International Civil Aviation Organization

Thirteenth Meeting of the Air Traffic Management Sub-Group (ATM/SG/13) of APANPIRG

Singapore, 25 – 29 August 2025

Agenda Item 6: ATM Coordination (Meetings, Route Development, Contingency Planning)

TROPICAL CYCLONE ALFRED – CONTINGENCY ACTIVATION

(Presented by Australia/Airservices)

SUMMARY

This paper presents the Contingency Activation as result of Tropical Cyclone Alfred which impacted the Brisbane Air Traffic Control Center, Brisbane Control Tower and Gold Coast Control Tower. The paper illustrates the process taken to prepare for a full evacuation of Air Traffic Control facilities as Tropical Cyclone Alfred moved towards the Gold Coast and Brisbane City.

1. INTRODUCTION

1.1 Severe Tropical Cyclone (TC) Alfred formed off the north-east Coast of Australia in late February 2025 and then moved slowly south, where its intensity fluctuated between Category 1 and Category 4 (**Figure 1**). On the 4 March 2025, TC Alfred changed its trajectory and started moving due west towards Brisbane and the Gold Coast, with heavy rain and strong winds impacting parts of the Australian coast from the 5 March 2025. TC Alfred subsequently crossed the Australian coast, traversing the islands east of Brisbane on the evening of 8 March 2025.

1.2 "Alfred caused significant damage to southeast Queensland and northeastern New South Wales through damaging wind gusts, heavy rainfall with subsequent flooding impacts and severe coastal erosion of beaches" (Australia Government, Bureau of Meteorology). This did not cause significant impact or damage to our ATC or CNS facilities; however, it did hamper Air Traffic Controllers' ability to travel to work.

1.3 In anticipation of either a facility failure or the inability to have sufficient staff to provide published ATS, the Crisis Management Plan, National ATS Contingency Plan and Air Traffic Services Centre (ATSC) Contingency Plan, were enacted. Preparations were made to enact the ATS Disaster Recovery Plan should it be required.

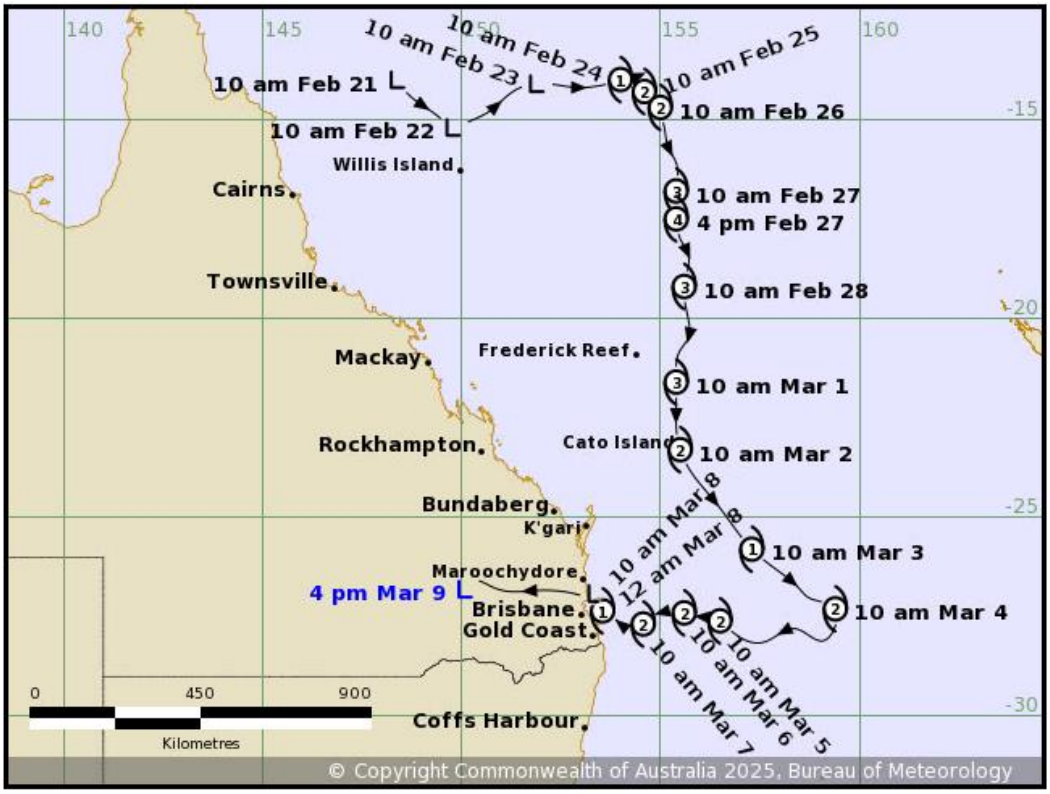

Figure 1: Tropical Cyclone Alfred

2. DISCUSSION

Contingency Airspace Volumes

2.1 Brisbane ATSC is located next to Brisbane Airport and provides HF communication services for both Brisbane and Melbourne FIRs, Enroute air traffic services for the Brisbane, Nauru and Honiara FIRs, and Approach services for the following airports:

a) Cairns;

b) Rockhampton;

c) Mackay;

d) Brisbane; and

e) Gold Coast.

2.2 The following ATC Towers were also subject to possible evacuation:

a) Brisbane;

b) Sunshine Coast;

c) Gold Coast; and

d) Archerfield.

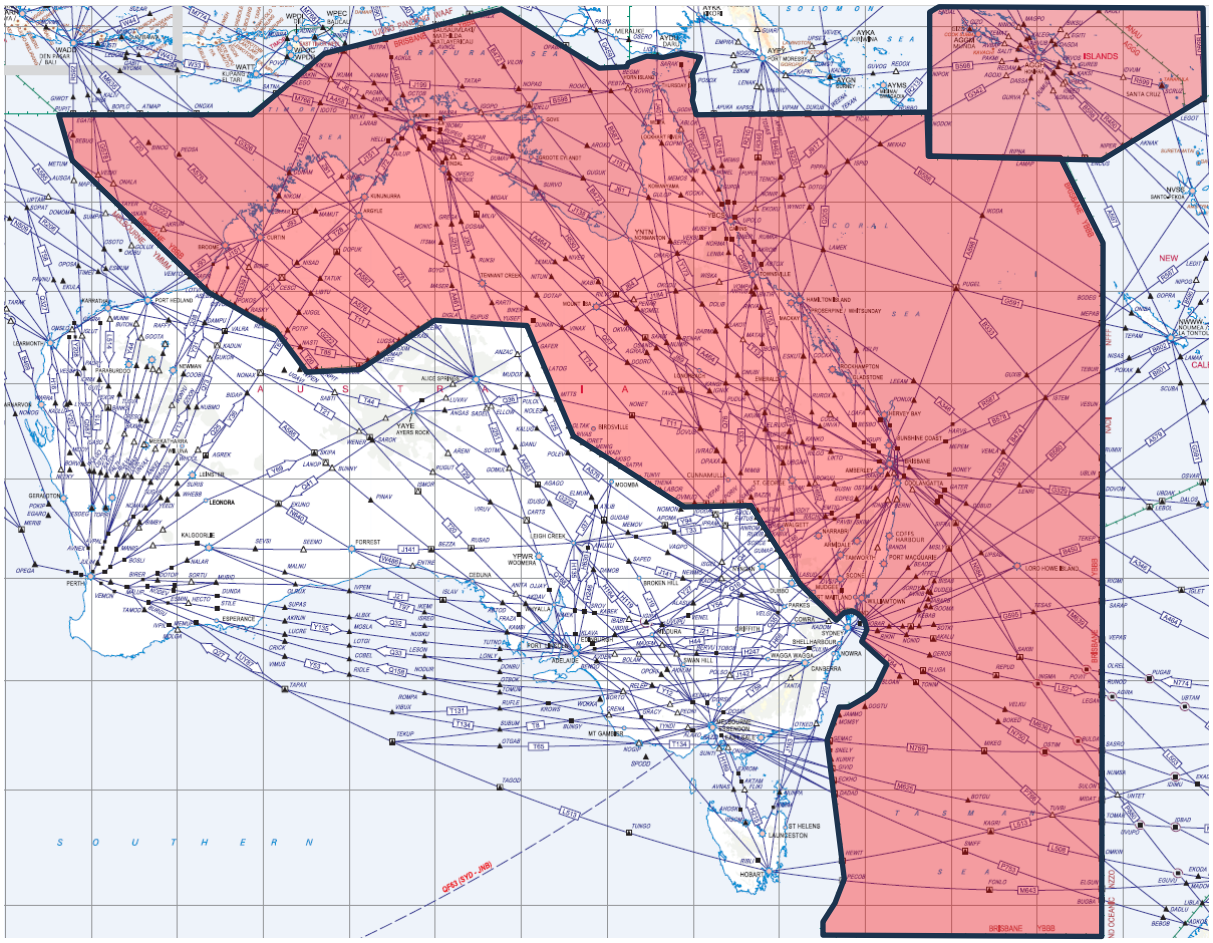

Figure 2: Brisbane FIR

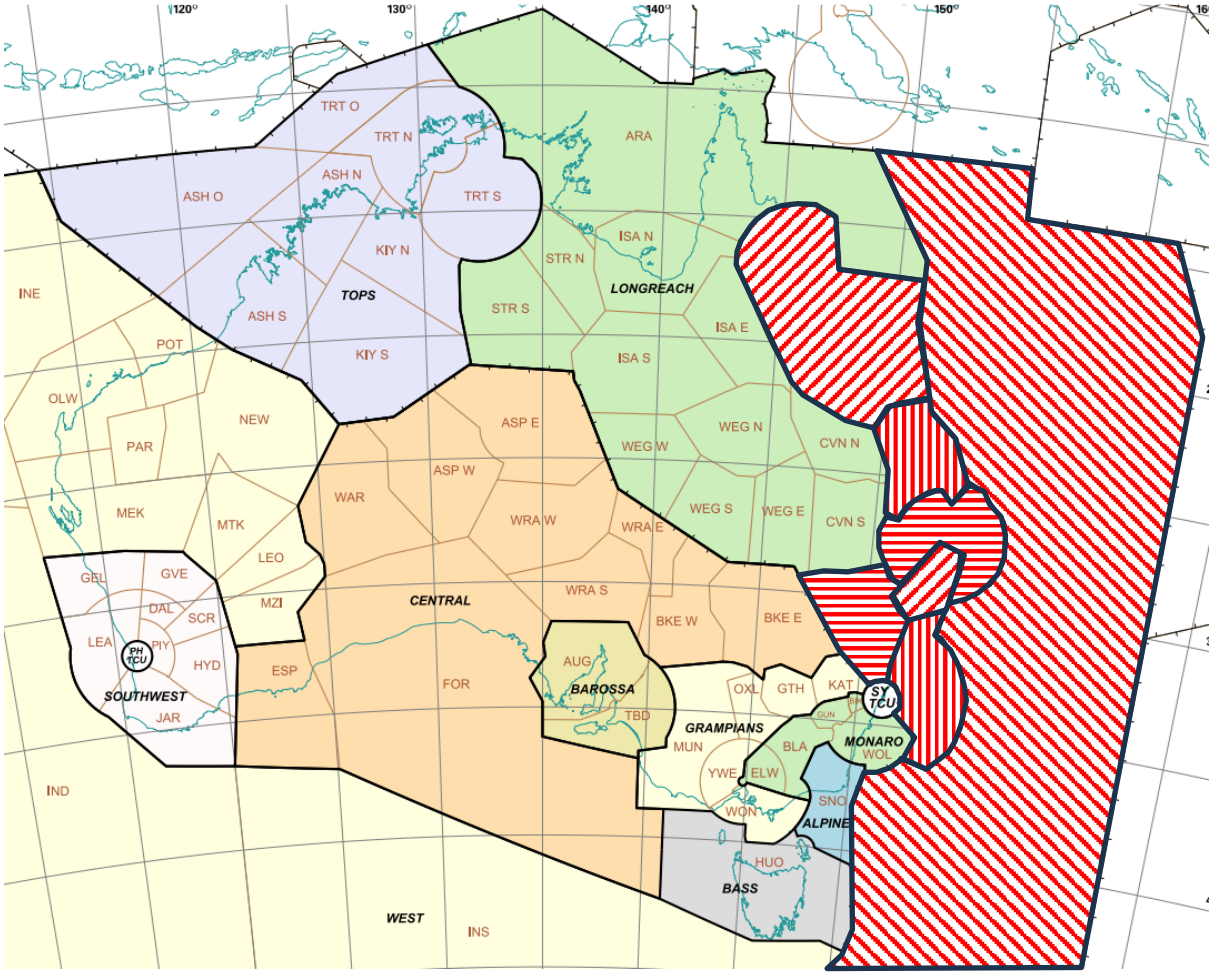

Figure 3: Affected Sector Volumes within the Brisbane FIR

Timeline of Events

2.3 The following is the timeline of key events in preparing for and enacting the ATS Contingency Plans:

a) 3 March 2025 – the Initial Assessment Team (IAT) was established after information was received that TC Alfred was forecast to travel west towards the Australian Coast.

b) 4 March 2025 – the Crisis Management Team (CMT) was established.

c) 5 March 2025 – Gold Coast and Archerfield Airports were closed by the Operator due to flooding.

d) Between 5 and 9 March 2025, eight Enroute Sectors and two TMA sectors activated Contingency Plans on fourteen separate occasions. Unit Specific Contingency Plans were enacted when insufficient staff numbers were available to provide ATS, e.g. staff were unable to travel to work due to accessibility issues, or their homes were directly impacted.

e) Planning took place for the possibility for the requirement to relocate some, or all, of the Brisbane ATS Capability to the Melbourne ATSC under the ATS Disaster Recovery Plan. The Melbourne Simulator and Test & Evaluation Platform were prepared to support Brisbane ATSC operations if required.

f) ICAO Asia/Pacific Regional Office was informed of possible evacuation of the Brisbane ATSC.

g) Neighboring ANSP's were informed of potential contingency within the adjoining Australian administered airspaces.

h) Aircraft from the US, Europe and Asia planned to avoid Brisbane FIR where possible. Some flights from the US and Pacific nations destined for Brisbane were cancelled.

i) 8 March 2025 – the TC crossed Moreton Island (approximately 40 km east of Brisbane Airport) where the TC was downgraded to a Low-Pressure System. The system was slow moving and produced heavy rainfall with wind gusts between 50-60 knots.

j) No evacuation of the Brisbane ATSC, Brisbane Tower, or Sunshine Coast Tower was required.

k) The Gold Coast Tower was evacuated due to strong winds; however, the airport was closed, prohibiting any operations.

Supporting actions

2.4 The CMT met between two and four times per day throughout the event, depending on requirements. These meetings facilitated the flow of information between representatives from the Bureau of Meteorology, Network Operations, ATM Operations, Technical Services, Security and Resilience, and Facility Management.

2.5 Twice daily industry briefings were held to support the flow of information through a whole-of-industry approach. Participants included international and domestic airlines, other aircraft operators such as emergency services, aerodrome operators, Bureau of Meteorology, and Defence Forces representatives.

2.6 Information presented at these briefings included: latest meteorological forecast, latest staffing forecast and contingency activation predictions, status of preparedness for evacuation of the ATSC, serviceability of CNS facilities and any predicted impacts, serviceability of aerodromes, and latest airline schedules.

Summary of Outcomes

2.6 Due to the location of the weather system, there was significant impact to international traffic over the Pacific Ocean and Tasman Sea between Australia and New Zealand, which resulted in numerous cancellations. Operations to and from Brisbane and Gold Coast Airports were also impacted by TC Alfred.

2.7 Given Australia's stable geological disposition, and normally benign weather conditions in Brisbane and Melbourne (where the Centres are located), events of this type are rare. The event validated the effectiveness of the contingency plans through a real scenario, not a test event, and preparedness measures such as CMT member training. It also provided some key learnings and opportunities for improvement.

2.8 The industry briefings served to emphasize how pivotal the role of an ANSP is during natural disaster events in facilitating a coordinated whole of industry response, and how effective, open and collaborative communication can minimize the impact of such events.

Lessons Learnt

2.9 Key improvement actions from the event:

a) the ATS Contingency and Disaster Recovery plans were primarily designed to address short notice, total outage situations and do not adequately consider scenarios where planning time is available, or a partially degraded service outcome is a possibility. Some important items for improvement are:

i) ensure skeleton staff requirements for critical functions are well understood;

ii) accommodation at the ATSC – provision of meal and sleeping facilities to accommodate skeleton staff are available;

iii) investigation of other accommodation options close to the ATSC; and

iv) consider cumulative ATC fatigue risk over the course of an extended natural disaster event due to non-normal work and sleep patterns potentially eroding Fatigue Risk Management System controls.

b) develop a comprehensive communications plan incorporating both internal and external communications to keep staff and stakeholders informed and up to date. The plan should consider any government emergency warnings and alternate communications mediums.

c) collate a central database for critical facility plans and specifications to enable rapid identify required information.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) recognize the significance of ATM contingency plans in ensuring the continued safety of air navigation during partial or total disruption of air traffic services;

c) encourage States/Administrations to establish, regularly update, and promulgate ATM contingency plans for managing the continuation of aircraft operations during contingency events; and

d) discuss any relevant matters as appropriate.

— END —