



AERODROME CYCLONE PLAN 2023

VERSION 4.7 – OCTOBER 2023

Contents

Disclaimer

Darwin International Airport has adopted a six-stage alert system for the purpose of classifying responses to a cyclone. Notification of the activation and declaration of cyclone alert stages is provided only to inform recipients of the DIA Aerodrome Cyclone Committee's own responses to the cyclone activity.

You are advised NOT TO RELY on the contents of this Plan or any Situation Report in making any decision regarding personal safety or business operations. We recommend that you directly monitor Bureau of Meteorology advice and Northern Territory Government public messages when making any decision about personal safety or business operations.

Darwin International Airport Pty Ltd and the Airport Cyclone Committee disclaim all liability to any person howsoever arising, done or omitted to be done, in reliance to any degree upon this Plan or portions of it.

Plan is uncontrolled if printed.

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RECORD OF AMENDMENTS

Amendment No.	Date of Amendment	Page No.	Description
Re – issue	October 2006	All	Manual Reissued
1	2 November 2006	22	Fax number change, Australian Quarantine & Inspection Service
2	October 2007	All	Annual Manual Review Version 2.0
3	September 2008	All	2008 Manual Review Version 3.0
4	December 2008	25 – 27	Aerodrome Cyclone Committee List
5	December 2008	29 – 32	Appendix D
6	December 2009	All	Cyclone Plan reissued
7	December 2009	26 – 27	Aerodrome Cyclone Committee List
8	April 2011	3 -5, 11,12, 26-28, 32	Record of Amendments, effective pages, JAFS procedure, Aerodrome Cyclone Committee contact lists
9	November 2011	All	Cyclone Plan reissued
10	November 2012	All	Cyclone Plan reissued – Version 3.5
11	October 2013	All	Review and Reissue – Version 3.6
12	November 2013	11, 25	Update of contact details – Group Leader Transport Group
13	November 2014	All	Review and Reissue – Version 3.8
14	November 2015	All	Review, update of committee member contact details and distribution list. Version 3.9
15	November 2016	All	Review and Reissue – Version 4.0
16	November 2017	All	Reformat, review and reissue – Version 4.1
17	November 2018	All	Review and reissue – Version 4.2

18	November 2019	All	Review and reissue, contact list amendments – Version 4.3
19	November 2020	All	Review and reissue, Stage 1 wording, Stage 7 removed (Stage 6 in line with NT Govt), contact list amendments – Version 4.4
20	October 2021	All	Airline and contacts amendments. Version 4.5
21	October 2022	All	Review Contact List, Update Roles
22	October 2023	All	Review Contact List, Update Roles

ABBREVIATIONS

ABF	Australian Border Force
ACC	Airport Co-ordination Centre
ADM	Airport Duty Manager
AOO	Airside Operations Officer
AFP	Australian Federal Police
DAWE	Department of Agriculture, Water and the Environment
AsA	Airservices Australia
ARFF	Aviation Rescue and Fire Fighting
ATC	Air Traffic Control (RAAF)
BoM	Bureau of Meteorology
CEO	Chief Executive Officer
DIA	Darwin International Airport
DIPL	Department of Infrastructure, Planning and Logistics
EOC	Emergency Operations Centre for Region 1 Cyclone Counter Disaster Planning Committee
KMH	Kilometres per hour
KTS	Knots
NOTAM	Notice to Airmen
NT	Northern Territory
NTES	Northern Territory Emergency Service
RAAF	Royal Australian Air Force
SMS	Short Message Service
TAOO	Terminal & Airside Operations Officer
TC	Tropical Cyclone
WebEOC	Critical Incident Management System

1. BACKGROUND

- 1.1 The Commonwealth is the owner of Section 5729 Hundred of Bagot Volume 717 Folio 233 ("the land") and has leased the whole of the Land to Darwin International Airport Pty Ltd ("DIA").
- 1.2 DIA operates an airport from the Land.
- 1.3 The Land is located in a cyclone prone area. Tropical cyclones occur most frequently in the Northern Territory during the period November to April. The intensity and movement of these cyclones is unpredictable. Once formed, a cyclone must be regarded as a potential threat to personnel and property in the Darwin area.
- 1.4 DIA has prepared the Darwin International Airport Aerodrome Emergency Plan ("the Emergency Plan") addressing the procedures to be followed in the event of an emergency on the Land. DIA has prepared a sub-plan to the Emergency Plan, the Darwin International Airport Aerodrome Cyclone Plan ("Cyclone Plan"), to more particularly address the procedures to be followed in the event of a cyclone in order to:
 - a) Protect the safety of staff, passengers and visitors to the airport;
 - b) Minimise damage; and
 - c) Maintain and restore operational capability.
- 1.5 The Cyclone Plan is activated on receipt of advice that a Cyclone Watch been issued by the Bureau of Meteorology ("BoM"). The Cyclone Plan has procedures which follow the Cyclone Counter Disaster Plan, Region 1 (DIA is part of the Transport Group).
- 1.6 The Cyclone Plan details the actions and procedures for cyclone preparation and for recovery post cyclone; and details the procedures for convening the Aerodrome Cyclone Committee. In consultation with Controller, Region 1 Counter Disaster Committee (EOC) the Aerodrome Cyclone Committee will activate the various stages of the Cyclone Plan in response to the potential threat of cyclone.
- 1.7 The Cyclone Plan does not exonerate the need for each airline, operator, tenant and contractor to have in place their own cyclone plans and such cyclone plans must particularly provide for a plan of action in the event BoM issues a Cyclone or Airport Warning (see clause 4.4). DIA has the right to request and receive any individual cyclone plans at any time.

NTES has in place the Cyclone Counter Disaster Plan – Region 1 and airlines, operators, tenants and contractors should consult and adhere to this plan in establishing their own cyclone plans.

- 1.8 The Cyclone Plan does not exonerate the need for guests, employees, visitors and invitees on the Land during the Cyclone Season (November to April) to pay particular attention to weather forecasts and reports and upon declaration of a Cyclone Watch to;
- a) Follow the instructions of local authorities and DIA;
 - b) Monitor the media for the latest development; and
 - c) Evaluate and make arrangements for own personal safety in the event a Cyclone Warning is declared.
- 1.9 In the event of a cyclone being declared and a possible threat to the Land – airlines, operators, tenants and contractors are fully responsible for the safety and security of their personnel, aircraft, vehicles, buildings, plant, equipment and materials located on the Land. They are to ensure that at all stages of alert, appropriate action is taken to remove and secure their property to safeguard it from damage and prevent it from causing damage to other property and their staff are not put at risk.
- 1.10 Military operations are not subject to this Cyclone Plan.

2. DIA AERODROME CYCLONE COMMITTEE

2.1 The DIA Head of Airside (or their delegate) will initially be notified by either:

- a) Group Leader – Transport Group;
BoM App or Website

of the impending cyclone alert phase.
(refer Standard Operating Procedure at Appendix C).

2.2 When Darwin is included in a Watch Zone, Stage 1 (Cyclone Watch) of the Aerodrome Cyclone Alert Stages is declared and DIA will advise the Aerodrome Cyclone Committee by email.

2.3 **When Stage 2 (Cyclone Warning) of the Aerodrome Cyclone Alert Stages is declared, DIA will convene an Aerodrome Cyclone Committee Meeting** (“the Committee”) and the Committee shall consist of at least 1 representative of the following core members:

- DIA
- AsA – ARFF
- ABF / DoA
- AFP
- Aircraft operators, ground handling companies and cargo handlers including:
 - Qantas Airways Limited, Jetstar, Virgin Australia, Airnorth, Cobham, Nexus, Bonza and Singapore Airlines
 - Menzies Aviation, Dnata and Westonia Aviation
 - Qantas Freight
- RAAF – ATC and 13 SQN
- Airport refuelling operators
- NT Department of Health
- Other airport tenants as deemed necessary

The DIA representative (usually the DIA Head of Airside; Airside Manager or Safety & Standards Manager) shall be the Chair of the Cyclone Committee.

2.4 The Committee, through the Chair of the Committee, will receive progressive advice from Transport Group and/ or BoM regarding the cyclone development and if necessary liaise directly with the Duty Forecaster, BoM obtaining updated cyclone activity information (refer standard operating procedure at Appendix C).

- 2.5 The DIA Head of Airside (or their delegate) will ensure that the CEO of DIA, the NTES, the Transport & Stores Liaison Group and the Controller, Region 1 Counter Disaster Committee ("EOC") are kept fully informed of the status of the airport (this will be undertaken either by direct phone liaison or via fax of the standard cyclone alert stage activation sheets). DIA will upload Situation Reports into WebEOC.
- 2.6 Provided it is safe to do so, the head of the Committee may, at various stages of the cyclone development, nominate a Committee representative to attend the Berrimah EOC to provide direct communication between the EOC and the Committee.
- 2.7 As long as a Cyclone Warning is current the Committee will meet at intervals notified by the head of the Committee and continue to provide information on the status of aerodrome operations to airport operators and tenants.
- 2.8 In consultation with the Controller, Region 1 Counter Disaster Committee (EOC), the Committee will activate the various stages of the Cyclone Plan in response to the potential threat of a cyclone including the timings for any withdrawal of civil services.
- 2.9 The Committee will re-convene as soon as practicable following the declaration of Stage 6 to be briefed on the status of the aerodrome; determine the priorities and actions required to so that airport operations are able to recommence as soon as possible. Representatives of the Committee shall comply with the direction of the head of Committee.
- 2.10 In consultation with the EOC issue of LOCAL ALL CLEAR the Committee will establish the timing for recommencing airport operations. With a severe cyclone this may extend to several days.
- 2.11 The DIA Head of Airside (or their delegate) will issue media statements regarding the status of the aerodrome through the EOC. Airlines shall, at all times, remain responsible for providing flight details to the public.

3. ALERT PHASES – OVERVIEW

3.1 DIA has adopted a six (6) stage alert system for the purpose of ensuring a graduated response to a developing cyclone threat.

3.2 Table 1 – “Airport Cyclone Alert Stages” - indicates when each stage is initiated.

Notes:

- 1) All wind speeds are quoted in knots (kt) (km/h shown in brackets).**
- 2) Table 3 (Wind Speed Conversions) under Section 3.4 of Appendix A, provides wind speed conversions from knots (kt) to km/h and vice versa.**
- 3) The minimum and maximum times quoted in Table 1 (Aerodrome Cyclone Alert Stages) are to be used as a guide depending on the cyclone category – e.g. Category 1 uses minimum lead times while Category 3 and above use maximum lead times.**

Table 1 - Aerodrome Cyclone Alert Stages.	
Stage	When Initiated
1.	On announcement by the BoM of a Cyclone Watch, i.e. winds above gale force (32 knots/ 60 kmh or greater) are 24-48 hours away.
2.	On announcement by the BoM of a Cyclone Warning, i.e. winds above gale force (32 knots/60 kmh or greater) within 24 hours.
3.	Cyclone Warning current. As a general guide, this stage will be declared when wind gusts in excess of 48 knots (90 km/h) are 6-12 hours away.
4.	As a general guide, this stage will be declared when gusts greater than 48 knots (90 km/h) are 3-6 hours away.
5.	Gale force winds have commenced i.e. sustained 32 kt (60 km/h) with gusts to and above 48 knots (90 km/h).
6.	Gale force winds have passed, Local All Clear.

4. NOTIFICATION OF CYCLONE ALERT STAGES

- 4.1 Cyclone advice will be notified to the DIA Head of Airside (or their delegate) by the Group Leader, Transport.

Cyclone advices will be emailed or phoned to the Committee – from:

Group Leader Transport Group
Department of Infrastructure, Planning and Logistics
Passenger Transport Division
Mobile: 0488 936 480

The Group Leader Transport Group will communicate with the head of the Committee as to the committee's progress through the six (6) **Aerodrome Cyclone Alert Stages**

Cyclone information is also publicly available from the BoM at www.bom.gov.au or Smartphone App and NT Government emergency information at www.securent.nt.gov.au

- 4.2 Stages 1 and 2 of the **Aerodrome Cyclone Alert Stages** will be automatically initiated on announcement of a Cyclone Watch or a Cyclone Warning respectively.
- 4.3 Stages 3 and 4 of the **Aerodrome Cyclone Alert Stages** will be declared by the DIA Head of Airside (or their delegate), in consultation and agreement with members of the Committee and following consultation with the EOC regarding the status of the Cyclone Counter Disaster Plan – Region 1. The timing of these declarations and phases will be aligned to those issued by the EOC.
- 4.4 At any time during Stages 3 and 4 of the **Aerodrome Cyclone Alert Stages**, the BoM may issue an **Airport Warning**. Airport Warnings are issued when:
- Wind gust = >42kt (80 km/h)
 - Sustained winds = > 32kt (60 km/h)

Airport Warnings will be treated in accordance with individual cyclone plans.

- 4.5 DIA will advise airport tenants, where possible, via email, SMS and/or WhatsApp when Stages 1 to 4 of the **Aerodrome Cyclone Alert Stages** are activated (see Appendix D for a list of airport tenants and others who will receive this advice.)
- 4.6 There will be no formal notification of Stages 5 or 6 of the **Aerodrome Cyclone Alert Stages** from DIA to airport tenants. The BoM will issue normal cyclone warnings through the normal media outlets during these stages.
- 4.7 At Stage 6 of the **Aerodrome Cyclone Alert Stages**, DIA will contact members of the Committee (refer to Appendix C) by whatever means are available to convene a meeting to begin the recovery response; clean-up and recommencing airport operations as soon as possible.
- 4.8 Flood Warnings.

The Group Leader Transport Group will forward advices to the Committee on flood warnings, forecasts and road access conditions, as they become known.

Flood Warnings / Alerts issued by the BoM can also be found at www.bom.gov.au

NT Government emergency information is available at www.securent.nt.gov.au

5. STAGE 1

Note: In the following Aerodrome Cyclone Alert Stages, the minimum and maximum times are to be used as a guide depending on the cyclone category – e.g. Category 1 uses minimum lead times whilst Category 3 and above use maximum lead times.

- 5.1 Initiated on an announcement by the BoM of a Cyclone Watch, i.e. sustained winds above gale force (32 kt (60 km/h) or greater) are 24-48 hours away.
- 5.2 Airport operators and tenants should commence initial preparation for a cyclone and consider the following actions:
- Conducting a review of individual cyclone procedures
 - Securing or removing non-essential equipment from open areas
 - Checking emergency stores and equipment (fuel, generators, radios, medical supplies etc.)

6. STAGE 2

- 6.1 Initiated on announcement by the BoM of a Cyclone Warning, i.e. sustained winds above gale force (32 kt (60 km/h) or greater) within 24 hours.

NOTE: Joint Aviation Fuelling Services (JAFS) and Viva Energy Australia advise that overwing and ladder assisted refuelling will cease when the sustained wind velocity on the airport reaches 30 KNOTS (55 KPH) or when refuelling operators consider themselves at risk from flying debris.

All other refuelling will cease when the sustained wind velocity on the airport reaches 34 KNOTS (62 KPH).

- 6.2 Airport operators and tenants should complete the initial preparation for a cyclone and:
- Implement individual cyclone plans and procedures
 - Finish securing or removing non-essential equipment from open areas
 - Continue to monitor cyclone advices from the BoM
 - Light aircraft owners/operators should consider relocating, storing and tying down of aircraft.
- 6.3 DIA will contact Committee members to convene at the Airport Co-ordination Centre, (Connellan Meeting Room, Ground Floor adjacent Gate A - refer to Appendix C).
- 6.4 Cyclone warning advices will be issued every three hours. When a cyclone is under radar surveillance close to the coast and poses a severe threat, hourly advices will be issued.

7. STAGE 3

- 7.1 Cyclone Warning current. Stage 3 of the Aerodrome Cyclone Alert Stages will be declared:
- a. when high wind gusts are greater than 48 kt (90 km/h), 6-12 hours away; or
 - b. Stage 3 under the Cyclone Counter Disaster Plan - Region 1 is declared by NTES
- **NOTE: Joint Aviation Fuelling Services (JAFS) and Viva Energy Australia advise that overwing and ladder assisted refuelling will cease when the sustained wind velocity on the airport reaches 30 KNOTS (55 KPH) or when refuelling operators consider themselves at risk from flying debris.**
 - **All other refuelling will cease when the sustained wind velocity on the airport reaches 34 KNOTS (62 KPH).**
- 7.2 The Committee will activate Stage 3 of the Aerodrome Cyclone Alert Stage based on weather forecast advice received from the BoM and following advice received from the Controller, Region 1 Counter Disaster Committee (EOC) informing the committee Stage 3 of the Cyclone Counter Disaster Plan has been activated.
- 7.3 Airport operators and tenants should start preparing for the possible activation of Stage 4 of the Aerodrome Cyclone Alert Stages and withdrawal of services from the aerodrome and commence partial shutdown of their facilities and take the following actions:
- Move external equipment to safe areas, secure contents of premises, important documents, back-up computers etc.
 - Consider sending non-essential staff home.
 - Complete securing or relocation of light aircraft.
 - Airport operators and tenants through their Committee representatives need to keep the Committee informed of the status of their own operations, in particular expected timings for ceasing operations and/or services.
- 7.4 The Committee will ensure airline operators are kept informed of the current status and airlines should consider the implication for flights (in particular long haul) scheduled to operate in the period leading up to the possible declaration of Stage 4 Aerodrome Cyclone Alert Stages (approx 3 – 6 hours) and the estimated timing for the possible withdrawal of services from the aerodrome to civil operations following the declaration of Stage 4 of the Aerodrome Cyclone Plan.
- 7.5 DIA will commence a partial shutdown of facilities during Stage 3 – this will include shutdown and secure Bays 1, 2 and 5 Apron Drive Aerobridges.

- 7.6 Airlines intending to operate during this period will need to plan for the possibility for aircraft to be dispatched prior to the arrival of forecast winds and that inbound aircraft may be required to be diverted.
- 7.7 The Committee will also ensure that airlines are kept informed of the status of aerodrome facilities and the availability of airport facilities and services e.g. status of refuelling operations (Note JAFS will have ceased operations when sustained winds reach 34 knots), and on airport government agencies such as AFP, DAWR and ABF) and the availability of ground transport to/from the airport. Note the airport will have commenced partial shutdown during Stage 3 and some facilities such as aerobridges may not be available.
- 7.8 The Committee will ensure that passengers and visitors to the terminal are kept informed of the airport status and of the current Cyclone Warnings and the possible activation of Stage 4 of the Aerodrome Cyclone plan and closure of the terminal within 3 to 6 hours, and the need to ensure that they have made arrangements for transport to homes or an approved cyclone shelter if required (note the terminal building is a Class B building and is not a designated Public Cyclone Shelter). Passengers will be required to check with their airline for updated airline information.
- 7.9 The Committee and airline operators will need to consider the availability of ground transport for passengers and visitors within the airport terminal when determining the timing to cease operations.
- 7.10 BoM may move to hourly issue of warnings during Stage 3 of the Aerodrome Cyclone Alert Stages, in which case hourly monitoring of forecasts will be necessary.
- 7.11 DIA Head of Airside (or their delegate) will consider available space for storage of essential equipment in consultation with airport operators and tenants.

8. STAGE 4

- 8.1 Go to Shelter. Stage 4 of the Aerodrome Cyclone Alert Stages will be declared:
- a. when gales with gusts greater than 48 kt (90 km/h) are 3-6 hours away; or
 - b. Stage 4 under the Cyclone Counter Disaster Plan - Region 1 is declared by NTES whichever happens sooner.
- 8.2 The Committee will activate Stage 4 of the Aerodrome Cyclone Alert Stage based on weather forecast advice received from the BoM and following advice received from the Controller Region 1 Counter Disaster Committee (EOC) informing the committee Stage 4 of the Cyclone Counter Disaster Plan has been activated.
- 8.3 Activation of Stage 4 of the Aerodrome Cyclone Alert Stages includes the completion of shut down of airport facilities and withdrawal of civil services.
- 8.4 In consultation with the Committee, civil airlines, ATC and the Controller Region 1 Counter Disaster Committee (EOC) DIA and ATC will issue a **NOTAM** advising of non-availability of certain airport facilities (from time / date) for civil aircraft.
- 8.5 Civil airlines, ARFFS, ATC, and other airport operators, tenants and agencies must complete shutdown of operations as soon as practicable after the declaration of Stage 4 of the Aerodrome Cyclone Alert Stages, all civil operations must cease in accordance with the NOTAM advice. This must include:
- Securing of Ground Servicing Equipment including, mobile stairs, steps and platforms; and rolling stock (dollies and barrows e.g. connected in trains), including deploying brake systems and stabilisers deployed and/or lay down on sides; use of safety chains and securing them to the DIA concrete blocks provided may also be considered;
 - Tie down and securing of light aircraft
- 8.6 The ABF, DIBP and DAWR will cease operations upon notification of Stage 4 of the Aerodrome Cyclone Alert Stages. The AFP will provide a reduced service and support security during the shutdown of airport facilities as it moves to closure. Normal operations of the AFP will cease.
- 8.7 Public transport will cease following activation of Stage 4 of the Region 1 Cyclone Counter Disaster Plan.
- 8.8 The Committee will continue to liaise with the Controller of the Region 1 Counter Disaster Planning Committee via the committee representative at the EOC to ensure that the EOC is fully informed of the status of the aerodrome including details of any planned aircraft movements.
- 8.9 The Committee will liaise with airline operators advising of the current status of the Cyclone Counter Disaster Plan - Region 1 and request advice regarding the status of their operations. Airline operators should have planned operations so that they are able to cease operations following the declaration of Stage 4 of the Cyclone Counter Disaster Plan - Region 1 and the subsequent activation of Stage 4 of the Aerodrome Cyclone Alert Stages.

9. STAGE 5

- 9.1 Gale Force winds have commenced and sustained winds greater than 32kts (60 km/h) with gusts to 48 kts (90 km/h). **Airport civil operations withdrawn.**

10. STAGE 6

- 10.1 **Local all clear.** Gale force winds have passed Darwin, although a tropical cyclone warning may still exist (Stage 2).
- 10.2 The Committee will:
- Assess the current status of the aerodrome and determine priorities and actions required to restore operations to the airfield and facilities; and staffing of facilities;
 - Ensure Safety checks and inspections of terminal and airside (runways, taxiways and aprons) facilities are being undertaken; and
 - Security measures in accordance with the *Aviation Transport Security Act 2004* have been reinstated.
- 10.3 In consideration of weather forecast advice from the BoM and in consultation with the Controller Region 1 Counter Disaster Planning Committee (EOC) the Committee will advise airport operators and tenants when the airport operations will recommence.
- The Airport will **resume services** as soon as is safe to do so. Timings will be dependent on the severity of the cyclone, a **minimum of 3-6 hours** should be expected before operations can recommence. With a severe cyclone this may extend to several days.
- 10.4 **DIA NOTAM lifted.**

APPENDIX A – BoM TROPICAL CYCLONE WARNING SYSTEM

1. Tropical Cyclone Warning System

1.1 Tropical Cyclone Advises are issued by the BoM Tropical Cyclone Warning Centre (TCWC) and broadcast by radio and television stations.

1.1.1 Information is also available directly from the Bureau by:

Telephone

Cyclone advice 1300-659-211

Internet

<http://www.bom.gov.au>

www.securent.nt.gov.au

ABC Emergency website

1.1.2 Information is also available from the NT Police, Fire and Emergency Internet site www.pfes.nt.gov.au / [media centre](#).

1.2 A **cyclone threat map**, besides showing the past cyclone track, also shows distinctive colours or shades to depict watch and warning zone areas of:

- *Very destructive winds*: hurricane force winds with gusts exceeding 90 kt (170 km/h) (associated with severe cyclones – Cat. 3 and above).
- *Destructive winds*: gusts greater than 65 kt (120 km/h) (equivalent to storm force).
- *Gales*: gusts exceeding 48 kt (90 km/h). With these winds (shown by the light mauve shade below), people have difficulty moving about in open areas.

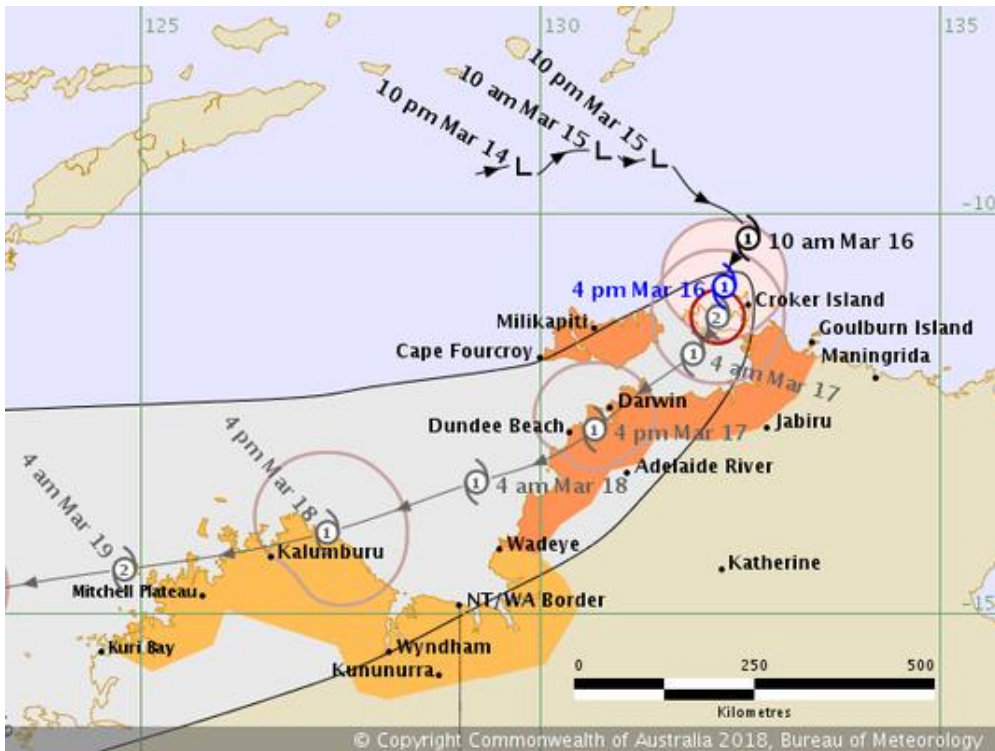


Figure 1 Cyclone Marcus Track Map 2018

FIGURE 1 – CYCLONE THREAT MAP – EXAMPLE ONLY

- 1.3 A **cyclone outlook** is issued about mid-afternoon each day during the cyclone season providing an assessment (low / medium / high) of the likelihood of an existing cyclone entering the Northern Region (including the Timor and Arafura Seas and the Gulf of Carpentaria) or a new cyclone forming in the Northern Region within 72 hours.
- 1.4 A **cyclone watch** is issued if a cyclone or potential cyclone exists and there are strong indications that winds above gale force will affect coastal or island communities within 24 to 48 hours of issue.
- 1.5 Advices contain a brief estimate of the cyclone’s location, intensity, severity category, movement and identifies the coastal area that could be affected.
- 1.6 Watch advices are renewed every six hours.
- 1.7 A **cyclone warning** is issued as soon as gales or stronger winds are expected to affect coastal or island communities with 24 hours. It identifies the communities being threatened and contains the cyclone’s name, its location, intensity (including maximum wind gusts and its severity category) and its movement.

- 1.8 As well as indicating expected maximum wind gusts near the centre of the cyclone, warning messages will usually indicate the strength of the maximum wind gusts expected over particular areas in the following terms:
- Gales with gusts to 48 kt (90 km/h).
 - Destructive wind with gusts above 65 kt (120 km/h).
 - Very destructive winds with gusts above 90 kt (170 km/h).
- 1.9 Forecasts of heavy rainfall, flooding and abnormally high tides are included when necessary.
- 1.10 Communities under threat are also advised to take precautions necessary to safeguard their lives and property.
- 1.11 Radio and television stations may be authorised to use the cyclone siren if *destructive* winds are expected within 12 hours.
- 1.12 Cyclone warnings are issued every three hours. When a cyclone is under radar surveillance close to the coast and poses a severe threat, hourly advices are issued.
- 1.13 A tropical cyclone advice is prefixed "FLASH" when it is the first warning to a community not previously alerted by a cyclone watch. It is also issued when major changes are made to the previous movement towards the coast or rapid intensification.

2. Storm Tides

- 2.1 The warning may mention above normal tides. The effect in terms of the risk of flooding at the coast will be described as follows:
- Abnormally high tides could cause minor flooding
 - Abnormally high tides could cause serious flooding
 - Dangerously high tides could cause extensive flooding.
- 2.2 If evacuation of waterfront areas becomes necessary, additional messages from police or local government authorities will advise who should move and will give details of evacuation shelters.

3. Cyclone Severity

An estimate of cyclone severity is included in the advices in accordance with Table 2, BoM – Cyclone Categories, below.

Table 2 – Bureau of Meteorology – Cyclone Categories	
Category / Max Wind Gust	Typical Effects
Category 1 < 65 kt <125 km/h	Negligible house damage. Damage to some crops, trees and caravans. Craft may drag moorings.
Category 2 66 – 90 kt 125 – 170 km/h	Minor house damage. Significant damage to signs, trees and caravans. Heavy damage to some crops. Risk of power failure. Small craft may break moorings.
Category 3 91 – 120 kt 170 – 225 km/h	Some roof and structural damage. Some caravans destroyed. Power failure likely.
Category 4 121 – 150 kt 225– 280 km/h	Significant roofing loss and structural damage. Many caravans destroyed and blown away. Dangerous airborne debris. Widespread power failures.
Category 5 > 151 kt > 280 km/h	Extremely dangerous with widespread destruction.

- 3.2 The severity in the zone of maximum winds and therefore the effects of such winds at individual locations may not be exactly as described in the accompanying table. Refer to a cyclone threat map for a more accurate guide of winds at specific locations.
- 3.3 It should also be noted that the category does not refer to storm tides; if a storm tide is expected it will be mentioned separately in the cyclone warning.

3.4 Advice on wind speeds is included in Table 3, Wind Speed Conversions, below.

Table 3 – Wind Speed Conversions
(Note: Values rounded to nearest whole number)

km / h	kt
10	5
20	11
30	16
40	22
50	27
60	32
70	38
80	43
90	49
100	54
110	59
120	65
130	70
140	76
150	81
160	86
170	92
180	97
190	103
200	108
210	113
220	119
230	124
240	130
250	135
260	140
270	146
280	151

kt	km /h
10	19
20	37
30	56
40	74
50	93
60	111
70	130
80	148
90	167
100	185
110	204
120	222
130	241
140	259
150	278
160	296
170	315
180	333
190	352
200	370
210	389
220	407
230	426
240	444
250	463
260	482
270	500
280	519

APPENDIX B – TROPICAL CYCLONE PLAN LINKAGES

Bureau of Meteorology	Darwin International Airport
Tropical Cyclone Outlook 3 day outlook	
Watch Phase TC Advices every 6 hours Gales (sustained winds = >32 kt (60 km/h)) >24 <48 hours	Stage 1 Sustained winds = >32 kt (60 km/h) >24 <48 hours Advice to Cyclone Committee
Warning Phase TC Advices every 3 hours or hourly Sustained winds = >32 kt (60 km/h) < 24 hours	Stage 2 Sustained winds = >32 kt (60 km/h) <24 hours DIA Convenes Cyclone Committee
Airport Warnings a) Wind gusts = >42 kt (80 km/h) b) Sustained winds = >32 kt (60 km/h)	Stage 3 Wind gusts = >48 kt (90 km/h) 6-12 hours Stage 4 Wind gusts = >48 kt (90 km/h) 3-6 hours Stage 5 Sustained winds = >32 kt (90 km/h) have commenced with Wind gusts = >48 kt (90 km/h)
All Clear No warnings locally TC no longer a threat, gale force winds have passed	Stage 6 Sustained winds now <32 kt (60 km/h)

NOTE 1: Sustained winds refer to 10 minute mean winds.

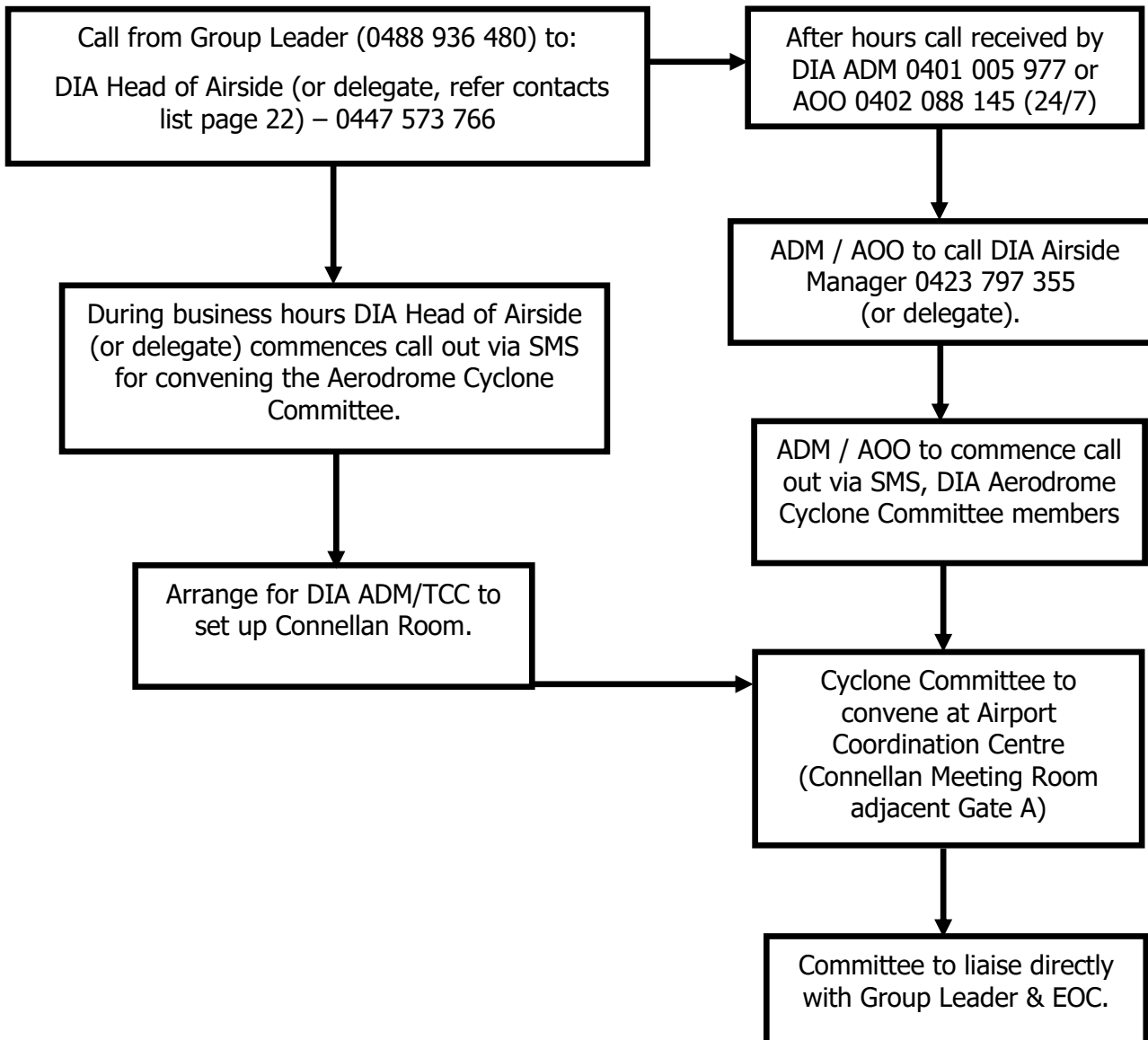
NOTE 2: Wind gusts refer to 3 second wind gusts.

APPENDIX C – STANDARD OPERATING PROCEDURES FOR AERODROME CYCLONE COMMITTEE

1. Call received from – Group Leader Transport Group
Notifying the DIA Head of Airside (or delegate) of impending alert stage prior to the status report being faxed.
2. If advice is received out of hours the DIA ADM or AOO to contact DIA Head of Airside (or delegate).
3. DIA Head of Airside (or delegate) to contact the Committee members to convene at the Airport Coordination Centre (Connellan Meeting Room, Ground Floor adjacent Gate A - see attached list).
4. Members of the committee will be able to attend remotely via conference call facilities – details to be provided when committee is to be convened.
5. The Chair of Committee DIA Head of Airside (or delegate) to liaise with RAAF ATC and RAAF Base Command Post.
6. Group Leader Transport and/or Executive Officer NTES to continue to contact DIA at the various alert stages.
7. DIA Head of Airside (or delegate) will repeat steps 2 & 3 as required.
8. DIA Head of Airside (or delegate) shall liaise directly with Region 1, Cyclone Counter Disaster Committee EOC.

BUSINESS HOURS

AFTER HOURS



APPENDIX D - AERODROME CYCLONE COMMITTEE CONTACTS LIST

Name	Organisation	Work Number	Mobile
Tony Edmondstone ADG CEO	ADG	8920 1801	0402 088 140
Rob Porter EGM Airports	ADG	8920 1832	0417 048 295
Glen Dodds Head of Airside Operations	ADG		0447 572 766
Melanie Cobbin Head of Terminal & Customer Experience	ADG		0421 601 461
Airport Duty Manager	DIA	8020 1886	0401 005 977
Mike Clancy Airside Manager	DIA	8920 1904	0423 797 355
Bob Calaby Safety & Standards Manager	DIA	8920 1851	0402 088 163
Van Nguyen Compliance Coordinator – Airside	DIA		0473 957 650
Neil Shay Security Manager	ADG		0457 143 337
Ian Pask Head of Electrical	ADG	8920 1849	0402 088 149
Airside Operations Officer	DIA	8920 1852	0402 088 145
George Cheriyan	Senior Operations Coordinator		0419 864 223
TBA Head of Facilities and Assets	ADG	8920 1839	0438 874 804
Sandee Taylor Head of Property Management	ADG		0447 000 332

Steve Caldwell Health & Safety Manager	ADG		0402 782 375
Julie Whiting Environment & Sustainability Manager	ADG	8920 1820	0402 389 998
Jordan Schrapel Commercial Transport Manager	DIA		0402 088 164

Name	Organisation	Work Number	Mobile
FLT CDR 452 SQN DAR FLT SQNLDR Marty Ferguson	RAAF ATC	7929 9500	0408 892 476
Cyclone Officer 452 SQN DAR FLT FLTLT Stephen Root	RAAF ATC	7929 4816	0400 304 957
XO 13 SQN SQNLDR Andrew Miller	RAAF	8923 5001	0407 615 214
BASO FLTLT Jay Murray	RAAF	8923 5055	0409 669 416
Martin Kay	Airservices Australia	8920 2960	0408 873 644
Chris Martin	Airservices ARFF	8920 4820	0427 596 723
SUPT	AFP	131AFP	
AFP Supervisor	AFP	131AFP	0439 046 647
Steve Warfe	Daifuku	8920 1875	0488 908 542
Dean Procter	Trident Services Australia (Security)		0400 945 990
Duty Supervisor	Trident Services Australia		0455 857 152
Airport Duty Manager	QANTAS	8920 4688	Auto divert
Duty Manager Qantas IOC	QANTAS	02 9691 1902	
Lyle Taylor	QANTAS		0412 840 306
Steve Rigney	QANTAS		0419 036 502
Alan Drysdale	QANTAS		0423 846 804
Line Maintenance Duty Engineer	QANTAS	08 8920 4655	Auto divert

Name	Organisation	Work Number	Mobile
Senior Base Engineer DRW	Cobham	8920 2610 or 8920 2611	0411 289 461
Braden Blennerhassett Head of Turboprop Operations	Leidos Australia		0408 069 140
Adelaide OCC Emergency Reporting Line	Leidos Australia	1800 429 999	1800 429 999
Airport Ground Services Manager	Airnorth	8920 4006	0439 234 014
Annette Wallace Safety and Compliance Manager	Airnorth	8920 4017	0439 234 017
David Hancock General Manager Engineering	Airnorth	8920 4076	0457 905 276
Chee Kean Yong Manager NT	Singapore Airlines		0412 659 985
Airport Duty Phone	Singapore Airlines	8927 8336	0478 085 258
Kym Bailey Operations Manager	Nexus Airlines		0473 496 500
Kat Pendrigh Manager Airport Operations and Performance	Bonza		0421 898 184
Axel Richardson	Westonia Aviation		0450 947 204

Name	Organisation	Work Number	Mobile
Nahmen Pakeha	Menzies Aviation		0413 384 229
Andrew Sketchley	JAFS Refuellers	8945 2655	0410 060 730
Shane Lambert	Viva Energy Australia	8923 3310	0402 452 486
Alistair Gray	Qantas Freight		0451 966 542
Steve Georgiou	Star Aviation		0447 713 320
Tony Shread	SSP		0416 816 062
Graham Kirwin	Spotless		0423 452 985
Duty Supervisor	Australian Border Force	8920 2551	0409 915 048
Commander	ABF	8980 6603	
Sam Mahoney	DAWE		0417 666 648
Airport Duty Officer	DAWE	8998 4980	
Peter Ball	Aviation Safety Advisor CASA	8943 2988	0434 599 861
Vincent Tarrant	Wilson Security Precinct Services		0456 159 890
Duty Officer	Wilson Security Precinct Services		0419 309 367

External Cyclone Advisors

Name	Organisation	Work Number	Mobile
Cindy McDonald	Group Leader Transport DIPL		0488 936 480
Greg Turner	Deputy DIPL		0418 395 371

APPENDIX E – SITUATION REPORT TEMPLATE

SITUATION REPORT (SITREP) CYCLONE – Cyclone Warning - Tropical Low SITREP Number – Issued – Time/ Date

Authorised: Chair Cyclone Committee

Disclaimer

Darwin International Airport has adopted a six stage alert system for the purpose of classifying responses to a cyclone. Notification of the activation and declaration of cyclone alert stages is provided only to inform recipients of the DIA Aerodrome Cyclone Committee's own responses to the cyclone activity.

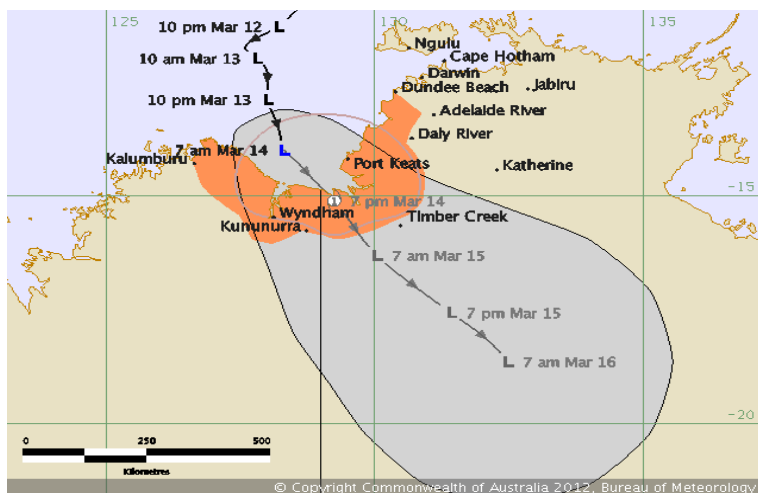
You are advised NOT TO RELY on the contents of this or any other Situation Report in making any decision regarding personal safety or business operations. Darwin International Airport cannot guarantee the delivery of future Situation Reports. We recommend that you directly monitor Bureau of Meteorology advice and Northern Territory Government public messages when making any decision about personal safety or business operations.

Darwin International Airport Pty Ltd and the Airport Cyclone Committee disclaim all liability to any person howsoever arising, done or omitted to be done, in reliance to any degree upon this plan or portions of it.

Situation

1. Activation Stage

2. Weather Conditions



3. Airside Operations

- Airlines
- Refuelling
- RAAF
- Air Traffic Control
- RAAF Base
- Airservices Australia ARFF/ Tech
- Others

4. Landside Operations

- Public Transport

5. Roads and Traffic

- Airport Precinct roads
- Public and Staff Car Parks

6. Terminal Operations

7. Commonwealth Agencies

8. Infrastructure/Assets

9. Actions to date (what has been done) Actions to be completed (what will be done)

10. Issue(s)