29

IDW10600
Australian Government Bureau of Meteorology
Western Australia

INDIAN OCEAN ISLANDS FORECASTS
Issued at 3:53pm WST on Sunday the 19th of December 2010
Valid for tonight and tomorrow

CHRISTMAS ISLAND:
Cloudy, with a shower or two. Light to moderate W/SW winds.
Maximum temperature: Monday 28

COCOS ISLAND:
Partly cloudy. Moderate SE winds.
Maximum temperature: Monday 29

Appendix H: Aerodrome Forecasts for Christmas Island (YPXM)

TAF YPXM 091636Z 0918/1012
20006KT 9999 -SHRA SCT008 BKN020
TEMPO 0918/1012 1000 TSRA BKN002 FEW010CB
RMK
T 24 24 25 27 Q 1009 1008 1010 1010

TAF YPXM 092211Z 1000/1018
20006KT 9999 -SHRA SCT020 BKN040
TEMPO 1000/1018 1000 TSRA BKN008 FEW010CB
RMK
T 25 26 26 25 Q 1010 1010 1008 1007

TAF YPXM 100417Z 1006/1024
20006KT 9999 -SHRA SCT020 BKN040
TEMPO 1006/1024 1000 TSRA BKN008 FEW010CB
RMK
T 26 25 24 24 Q 1008 1007 1009 1010

TAF AMD YPXM 100952Z 1010/1106
20006KT 5000 RA SCT020 BKN040
TEMPO 1010/1106 1000 TSRA BKN008 FEW010CB
RMK
T 23 24 24 24 Q 1008 1010 1009 1007

TAF AMD YPXM 101711Z 1017/1112
20006KT 5000 RA BKN010
TEMPO 1017/1112 1000 TSRA BKN008 FEW010CB
RMK
T 23 24 24 26 Q 1007 1006 1007 1008

TAF YPXM 102205Z 1100/1118
20006KT 5000 RA BKN010
TEMPO 1100/1118 1000 TSRA BKN008 FEW010CB
RMK
T 25 26 26 25 Q 1008 1009 1006 1005

TAF YPXM 110401Z 1106/1124
24008KT 5000 RA BKN010
TEMPO 1106/1124 1000 TSRA BKN008 FEW010CB
RMK
T 25 25 24 23 Q 1006 1005 1006 1007

TAF YPXM 110923Z 1112/1206
VRB05KT 5000 RA BKN010
TEMPO 1112/1206 1000 TSRA BKN008 FEW010CB
RMK
T 24 23 23 23 Q 1006 1008 1006 1005

TAF YPXM 111606Z 1118/1212
26008KT 5000 RA BKN010
TEMPO 1118/1212 1000 TSRA BKN008 FEW010CB
RMK
T 23 23 25 26 Q 1006 1005 1007 1008

TAF YPXM 112119Z 1200/1218
29008KT 5000 RA BKN010
TEMPO 1200/1218 1000 TSRA BKN008 FEW010CB
RMK
T 25 26 26 25 Q 1007 1008 1006 1005

TAF AMD YPXM 120021Z 1200/1218
29008KT 5000 RA BKN008
TEMPO 1200/1218 0500 TSRA OVC001 FEW008CB
RMK
T 25 26 26 25 Q 1007 1008 1006 1005

TAF YPXM 120432Z 1206/1224
29010KT 5000 RA BKN008
TEMPO 1206/1224 0500 TSRA OVC001 FEW008CB
RMK
T 25 25 24 23 Q 1005 1004 1006 1007

TAF YPXM 121027Z 1212/1306
29010KT 5000 RA BKN005 OVC080
FM121800 30018KT 5000 -RA BKN005 OVC080
TEMPO 1212/1306 0500 TSRA OVC001 FEW008CB
RMK
T 23 23 23 23 Q 1006 1007 1006 1006

TAF YPXM 121603Z 1218/1312
28017KT 5000 -RA BKN005 OVC080
TEMPO 1218/1312 0500 TSRA OVC001 FEW008CB
RMK
T 23 24 25 26 Q 1006 1006 1007 1008

TAF AMD YPXM 122217Z 1300/1318
28017KT 5000 -RA BKN010 OVC080
TEMPO 1300/1318 0500 TSRA OVC005 FEW008CB
RMK
T 25 26 27 26 Q 1007 1009 1007 1006

TAF YPXM 130420Z 1306/1324
30014KT 7000 -RA BKN012 OVC080
FM131600 30014KT 5000 -RA BKN010 BKN030
TEMPO 1306/1324 0500 TSRA OVC005 FEW008CB
RMK
T 26 26 25 24 Q 1007 1006 1007 1008

TAF YPXM 131002Z 1312/1406
30014KT 7000 -RA SCT006 BKN010 OVC080
FM131600 30014KT 5000 -RA BKN010 BKN030
TEMPO 1312/1406 0500 TSRA OVC005 FEW008CB
RMK
T 25 24 24 24 Q 1007 1008 1007 1006

TAF AMD YPXM 131615Z 1316/1412
30014KT 8000 -RA BKN012 BKN030
TEMPO 1318/1412 0500 TSRA OVC005 FEW010CB
RMK
T 25 24 24 26 Q 1006 1006 1006 1008

TAF YPXM 132203Z 1400/1418
30014KT 8000 -RA BKN012 BKN020
TEMPO 1400/1418 0500 TSRA OVC005 FEW010CB
RMK
T 25 27 27 26 Q 1007 1008 1006 1004

TAF YPXM 140415Z 1406/1424
31014KT 8000 -RA BKN012 BKN020
TEMPO 1406/1424 VRB20G30KT 0500 TSRA OVC005 FEW015CB
RMK
T 27 26 25 24 Q 1005 1004 1005 1006

TAF YPXM 141014Z 1412/1506
31014KT 8000 -SHRA BKN012 BKN020
TEMPO 1412/1424 VRB20G30KT 0500 TSRA BKN008 FEW015CB
RMK
T 25 24 24 24 Q 1005 1006 1005 1004

TAF AMD YPXM 141617Z 1418/1512
31014KT 8000 -SHRA BKN008
TEMPO 1418/1512 VRB20G30KT 0500 TSRA BKN008 FEW015CB
RMK
T 24 24 24 25 Q 1004 1004 1006 1006

TAF YPXM 142221Z 1500/1518
31014KT 8000 -SHRA BKN008
TEMPO 1500/1518 VRB20G30KT 1000 TSRA BKN008 FEW015CB
RMK
T 25 26 26 25 Q 1005 1006 1005 1004

TAF YPXM 150403Z 1506/1606
31014KT 8000 -SHRA BKN006
TEMPO 1506/1606 29020G30KT 1000 TSRA BKN002 FEW015CB
RMK
T 24 25 25 24 Q 1005 1004 1006 1007

TAF AMD YPXM 150412Z 1504/1604
31010KT 4000 RA BKN012
FM150900 31014KT 8000 -SHRA BKN006
TEMPO 1504/1604 29020G30KT 1000 TSRA BKN002 FEW015CB
RMK
T 23 24 24 24 Q 1005 1004 1004 1006

TAF YPXM 150413Z 1506/1606
31010KT 4000 RA BKN012
FM150900 31014KT 8000 -SHRA BKN006
TEMPO 1506/1606 29020G30KT 1000 TSRA BKN002 FEW015CB
RMK
T 26 25 24 23 Q 1004 1004 1006 1007

TAF AMD YPXM 150721Z 1507/1606
31010KT 4000 RA BKN002
FM150900 31014KT 8000 -SHRA BKN006
TEMPO 1507/1606 29020G30KT 1000 TSRA BKN002 FEW015CB
RMK
T 25 24 24 23 Q 1004 1005 1006 1006

TAF YPXM 151006Z 1512/1612
31014KT 8000 -SHRA BKN006
TEMPO 1512/1612 29020G30KT 1000 TSRA BKN002 FEW015CB
RMK
T 24 24 24 24 Q 1004 1005 1004 1004

TAF AMD YPXM 151542Z 1518/1618
26008KT 8000 -SHRA BKN008
FM160000 26012KT 9999 -SHRA SCT010
TEMPO 1518/1618 29020G30KT 1000 TSRA BKN002 FEW015CB
RMK
T 24 24 25 27 Q 1005 1004 1007 1007

TAF YPXM 152208Z 1600/1624
26012KT 9999 -SHRA SCT010 BKN025
TEMPO 1600/1624 29020G30KT 1000 TSRA BKN002 FEW015CB
RMK
T 25 26 26 25 Q 1007 1007 1005 1004

TAF YPXM 160411Z 1606/1624
26012KT 9999 -SHRA SCT010 BKN025
TEMPO 1606/1624 29020G30KT 1000 TSRA BKN002 FEW015CB
RMK
T 27 26 25 24 Q 1005 1005 1007 1007

TAF YPXM 160921Z 1612/1706
26012KT 9999 -SHRA SCT010 BKN020
TEMPO 1612/1706 29020G30KT 1000 TSRA BKN002 FEW015CB
RMK
T 24 24 24 24 Q 1007 1007 1005 1004

TAF YPXM 161608Z 1618/1712
26014KT 9999 -SHRA SCT010 BKN020
TEMPO 1618/1712 29020G35KT 1000 TSRA BKN002 FEW015CB
RMK
T 24 24 25 26 Q 1005 1005 1007 1007

TAF YPXM 162205Z 1700/1718
26014KT 9999 -SHRA SCT010 BKN020
TEMPO 1700/1718 29020G35KT 1000 TSRA BKN002 FEW015CB
RMK
T 25 26 26 25 Q 1007 1007 1006 1004

TAF YPXM 170418Z 1706/1724
26014KT 9999 -SHRA SCT010 BKN020
TEMPO 1706/1724 29020G35KT 1000 TSRA BKN007 FEW015CB
RMK
T 26 25 24 24 Q 1006 1005 1006 1008

TAF YPXM 171033Z 1712/1806
26014KT 9999 -SHRA SCT010 BKN020
TEMPO 1712/1806 3000 TSRA BKN007 FEW015CB
RMK
T 24 24 24 24 Q 1006 1007 1007 1006

TAF YPXM 171552Z 1718/1812
26014KT 9999 -SHRA SCT010 BKN020
TEMPO 1718/1812 3000 TSRA BKN007 FEW015CB
RMK
T 24 24 25 26 Q 1007 1007 1008 1009

TAF YPXM 172205Z 1800/1818
26014KT 9999 -SHRA SCT010 BKN020
TEMPO 1800/1818 3000 TSRA BKN007 FEW015CB
RMK
T 25 26 26 25 Q 1008 1009 1007 1007

TAF YPXM 180412Z 1806/1824
25012KT 9999 -SHRA SCT010 BKN020
TEMPO 1806/1824 3000 TSRA BKN007 FEW015CB
RMK
T 27 25 24 24 Q 1007 1007 1009 1010

TAF YPXM 181013Z 1812/1906
25012KT 9999 -SHRA SCT010 BKN020
TEMPO 1812/1906 3000 TSRA BKN007 FEW015CB
RMK
T 24 24 24 24 Q 1009 1010 1009 1008

TAF YPXM 181707Z 1818/1912
24010KT 9999 -SHRA BKN020
TEMPO 1818/1912 VRB20G35KT 3000 TSRA BKN007 FEW015CB
RMK
T 23 24 25 26 Q 1009 1008 1010 1010

TAF YPXM 182245Z 1900/1918
24010KT 9999 -SHRA BKN020
TEMPO 1900/1918 VRB20G35KT 3000 TSRA BKN007 FEW015CB
RMK
T 24 26 26 25 Q 1010 1010 1009 1008

TAF AMD YPXM 190502Z 1906/1924
24010KT 9999 -SHRA BKN020
FM191500 23007KT 9999 -SHRA BKN009
INTER 1906/1924 3000 SHRA BKN007
RMK
T 26 25 24 24 Q 1009 1007 1009 1010

TAF YPXM 191029Z 1912/2006
22007KT 9999 -SHRA BKN020
FM191500 23007KT 9999 -SHRA BKN009
FM200100 23007KT 9999 -SHRA BKN015
INTER 1912/1924 3000 SHRA BKN007
RMK
T 24 24 24 23 Q 1009 1010 1009 1008

TAF AMD YPXM 191540Z 1918/2012
23007KT 9999 -SHRA BKN015
INTER 1918/2012 3000 SHRA BKN008
RMK
T 24 23 24 26 Q 1009 1009 1010 1010

Appendix I: Search and Rescue Forecasts

IDW43500
AUSTRALIAN GOVERNMENT BUREAU OF METEOROLOGY
WESTERN AUSTRALIA

SEARCH AND RESCUE FORECAST
VALID 151030Z TO 152230Z [151830 TO 160630 LOCAL]
FOR 50NM RADIUS OF CHRISTMAS ISLAND.

OVERVIEW:
AREAS OF RAIN AND LOW CLOUD WITH OCCASIONAL THUNDERSTORMS.

WIND:
3000 5000 7000 10000
250/25 250/25 260/25 270/25 PS10

CLOUD:
SCT CB 2500/50000.
BKN ST 1300/2500, BASE LOWERING TO 0800 IN PRECIPITATION.
BKN CU 2500/18000.
OVC AC/AS ABOVE 8000.

WEATHER:
TSRA/RA.

VISIBILITY:
0500M IN TSRA, 2000M IN RA.

FREEZING LEVEL:
16000FT.

ICING:
SEV IN CB. MOD IN REMAINING CLOUD ABOVE FREEZING LEVEL.

TURBULENCE:
SEV NEAR CB. MOD IN CU/AC.

MINIMUM QNH : 1004HPA AT 151000Z

MARINE:
SST: 29C

SEA: STATE: ROUGH
HEIGHT: TO 2.0M
DIRECTION: FROM THE WNW

SWELL: STATE: MODERATE TO HEAVY
HEIGHT: TO 3.0M
DIRECTION: FROM THE NW

REMARKS:
RECENT SURFACE WIND ESTIMATED TO BE WNW AT 20 TO 30 KNOTS OVER OPEN WATER, EXPECTED TO GRADUALLY TEND WSW TONIGHT.

FOR MORE INFORMATION RING THE AVIATION FORECASTER ON [08] 9263 2255.

IDW43500
AUSTRALIAN GOVERNMENT BUREAU OF METEOROLOGY
WESTERN AUSTRALIA

SEARCH AND RESCUE FORECAST
VALID 152230Z TO 161030Z [160630 TO 161830 LOCAL]
FOR 50NM RADIUS OF CHRISTMAS ISLAND.

OVERVIEW:
AREAS OF RAIN AND LOW CLOUD WITH OCCASIONAL THUNDERSTORMS.

WIND:
3000 5000 7000 10000
270/25 270/25 260/25 250/25 PS10

CLOUD:
SCT CB 1500/50000.
BKN ST 0200/1200 IN PRECIPITATION.
BKN ST 0800/1500, BASE LIFTING TO 1000 AND TENDING SCT AFTER 24Z.
BKN CU 1500/18000.
OVC AC/AS ABOVE 8000.

WEATHER:
TSRA/RA.

VISIBILITY:
1000M IN TSRA, 2000M IN RA.

FREEZING LEVEL:
16000FT.

ICING:
SEV IN CB. MOD IN REMAINING CLOUD ABOVE FREEZING LEVEL.

TURBULENCE:
SEV NEAR CB. MOD IN CU/AC.

MINIMUM QNH : 1006HPA AT 160000Z

MARINE:
SST: 28C

SEA: STATE: ROUGH
HEIGHT: TO 2.0M
DIRECTION: FROM THE WSW

SWELL: STATE: MODERATE TO HEAVY
HEIGHT: TO 3.0M
DIRECTION: FROM THE SSW

REMARKS:
RECENT SURFACE WIND ESTIMATED TO BE WSW AT 20 TO 30 KNOTS OVER OPEN WATER.

FOR MORE INFORMATION RING THE AVIATION FORECASTER ON [08] 9263 2255.

IDW43500
AUSTRALIAN GOVERNMENT BUREAU OF METEOROLOGY
WESTERN AUSTRALIA

SEARCH AND RESCUE FORECAST
VALID 162200Z TO 171000Z [170600 TO 171800 LOCAL]
FOR 70NM RADIUS OF CHRISTMAS ISLAND.

OVERVIEW:
AREAS OF RAIN AND LOW CLOUD WITH ISOLATED THUNDERSTORMS.

WIND:
3000 5000 7000 10000
270/30 270/30 260/25 260/20 PS10

CLOUD:
ISOL CB 1500/50000.
BKN ST 0200/1500 IN RA.
BKN CU 1500/18000.
OVC AC/AS ABOVE 8000.

WEATHER:
TSRA/RA.

VISIBILITY:
1000M IN TSRA. 2000M IN RA.

FREEZING LEVEL:
16000FT.

ICING:
SEV IN CB. MOD IN REMAINING CLOUD ABOVE FREEZING LEVEL.

TURBULENCE:
SEV IN CB. MOD IN CU/AC.

MINIMUM QNH : 1005HPA AT 170000Z

MARINE:
SST: 28C

SEA: STATE: ROUGH
HEIGHT: TO 2.0M
DIRECTION: FROM THE WSW

SWELL: STATE: MODERATE TO HEAVY
HEIGHT: 2.5M TO 3.0M
DIRECTION: FROM THE SSW

REMARKS:
SURFACE WIND ESTIMATED TO BE WSW AT 20 TO 30 KNOTS OVER OPEN WATER.

FOR MORE INFORMATION RING THE AVIATION FORECASTER ON [08] 9263 2255.

Appendix J: Daily Weather Brief for HQ Northern Command (NORCOM)

IDJ25049
Australian Government Bureau of Meteorology
Defence Meteorological Support Unit
Ph: 1800 203 860, Email:dmsu@bom.gov.au

Daily Weather Brief for HQ Northern Command
Issued at 1330Z on the 09/12/2010 [0030 on the 10/12/2010 LOCAL]
Based on situation Friday 10/12/2010.

Synoptic Overview for Northern Area (including Christmas Island):
Significant trough stretches from NT through Queensland and northeast NSW and links to a cold front which is moving into the Tasman Sea. Another trough also extends from southeast of Xmas Island across Java to the Banda Sea just north of Timor.

Current Weather Impact - Northern Aust:
Generally SE/NE winds 5/15 knots through most sectors, reaching 20 knots in the eastern sector. Localised squalls and gusts associated with thunderstorms. Showers and thunderstorms affecting most areas, with activity generally increasing through the weekend. Areas of low cloud with thunderstorms and about Xmas Island. Localised flooding through most sectors expected to become more widespread through the weekend.

Weather Impact Matrix:
Refer to www.bom.gov.au/defence/norcom/norcom_wx.shtml

Christmas Island (CI) Region (conditions on Fri-Mon):
Marginal conditions for marine visibility due to frequent showers and occasional thunderstorms. Marginal to unfavourable conditions for air-sea visibility due to broken to overcast cloud below 5000ft. Gusts to 30 knots and temporarily raised seas with thunderstorm activity.

Western (conditions on Fri-Mon):
Marginal conditions for marine visibility due to scattered showers and occasional thunderstorms. Marginal conditions for air-sea visibility due to areas broken cloud below 5000ft. Marginal conditions for land ops due to localised flooding. Marginal for boarding in far southwest of sector due sea state 3.

Central (conditions on Fri-Mon):
Marginal conditions for marine and aviation visibility due to scattered showers and occasional thunderstorms, conditions becoming unfavourable from Sunday as storms become frequent. Marginal conditions for air-sea visibility due to areas of broken cloud below 5000ft, becoming unfavourable from Sunday as cloud becomes overcast. Marginal conditions for land ops due to localised flooding, conditions becoming unfavourable from Sunday as flooding becomes widespread.

Eastern (conditions on Fri-Mon):
Marginal conditions for marine and aviation visibility due to scattered showers and occasional thunderstorms, conditions becoming unfavourable from Monday as storms become frequent. Marginal conditions for air-sea visibility due to areas of broken cloud below

5000ft, becoming unfavourable from Monday as cloud becomes overcast. Marginal conditions for land ops due to localised flooding, conditions becoming unfavourable from Monday as flooding becomes widespread. Marginal conditions for boarding due to sea state 3/4.

Southern Sector (conditions on Fri-Mon): [Impact on operations for areas south of 25S]
Marginal to unfavourable impacts across waters south of continent with vigorous NW/SW airstream. Marginal to unfavourable conditions for land ops due to flooding over central and southern Qld, much of NSW and parts of Vic.

REMARKS:
Following feedback from NORCOM please note the following changes:
1) Christmas Island area is defined as within 50 nm of Xmas Island.
2) The standard Navy/Douglas sea scale is now being used for sea states.
3) The Northern Sector has been removed as it is largely covered by the Western, Central and Eastern sectors.
FOR MORE INFORMATION CALL DMSU 1800 203 860 OR GO TO
http://www.bom.gov.au/defence

IDJ25049
Australian Government Bureau of Meteorology
Defence Meteorological Support Unit
Ph: 1800 203 860, Email:dmsu@bom.gov.au

Daily Weather Brief for HQ Northern Command
Issued at 1526Z on the 10/12/2010 [0226 on the 11/12/2010 LOCAL]
Based on situation Saturday 11/12/2010.

Synoptic Overview for Northern Area (including Christmas Island):
Weak pressure patterns persist over northern Australia with troughs over the Kimberley region of WA and also about northwest Qld. Trough located to the south of Xmas Island and links to a weak low over eastern Java. Strengthening monsoonal flow over Indonesia.

Current Weather Impact - Northern Aust:
Generally variable winds to 10 knots though SE/NE winds 10/15 knots Eastern sector. Gusts up to 35 knots with thunderstorm activity. Thunderstorms, showers; rain Xmas Island region. Areas of low cloud. Localised flooding through most sectors.

Weather Impact Matrix:
Refer to www.bom.gov.au/defence/norcom/norcom_wx.shtml

Christmas Island (CI) Region (conditions on Sat-Tue):
Marginal conditions for marine visibility due to frequent showers and rain as well as occasional thunderstorms. Marginal to unfavourable conditions for air-sea visibility due to BKN to OVC cloud below 5000ft. Gusts to 30 knots and temporarily raised seas with thunderstorm activity. Impacts on boarding may become marginal Mon due to sea state rising to 3/4 and unfavourable Tue as sea state becomes 4/5.

Western (conditions on Sat-Tue):
Marginal conditions for marine and aviation visibility due to scattered showers and occasional thunderstorms. Marginal conditions for air-sea visibility due to areas BKN cloud below 5000ft. Marginal conditions developing for land ops as localised heavy falls in association with thunderstorm activity causes flooding. Marginal impacts on boarding operations developing west of about 122E Tue due sea state 3/4.

Central (conditions on Sat-Tue):
Marginal conditions for marine and aviation visibility due to scattered showers and occasional thunderstorms, conditions becoming unfavourable northern Top End and adjacent Arafura Sea Mon and Tue as thunderstorms become frequent with embedded rain areas. Marginal conditions for air-sea visibility due to areas of BKN cloud below 5000ft, becoming unfavourable from Mon as cloud becomes OVC. Marginal conditions for land ops due to localised flooding, conditions becoming unfavourable from Sun as flooding becomes widespread.

Eastern (conditions on Sat-Tue):
Marginal conditions for marine and aviation visibility due to scattered showers and occasional thunderstorms, particularly land afternoons and nights. Marginal conditions for air-sea visibility due to areas of BKN cloud below 5000ft. Marginal conditions for land ops due to localised flooding.

Southern Sector (conditions on Sat-Tue): [Impact on operations for areas south of 25S]
Due to a vigorous W'ly component wind flow with embedded fronts should maintain marginal to unfavourable marine and aviation impacts mainly south of about 37S though these conditions

extending to southern WA and Bight waters late Mon into Tue. Marginal to at times unfavourable boarding impacts off the central and southwest WA coasts. Marginal to unfavourable conditions for land ops due to flooding over central and southern Qld, much of NSW and parts of Vic.

REMARKS:
Following feedback from NORCOM please note the following changes:
1) Christmas Island area is defined as within 50 nm of Xmas Island.
2) The standard Navy/Douglas sea scale is now being used for sea states.
3) The Northern Sector has been removed as it is largely covered by the Western, Central and Eastern sectors.
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Daily Weather Brief for HQ Northern Command
Issued at 1543Z on the 11/12/2010 [0243 on the 12/12/2010 LOCAL]
Based on situation Sunday 12/12/2010.

Synoptic Overview for Northern Area (including Christmas Island):
Weak pressure patterns persist over northern Australia. A developing monsoon trough extends from the near south of Xmas Island to the Ashmore Islands then across to the far north of Northern Territory. Strengthening monsoonal flow around Java.

Current Weather Impact - Northern Aust:
Freshening SW/NW winds Xmas Island. Generally variable winds to 10 knots across all sectors. Gusts up to 35 knots with thunderstorm activity. Thunderstorms, showers; rain areas Xmas Island region. Areas of low cloud. Localised flooding most sectors.

Weather Impact Matrix:
Refer to www.bom.gov.au/defence/norcom/norcom_wx.shtml

Christmas Island (CI) Region (conditions on Sun-Wed):
Marginal to unfavourable conditions for marine and aviation visibilities due to frequent showers and rain as well as occasional to frequent thunderstorms. Marginal to unfavourable conditions for air-sea visibility due to BKN to OVC cloud below 5000ft. Gusts to 30 knots and temporarily raised seas with thunderstorm activity. Impacts on boarding may become marginal during Sun into Mon due to sea state rising to 3/4 and unfavourable Tue and Wed as sea state becomes 4/5.

Western (conditions on Sun-Wed):
Marginal conditions for marine and aviation visibilities due to scattered showers and occasional thunderstorms. Impacts becoming unfavourable north of about 15S from Mon as thunderstorms become frequent with embedded rain areas. Marginal conditions for air-sea visibility due to areas BKN cloud below 5000ft. Marginal conditions developing for land ops as localised heavy falls in association with thunderstorm activity causes flooding. Marginal impacts on boarding operations developing west of about 122E from Tue due sea state 3.

Central (conditions on Sun-Wed):
Marginal conditions for marine and aviation visibilities due to scattered showers and occasional thunderstorms. Impacts becoming unfavourable northern Top End and adjacent Arafura Sea from Mon as thunderstorms become frequent with embedded rain areas. Marginal conditions for air-sea visibility due to areas of BKN cloud below 5000ft. Marginal conditions for land ops due to localised flooding.

Eastern (conditions on Sun-Wed):
Marginal conditions for marine and aviation visibilities due to scattered showers and occasional thunderstorms, particularly land afternoons and nights. Marginal conditions for air-sea visibility due to areas of BKN cloud below 5000ft. Marginal conditions for land ops due to localised flooding.

Southern Sector (conditions on Sun-Wed): [Impact on operations for areas south of 25S]

A vigorous W'ly component wind flow with embedded fronts should maintain marginal to unfavourable marine and aviation impacts mainly south of about 37S Sun. These conditions contracting to southern WA and Bight waters late Mon into Tue and into southeast Australian waters Wed. Marginal boarding impacts off the central and southwest WA coasts becoming unfavourable from Mon. Marginal marine and aviation impacts southeast and central east Qld Sun. Marginal to unfavourable conditions for land ops due to flooding over central and southern Qld, much of NSW and parts of Vic.

REMARKS:
Following feedback from NORCOM please note the following changes:
1) Christmas Island area is defined as within 50 nm of Xmas Island.
2) The standard Navy/Douglas sea scale is now being used for sea states.
3) The Northern Sector has been removed as it is largely covered by the Western, Central and Eastern sectors.
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Defence Meteorological Support Unit
Ph: 1800 203 860, Email:dmsu@bom.gov.au

Daily Weather Brief for HQ Northern Command
Issued at 1529Z on the 12/12/2010 [0229 on the 13/12/2010 LOCAL]
Based on situation Sunday 12/12/2010.

Synoptic Overview for Northern Area (including Christmas Island):
Weak pressure patterns persist over northern Australia. A developing monsoon trough extends from a low south of Xmas Island to the Ashmore Islands then NE toward the northern Arafura Sea. Strengthening monsoonal flow around Java and CI.

Current Weather Impact - Northern Aust:
Strengthening W/NW winds Xmas Island. Generally variable winds to 10 knots across all other sectors until Tuesday. Winds freshening in Central and Western sectors from Tuesday. Gusts up to 35 knots with thunderstorm activity. Thunderstorms and showers. Rain areas Christmas Island and Western regions. Areas of low cloud. Localised flooding Eastern sector.

Weather Impact Matrix:
Refer to www.bom.gov.au/defence/norcom/norcom_wx.shtml

Christmas Island (CI) Region (conditions on Mon-Thu):
Marginal to unfavourable conditions for marine and aviation visibilities due to frequent showers and rain as well as occasional to frequent thunderstorms. Marginal to unfavourable conditions for air-sea visibility due to BKN to OVC cloud below 5000ft. Gusts to 30 knots and temporarily raised seas with thunderstorm activity. Marginal impacts on boarding due to sea state 4, becoming unfavourable Tue as sea state becomes 4/5.

Western (conditions on Mon-Thu):
Marginal conditions for marine and aviation visibilities due to scattered showers and occasional thunderstorms. Impacts becoming unfavourable Tue and Wed as thunderstorms become frequent with embedded rain areas. Marginal conditions for air-sea visibility due to areas BKN cloud below 5000ft, becoming unfavourable Tue and Wed with increased storm activity and OVC cloud below 5000ft. Marginal conditions developing for land ops as localised heavy falls in association with thunderstorm activity could produce flooding later in the week. Marginal impacts on boarding operations developing from Tue due sea state 3/4.

Central (conditions on Mon-Thu):
Unfavourable conditions for marine and aviation visibilities due to scattered showers and frequent thunderstorms with embedded rain areas. Unfavourable conditions for air-sea visibility due to areas of OVC cloud below 5000ft.

Eastern (conditions on Mon-Thu):
Marginal conditions for marine and aviation visibilities due to scattered showers and occasional thunderstorms, particularly over land afternoons and nights. Marginal conditions for air-sea visibility due to areas of BKN cloud below 5000ft. Marginal conditions for land ops due to localised flooding.

Southern Sector (conditions on Mon-Thu): [Impact on operations for areas south of 25S]

A front crossing the Bight during Mon and Tue will strengthen winds over the area, with another front expected during Thu. Marginal to unfavourable boarding impacts with the frontal passages. Marginal to unfavourable conditions for land ops due to flooding over central and southern Qld, much of NSW and parts of Vic.

REMARKS:
Following feedback from NORCOM please note the following changes:
1) Christmas Island area is defined as within 50 nm of Xmas Island.
2) The standard Navy/Douglas sea scale is now being used for sea states.
3) The Northern Sector has been removed as it is largely covered by the Western, Central and Eastern sectors.
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Daily Weather Brief for HQ Northern Command
Issued at 1724Z on the 13/12/2010 [0424 on the 14/12/2010 LOCAL]
Based on situation Tuesday 14/12/2010.

Synoptic Overview for Northern Area (including Christmas Island):
A developing monsoon trough lies through the Indian Ocean from a low south of Java through the Timor Sea. The trough continues eastwards through north coast of the Top End and extends into the eastern Arafura Sea and northern Gulf. The low near 13S 102E will likely develop into a tropical cyclone Wednesday or Thursday and move slowly towards the south southeast.

Current Weather Impact - Northern Aust:
Strengthening W/NW winds Xmas Island and Western sectors. Gusts up to 35 knots with thunderstorm activity. Monsoon trough drifting slowly south during the week causing increasing monsoonal showers, rain and storms about Christmas Island, Western and Central regions and leading to frequent low cloud, low visibility and possible localised flooding.

Weather Impact Matrix:
Refer to www.bom.gov.au/defence/norcom/norcom_wx.shtml

Christmas Island (CI) Region (conditions on Tue-Fri):
Unfavourable conditions for most marine and aviation operations due low visibility and broken to overcast cloud in frequent showers and rain as well as occasional thunderstorms. Gusts to 30 knots and temporarily raised seas with thunderstorm activity. Unfavourable boarding due sea state 5/6 in 20/30 knot SW/NW winds.

Western (conditions on Tue-Fri):
Unfavourable conditions for marine and aviation visibilities due frequent showers and rain as well as occasional thunderstorms. Gusts to 30 knots and temporarily raised seas with thunderstorm activity. Unfavourable boarding due sea state 5 in 15/25 knot W/NW winds over western half - south of Curtin/Derby. In area north of Curtin, possible low development south of Timor on Wed with clockwise winds 15/20 knots SS 4 and marginal boarding conditions. Marginal conditions developing for land ops due localised flooding from heavy rainfall esp over Kimberley.

Central (conditions on Tue-Fri):
Unfavourable conditions for marine and aviation visibilities esp afternoon/overnight due to scattered showers and frequent thunderstorms with embedded rain areas. These conditions more likely over Top End and ocean waters to the north of NT. Marginal boarding conditions with NW/W winds 10/20 knots SS 4 north of Top End tending E/NE 10/15 (SS 3) through Gulf. Marginal conditions for land ops due to localised flooding over northern Top End.

Eastern (conditions on Tue-Fri):
Marginal conditions for marine and aviation visibilities due to scattered showers and thunderstorms, particularly over land during afternoons and nights. Marginal conditions for land ops due to localised flooding over Cape York.

Southern Sector (conditions on Tue-Fri): [Impact on operations for areas south of 25S]

Cold fronts crossing the Bight during the week with unfavourable boarding impacts in the Bight, western Tasman and waters of west/southwest WA. Marginal to unfavourable conditions for land ops due to flooding over central and southern Qld, much of NSW and parts of Vic.

REMARKS:
Following feedback from NORCOM please note the following changes:
1) Christmas Island area is defined as within 50 nm of Xmas Island.
2) The standard Navy/Douglas sea scale is now being used for sea states.
3) The Northern Sector has been removed as it is largely covered by the Western, Central and Eastern sectors.
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Australian Government Bureau of Meteorology
Defence Meteorological Support Unit
Ph: 1800 203 860, Email:dmsu@bom.gov.au

Daily Weather Brief for HQ Northern Command
Issued at 1823Z on the 14/12/2010 [0523 on the 15/12/2010 LOCAL]
Based on situation Wednesday 15/12/2010.

Synoptic Overview for Northern Area (including Christmas Island):
A developing monsoon trough lies through the Indian Ocean from a low south of CI through the Timor Sea. The trough continues eastwards through northern Top End and extends into the eastern Arafura Sea and northern Gulf. The low located south/southeast of CI may develop into a tropical cyclone Thursday or Friday and move slowly towards the south southeast.

Current Weather Impact - Northern Aust:
Fresh to strong W/NW winds Xmas Island sector. Gusts up to 35 knots with thunderstorm activity. Monsoon trough drifting slowly south during the week causing increasing monsoonal showers, rain and storms about Christmas Island, Western and Central regions and leading to frequent low cloud, low visibility and possible localised flooding.

Weather Impact Matrix:
Refer to www.bom.gov.au/defence/norcom/norcom_wx.shtml

Christmas Island (CI) Region (conditions on Wed-Sat):
Unfavourable conditions for most marine and aviation operations due low visibility and broken to overcast cloud in frequent showers and rain as well as occasional thunderstorms. Unfavourable boarding conditions.

Western (conditions on Wed-Sat):
Unfavourable conditions for marine and aviation visibilities due frequent showers and rain as well as occasional thunderstorms. Marginal boarding Fri conditions tending unfavourable Sat. Marginal conditions developing for land ops due localised flooding.

Central (conditions on Wed-Sat):
Unfavourable conditions for marine and aviation visibilities esp afternoon/overnight due to scattered showers and frequent thunderstorms with embedded rain areas. Marginal boarding conditions from Fri. Marginal conditions for land ops due to localised flooding over northern Top End.

Eastern (conditions on Wed-Sat):
Marginal conditions for marine and aviation visibilities due to scattered showers and thunderstorms, particularly over land during afternoons and nights. Marginal conditions for land ops due to localised flooding over Cape York.

Southern Sector (conditions on Wed-Sat): [Impact on operations for areas south of 25S]
Cold fronts crossing the Bight with unfavourable boarding impacts in the Bight, western Tasman and waters of west/southwest WA. Marginal to unfavourable conditions for land ops due to flooding over central and southern Qld, much of NSW and parts of Vic.

REMARKS:
Following feedback from NORCOM please note the following changes:

1) Christmas Island area is defined as within 50 nm of Xmas Island.
2) The standard Navy/Douglas sea scale is now being used for sea states.
3) The Northern Sector has been removed as it is largely covered by the Western, Central and Eastern sectors.
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Daily Weather Brief for HQ Northern Command
Issued at 1332Z on the 15/12/2010 [0032 on the 16/12/2010 LOCAL]
Based on situation Thursday 16/12/2010.

Synoptic Overview for Northern Area (including Christmas Island):
A monsoon trough extends over the Indian Ocean south of Xmas Island to a low northwest of Exmouth and along the northern Australian coast. This monsoon trough will continue to develop and move south over northern Australia. The low northwest of Exmouth has a moderate chance of developing into a tropical cyclone and is more likely to drift south and slowly fill over the weekend.

Weather Impact Matrix:
Refer to www.bom.gov.au/defence/norcom/norcom_wx.shtml

Christmas Island (CI) Region (conditions on Thu-Sun):
Unfavourable conditions for most marine and aviation operations due low visibility and broken to overcast cloud in frequent showers and rain as well as occasional thunderstorms. Unfavourable boarding conditions due sea states 4/5.

Western (conditions on Thu-Sun):
Unfavourable conditions for marine and aviation visibilities due frequent showers and rain as well as occasional thunderstorms. Marginal boarding conditions due sea states 3/4, unfavourable boarding conditions with sea states 4/5 west of 122E, becoming unfavourable throughout on Saturday but easing to marginal throughout on Sunday. Marginal conditions developing for land ops due localised flooding.

Central (conditions on Thu-Sun):
Unfavourable conditions for marine and aviation visibilities esp afternoon/overnight due to scattered showers and frequent thunderstorms with embedded rain areas. Marginal boarding conditions due sea state 3. Marginal conditions for land ops due to localised flooding over northern Top End.

Eastern (conditions on Thu-Sun):
Marginal conditions for marine and aviation visibilities due to scattered showers and thunderstorms, particularly over land during afternoons and nights. Marginal conditions for land ops due to localised flooding over Cape York.

Southern Sector (conditions on Thu-Sun): [Impact on operations for areas south of 25S]
Complex low well south of Vic for much of period producing unfavourable conditions for most operations. Unfavourable conditions over WA west coast and adjacent Indian Ocean. Marginal to unfavourable conditions over Tasman Sea due low. Conditions southwest of WA tending favourable as high moves over that area. Marginal to unfavourable conditions for land ops due to flooding over central and southern Qld, much of NSW and parts of Vic.

REMARKS:
Following feedback from NORCOM please note the following changes:
1) Christmas Island area is defined as within 50 nm of Xmas Island.
2) The standard Navy/Douglas sea scale is now being used for sea states.

3) The Northern Sector has been removed as it is largely covered by the Western, Central and Eastern sectors.
FOR MORE INFORMATION CALL DMSU 1800 203 860 OR GO TO
http://www.bom.gov.au/defence

IDJ25049
Australian Government Bureau of Meteorology
Defence Meteorological Support Unit
Ph: 1800 203 860, Email:dmsu@bom.gov.au

Daily Weather Brief for HQ Northern Command
Issued at 1236Z on the 16/12/2010 [2336 on the 16/12/2010 LOCAL]
Based on situation Friday 17/12/2010.

Synoptic Overview for Northern Area (including Christmas Island):
A monsoon trough extends over the Indian Ocean south of Xmas Island to a low northwest of Exmouth and along the northern Australian coast. This monsoon trough will continue to develop and move south over northern Australia. The low northwest of Exmouth has a low chance of developing into a tropical cyclone.

Weather Impact Matrix:
Refer to www.bom.gov.au/defence/norcom/norcom_wx.shtml

Christmas Island (CI) Region (conditions on Fri-Mon):
Unfavourable conditions through to Sunday for most marine and aviation operations due low visibility and broken to overcast cloud in frequent showers and rain as well as occasional thunderstorms. Unfavourable boarding conditions due sea states 3/4. Conditions easing Monday as sea state drops to 3 and Thunderstorms become isolated.

Western (conditions on Fri-Mon):
Unfavourable conditions for marine and aviation visibilities due frequent showers and rain as well as occasional thunderstorms. Marginal boarding conditions due sea states 3/4, unfavourable boarding conditions with sea states 4/5 west of 122E, becoming unfavourable throughout on Saturday but easing to marginal throughout on Sunday. Marginal conditions developing for land ops due localised flooding.

Central (conditions on Fri-Mon):
Unfavourable conditions for marine and aviation visibilities esp afternoon/overnight due to scattered showers and frequent thunderstorms with embedded rain areas. Marginal boarding conditions due sea state 3 easing to favourable on Saturday. Marginal conditions for land ops due to localised flooding over northern Top End.

Eastern (conditions on Fri-Mon):
Marginal conditions for marine and aviation visibilities due to scattered showers and thunderstorms, particularly over land during afternoons and nights. Marginal conditions for land ops due to localised flooding over Cape York.

Southern Sector (conditions on Fri-Mon): [Impact on operations for areas south of 25S]
Complex low well south of Vic for much of period producing unfavourable conditions for most operations. Unfavourable conditions over WA west coast and adjacent Indian Ocean. Marginal to unfavourable conditions over Tasman Sea due low. Conditions southwest of WA tending favourable as high moves over that area. Marginal to unfavourable conditions for land ops due to flooding over central and southern Qld, much of NSW and parts of Vic.

REMARKS:
Following feedback from NORCOM please note the following changes:
1) Christmas Island area is defined as within 50 nm of Xmas Island.

2) The standard Navy/Douglas sea scale is now being used for sea states.
3) The Northern Sector has been removed as it is largely covered by the Western, Central and Eastern sectors.
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Daily Weather Brief for HQ Northern Command
Issued at 1353Z on the 17/12/2010 [0053 on the 18/12/2010 LOCAL]
Based on situation Saturday 18/12/2010.

Synoptic Overview for Northern Area (including Christmas Island):
A monsoon trough extends over the Indian Ocean south of Xmas Island to a low to the northwest of WA and across northern Australia.

Weather Impact Matrix:
Refer to www.bom.gov.au/defence/norcom/norcom_wx.shtml

Christmas Island (CI) Region (conditions on Sat-Tue):
Unfavourable for marine visibility and aviation due to frequent thunderstorms, widespread showers, rain areas and broken cloud below 2000ft. Unfavourable for all operations due to sea state 4, easing to become marginal for all operations due to sea state 3 from Sunday.

Western (conditions on Sat-Tue):
Unfavourable for marine visibility and aviation due to frequent thunderstorms, widespread showers, rain areas and broken cloud below 2000ft. Unfavourable for all operations due to sea state 4, easing to become marginal for all operations due to sea state 3 from Monday. Marginal conditions for land ops due localised flooding.

Central (conditions on Sat-Tue):
Unfavourable for marine visibility and aviation due to frequent thunderstorms, widespread showers, rain areas and broken cloud below 2000ft. Marginal for all operations due to sea state 3. Marginal conditions for land ops due localised flooding.

Eastern (conditions on Sat-Tue):
Marginal for marine visibility and aviation due to occasional thunderstorms and scattered showers. Unfavourable for aviation due to areas of broken low cloud below 2000ft. Marginal conditions for land ops due to localised flooding.

Southern Sector (conditions on Sat-Tue): [Impact on operations for areas south of 25S]
Unfavourable conditions in the eastern Bight and southern Tasman Sea due to sea states 4/5 in the vicinity of a low close to Tasmania. Unfavourable conditions developing along the west coast of WA due to sea state 4/5 and widespread showers and thunderstorms in the vicinity of the low off the northwest coast moving southwards.

REMARKS:
Following feedback from NORCOM please note the following changes:
1) Christmas Island area is defined as within 50 nm of Xmas Island.
2) The standard Navy/Douglas sea scale is now being used for sea states.
3) The Northern Sector has been removed as it is largely covered by the Western, Central and Eastern sectors.
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Daily Weather Brief for HQ Northern Command
Issued at 0237Z on the 18/12/2010 [1337 on the 18/12/2010 LOCAL]
Based on situation Saturday 18/12/2010.

Synoptic Overview for Northern Area (including Christmas Island):
A monsoon trough extends over the Indian Ocean south of Xmas Island to a low to the northwest of WA and across northern Australia.

Weather Impact Matrix:
Refer to www.bom.gov.au/defence/norcom/norcom_wx.shtml

Christmas Island (CI) Region (conditions on Sat-Tue):
Unfavourable for marine visibility and aviation due to frequent thunderstorms, widespread showers, rain areas and broken cloud below 2000ft. Unfavourable for boarding operations due to sea state 4, easing to become marginal due to sea state 3 from Sunday.

Western (conditions on Sat-Tue):
Unfavourable for marine visibility and aviation due to frequent thunderstorms, widespread showers, rain areas and broken cloud below 2000ft. Unfavourable for boarding operations due to sea state 4, easing to become marginal due to sea state 3 from Monday. Marginal conditions for land ops due localised flooding.

Central (conditions on Sat-Tue):
Unfavourable for marine visibility and aviation due to frequent thunderstorms, widespread showers, rain areas and broken cloud below 2000ft. Marginal for boarding due to sea state 3. Marginal conditions for land ops due localised flooding.

Eastern (conditions on Sat-Tue):
Marginal for marine visibility and aviation due to occasional thunderstorms and scattered showers. Unfavourable for aviation due to areas of broken low cloud below 2000ft. Marginal conditions for land ops due to localised flooding.

Southern Sector (conditions on Sat-Tue): [Impact on operations for areas south of 25S]
Unfavourable conditions in the eastern Bight and southern Tasman Sea due to sea states 4/5 in the vicinity of a low close to Tasmania. Unfavourable conditions developing along the west coast of WA due to sea state 4/5 and widespread showers and thunderstorms in the vicinity of the low off the northwest coast moving southwards.

REMARKS:
Following feedback from NORCOM please note the following changes:
1) Christmas Island area is defined as within 50 nm of Xmas Island.
2) The standard Navy/Douglas sea scale is now being used for sea states.
3) The Northern Sector has been removed as it is largely covered by the Western, Central and Eastern sectors.
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Daily Weather Brief for HQ Northern Command
Issued at 1307Z on the 18/12/2010 [0007 on the 19/12/2010 LOCAL]
Based on situation Saturday 18/12/2010.

Synoptic Overview for Northern Area (including Christmas Island):
A monsoon trough extends over the Indian Ocean south of Xmas Island to a low to the northwest of WA and across northern Australia.

Weather Impact Matrix:
Refer to www.bom.gov.au/defence/norcom/norcom_wx.shtml

Christmas Island (CI) Region (conditions on Sat-Tue):
Marginal for marine visibility and aviation due to occasional thunderstorms, scattered showers and broken cloud below 2000ft. Marginal for boarding operations due to sea state 3, easing to become favourable from Monday.

Western (conditions on Sat-Tue):
Unfavourable for marine visibility and aviation due to frequent thunderstorms, widespread showers, rain areas and areas of broken cloud below 800ft. Marginal for boarding due to sea state 3. Marginal conditions for land ops due localised flooding.

Central (conditions on Sat-Tue):
Unfavourable for marine visibility and aviation due to frequent thunderstorms, widespread showers, rain areas and areas of broken cloud below 800ft. Marginal for boarding due to sea state 3 from Tuesday. Marginal conditions for land ops due localised flooding.

Eastern (conditions on Sat-Tue):
Marginal for marine visibility and aviation due to occasional thunderstorms and scattered showers and areas of broken low cloud below 2000ft. From Monday conditions becoming unfavourable for marine visibility and aviation due to frequent thunderstorms and widespread showers and areas of broken low cloud below 800ft. Marginal conditions for land ops due to localised flooding.

Southern Sector (conditions on Sat-Tue): [Impact on operations for areas south of 25S]
Unfavourable conditions in the eastern Bight and southern Tasman Sea due to sea states 4-6 in the vicinity of a low close to Tasmania. Unfavourable conditions developing along the west coast of WA due to sea state 4/5 and widespread showers and thunderstorms in the vicinity of the low off the northwest coast moving southwards.

REMARKS:
Following feedback from NORCOM please note the following changes:
1) Christmas Island area is defined as within 50 nm of Xmas Island.
2) The standard Navy/Douglas sea scale is now being used for sea states.
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Appendix K: Beaufort Wind Scale

Beaufort scale number	Descriptive term	Wind Speed (km/h)*	Wind Speed (knots)	Wave Height (m)**	Description on Land	Description at Sea
0	Calm	0	0	0	Smoke rises vertically	Sea like a mirror.
1	Light air	1 - 5	1 - 3	0.1 (0.1)	Wind direction shown by smoke-drift but not by wind-vanes.	Ripples with the appearance of scales are formed but without foam crests.
2	Light breeze	6 - 11	4 - 6	0.2 (0.3)	Wind felt on face; leaves rustle; ordinary vanes moved by wind.	Small wavelets, ripples formed but do not break: A glassy appearance maintained.
3	Gentle breeze	12 - 19	7 - 10	0.6 (1.0)	Leaves, small twigs in constant motion; wind extends light flag.	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.
4	Moderate winds	20 - 29	11-16	1.0 (1.5)	Raises dust and loose paper; small branches are moved.	Small waves, becoming longer; fairly frequent white horses.
5	Fresh winds	30 - 39	17-21	2.0 (2.5)	Small trees in leaf begin to sway; crested wavelets form on inland waters	Moderate waves, taking a more pronounced long form; many white horses are formed, a chance of some spray
6	Strong winds	40 - 50	22-27	3.0 (4.0)	Large branches in motion; whistling heard in telephone wires; umbrellas used with difficulty.	Large waves begin to form; white foam crests are more extensive with probably some spray
7	Near gale	51 - 62	28-33	4.0 (5.5)	Whole trees in motion; inconvenience felt when walking against wind.	Sea heaps up and white foam from breaking waves begins to be blown in streaks along direction of wind.
8	Gale	63 - 75	34-40	5.5 (7.5)	Twigs break off trees; walking generally impeded.	Moderately high waves of greater length; edges of crests begin to break into spindrift; foam is blown in well-marked streaks along the direction of the wind.
9	Strong gale	76 - 87	41-47	7.0 (10.0)	Slight structural damage occurs, roofing dislodged; larger branches may break.	High waves; dense streaks of foam; crests of waves begin to topple, tumble and roll over; spray may affect visibility.
10	Storm	88 - 102	48-55	9.0 (12.5)	Seldom experienced inland; trees uprooted; considerable structural damage.	Very high waves with long overhanging crests; the resulting foam in great patches is blown in dense white streaks; the surface of the sea takes on a white appearance; tumbling of the sea becomes heavy, visibility affected.
11	Violent storm	103 -117	56-63	11.5 (16.0)	Very rarely experienced - widespread damage	Exceptionally high waves; small and medium sized ships occasionally lost from view behind waves; the sea is completely covered with long white patches of foam; the edges of wave crests are blown into froth, visibility affected.
12+	Hurricane	118 or more	64 or more	14 or greater		The air is filled with foam and spray. Sea completely white with driving spray; visibility very seriously affected

* Scale is based on mean wind speeds, not wind gusts. ** Probable wave heights with probable maximum wave heights in brackets.