Australian Government
Civil Aviation Safety Authority

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# Preliminary Airspace Review of Darwin

September 2019

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| | | |
| | | |

# 1 Executive Summary

The *Airspace Act 2007* (Act)[1] provides the Civil Aviation Safety Authority (CASA) with authority to administer and regulate Australian-administered airspace and authorises CASA to undertake regular reviews of existing airspace arrangements.

The purpose of this review is to evaluate the current airspace arrangements and to ensure that the airspace surrounding Darwin Airport (Darwin) as per the parameters shown below within the scope, is fit for purpose.

The scope of this review assessed airspace within 40 Nautical Miles (NM) from Darwin from the surface up to 6,500 feet (FT) Above Mean Sea Level (AMSL).

A multifaceted approach was used in conducting this review, including quantitative and qualitative analysis consisting of:

- aerodrome traffic data
- airspace design
- Australian Transport Safety Bureau (ATSB) incident data
- stakeholder consultation.

The current indication's show that passenger numbers and aircraft movement are in a slight decline at Darwin. The current airport masterplan forecasting out to 2037 predicts growth. One area of growth at the airport is in the increasing numbers of military aircraft that are participating at each successive military exercise held in Darwin. From an operational perspective sectors of the controlled airspace steps are now due for a review. This is based on feedback from stakeholders that indicated aircraft standard descent profiles are not matching the profile of the control area (CTA) steps.

## 1.1 Summary of Conclusions

- Military aircraft movements are increasing, particularly during military exercises have an effect on civilian traffic and the current airspace capability.
- Changes appear to be required to the CTA steps in order to keep general aviation aircraft descent profiles contained within CTA.
- Adapt the Darwin, Area Navigation (RNAV)-Z 11 instrument approach to join into either a current or redesigned Standard Terminal Arrival Route (STAR).
- Continued education of foreign military aircrews regarding operations near uncontrolled civilian airfields.

## 1.2 Key Recommendations

The following recommendations are made:

**Recommendation 1:**

The Royal Australian Air Force (RAAF) should consider possible redesign of the CTA steps, as identified in consultation with relevant stakeholders.

**Recommendation 2:**

RAAF should consider any opportunities for better efficiencies applied to civilian traffic management particularly given the increasing number of military aircraft participating in local military exercises.

[1] A full list of acronyms and abbreviations used in this report can be found in Annex A.

**Recommendation 3:**
Briefing packages should be delivered to foreign military crews regarding the location of and the operation within proximity to local civil aerodromes.

**Recommendation 4:**
Airservices Australia should conduct a cost benefit analysis with regards to the RNAV-Z RWY 11 procedure being operationally available via a STAR.

**Recommendation 5:**
Stakeholders and Darwin ATC to discuss, with a view to formalise, the opportunity to implement a letter of agreement (LOA) that supports HEMS operations.

## 1.3 Key Observations

At the time of the review, the airspace classification is fit for purpose, a small number of issues should be considered, and if possible rectified, in order to enhance the services, based on the following information:

- Ten out of a total of eleven responses submitted to the CASA consultation hub with relation to this review stated in their opinion that the airspace is safe.
- One response indicated the airspace is both inefficient and not safe. The CASA consultation hub provides the stakeholder with an opportunity to add free text in order to elaborate on the identified issue. No information from this stakeholder was entered and hence no reasoning behind the response was supplied. Free text comments made regarding lack of efficiency by the stakeholder stated that in their opinion it is the air traffic controllers under training at Darwin to be the cause.
- During a meeting with the Senior Officers assigned to the air traffic control (ATC) of Darwin, the point was made that overall the controllers are largely happy with the current operation of civilian and military traffic management at Darwin.

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# 2 Introduction

The Office of Airspace Regulation (OAR) within the Civil Aviation Safety Authority (CASA) has carriage of the regulation to administer and regulate Australian-administered airspace, in accordance with section 11 of the *Airspace Act 2007* (Act). Section 12 of the Act requires CASA to foster both the efficient use of Australian-administered airspace and equitable access to that airspace for all users. CASA must also consider the capacity of Australian-administered airspace to accommodate changes to its use and national security. In exercising its powers and performing its functions, CASA must regard the safety of air navigation as the most important consideration.[2]

Section 3 of the Act states that 'the object of this Act is to ensure that Australian-administered airspace is administered and used safely, considering the following matters:

a. protection of the environment
b. efficient use of that airspace
c. equitable access to that airspace for all users of that airspace
d. national security.'

## 2.1 Overview of Australian Airspace

Australian airspace classifications accord with Annex 11 of the International Civil Aviation Organization (ICAO) and are described in the Australian Airspace Policy Statement (AAPS). Airspace is classified as Class A, C, D, E and G depending on the level of Air Traffic Service (ATS) required to best manage the traffic safely and effectively. Class B and Class F airspace are not currently utilised in Australia. The airspace classification determines the category of flights permitted, aircraft equipment requirements and the level of ATS provided. Annex B provides details of the classes of airspace used in Australia. Within this classification system aerodromes are either controlled (i.e. Class C or Class D) or non-controlled (Class G).

## 2.2 Purpose and Scope

The purpose of this review is to ensure that the airspace around Darwin Airport (Darwin) is fit for purpose.

The scope of the review includes:

- a risk assessment of the airspace within 40 nautical miles (NM) of Darwin from the surface up to 6,500 feet (FT) above mean sea level (AMSL)
- consultation with stakeholders to gather and validate data that will inform the airspace review
- review and update recommendations from the previous airspace review.

The scope of the review did not include on and off airport infrastructure developments that will not impact current or future airspace arrangement.

The review process included:

- stakeholder engagement via direct email as well as through the Northern Territory Regional Airspace and Procedures Advisory Committee (RAPAC)
- stakeholder feedback submitted through the CASA consultation hub
- direct stakeholder contact via meetings held at stakeholder locations
- recommendations from the previous review.

[2] Civil Aviation Act 1988, section 9A – Performance of Functions

## 2.3 Objective

The objective of this review was to examine the current airspace in order to ensure it is fit for purpose and that it will remain so. Current factors affecting the airport are the increasing aircraft numbers participating in the military exercises undertaken biennially, and to a lesser extent, the number of international airlines operating to Darwin has shown an increase over the last three years. The last review recommended to monitor the CTA steps and to ensure they remain appropriate for the area. It will also include:

- analysis of aircraft movement data
- analysis of the mix of aircraft operations in the area
- analysis of the current aircraft movement levels to determine the suitability of existing airspace
- analysis of the incidents and occurrences within the review area
- identification of threats or risks to the safety of operations within the airspace
- consultation and consideration of feedback from airspace users.

# 3 Aerodrome

Darwin is located six kilometres to the north east of Darwin city and is a joint military and civil use aerodrome. The civilian section is operated by Darwin International Airport Pty Ltd, with the military section operated by the RAAF Base Darwin.

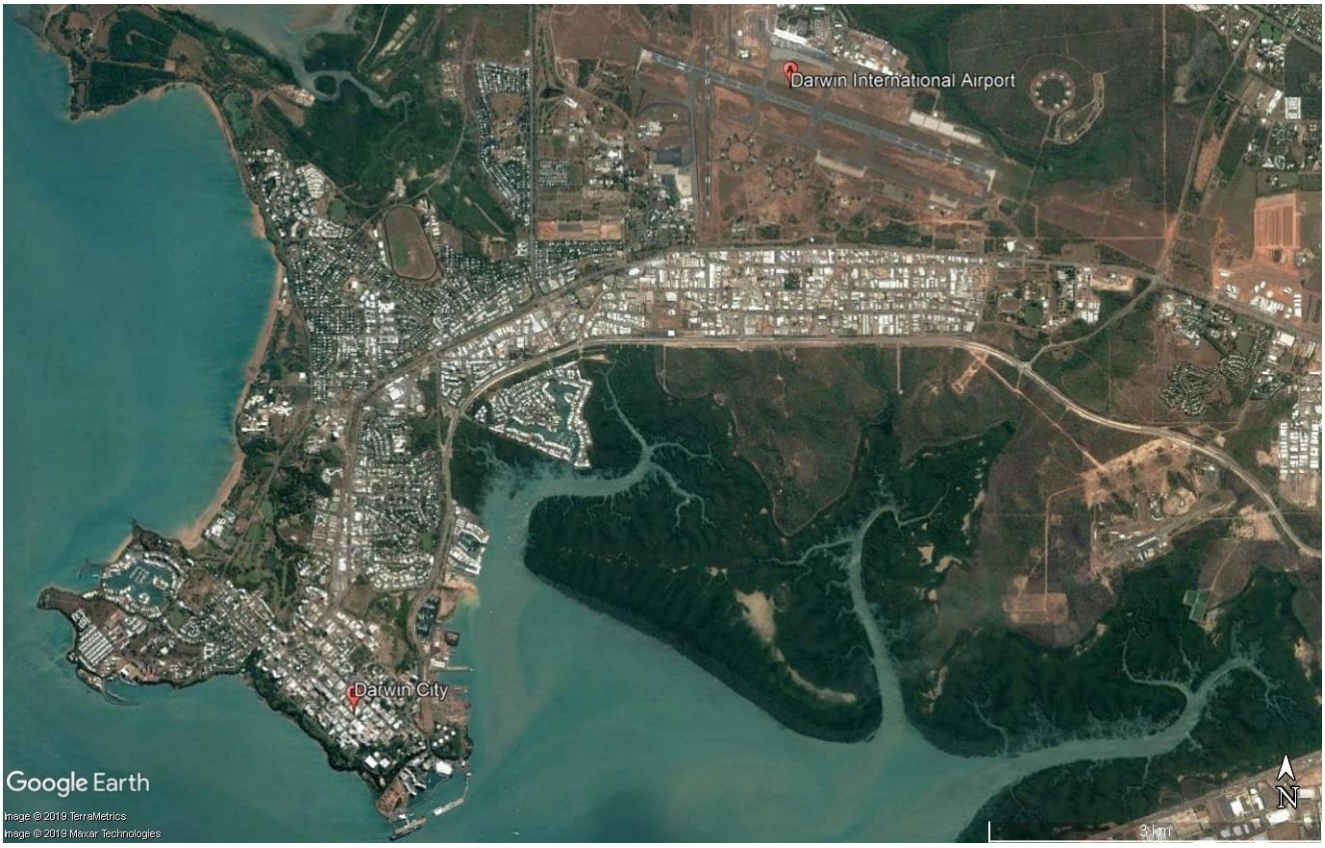


Figure 1 Darwin Airport, *Reference* Google Earth.

## 3.1 Terminal Instrument Flight Procedures

The instrument approaches available at Darwin airport include:

- Non Directional Beacon (NDB)
- Tactical Navigation (TACAN)
- Distance Measuring Equipment (DME)
- Very High Frequency (VHF) Omnidirectional Range (VOR)
- Area Navigation (RNAV)
- Instrument Landing System (ILS)

## 3.2 Aerodrome Facilities

Darwin airport has two sealed runways, see Figure 2.

**Runways:**

- **RWY 11 / 29**
  Grooved / sealed runway surface, 3,354 meters (M) long, 60M wide.
- **RWY 18 / 36**
  Sealed runway surface, 1,524M long, 30M wide.

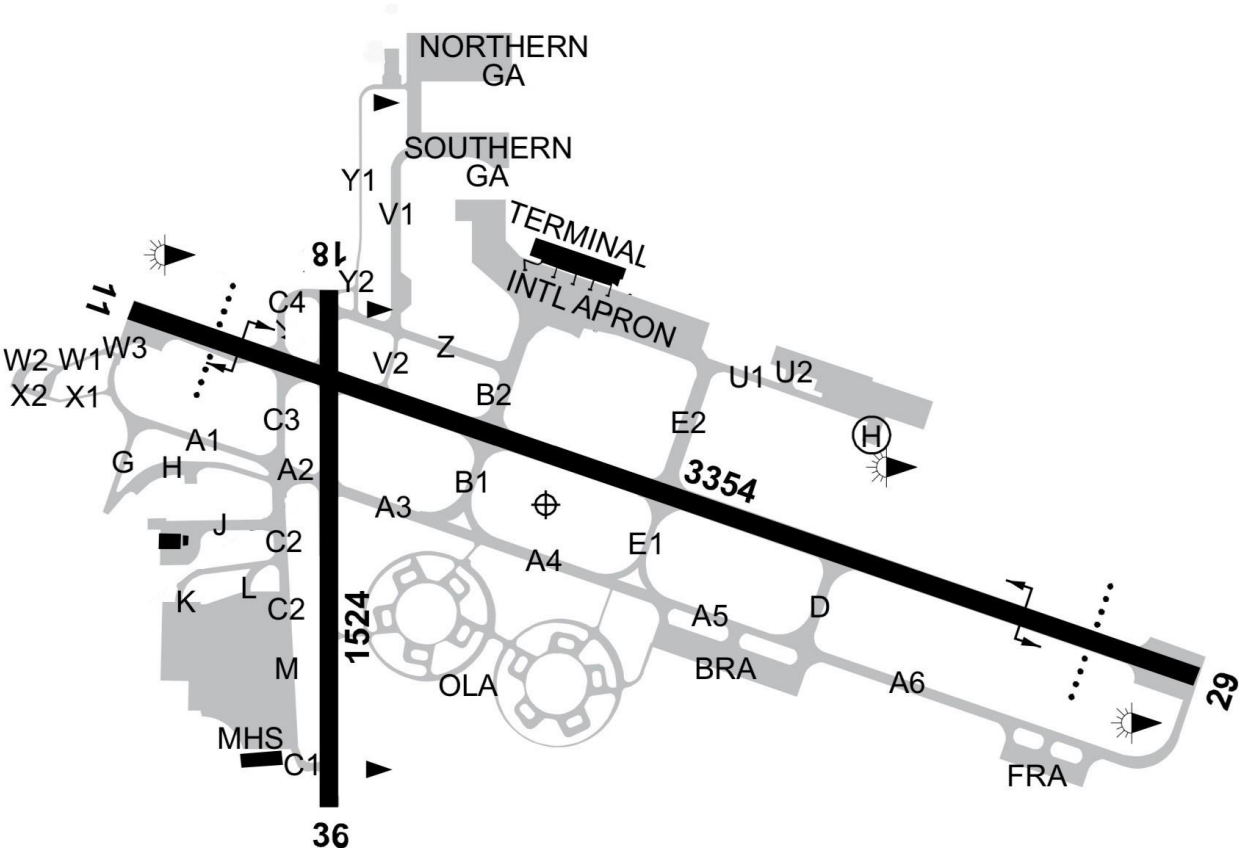


Figure 2: Extract of Darwin Airport layout, reference En Route Supplement Australia (ERSA) Effective 23rd May 2019.

## 3.3 Darwin Airport Masterplan

Darwin airport operates as a joint user facility between Darwin International Airport Pty Ltd (DIA) and the Department of Defence, Royal Australian Air Force (RAAF) Base Darwin. The DIA Masterplan was undertaken in 2017 and provides a 20 year scope to 2037. DIA projects that by 2037, passenger movements will have increased from 2 million passengers to almost 6 million passengers.

Domestic airfreight is estimated to increase as a direct result of anticipated increase in domestic airline movements as the airport continues to evolve. The masterplan[3] states that the airport was initially a hub for Jetstar services between Australia and South East Asia and it is now positioning itself as a hub for northern Australia.

General aviation movements are expected to grow from 74,000 movements per year to over 100,000 movements per year by 2037.

# 4 Airspace

## 4.1 Airspace Structure

Darwin Air Traffic Control is serviced in accordance with Class C[4] airspace requirements and is serviced by RAAF personnel. Darwin Approach control is also controlled by RAAF personnel and provides air traffic services out to 40NM.

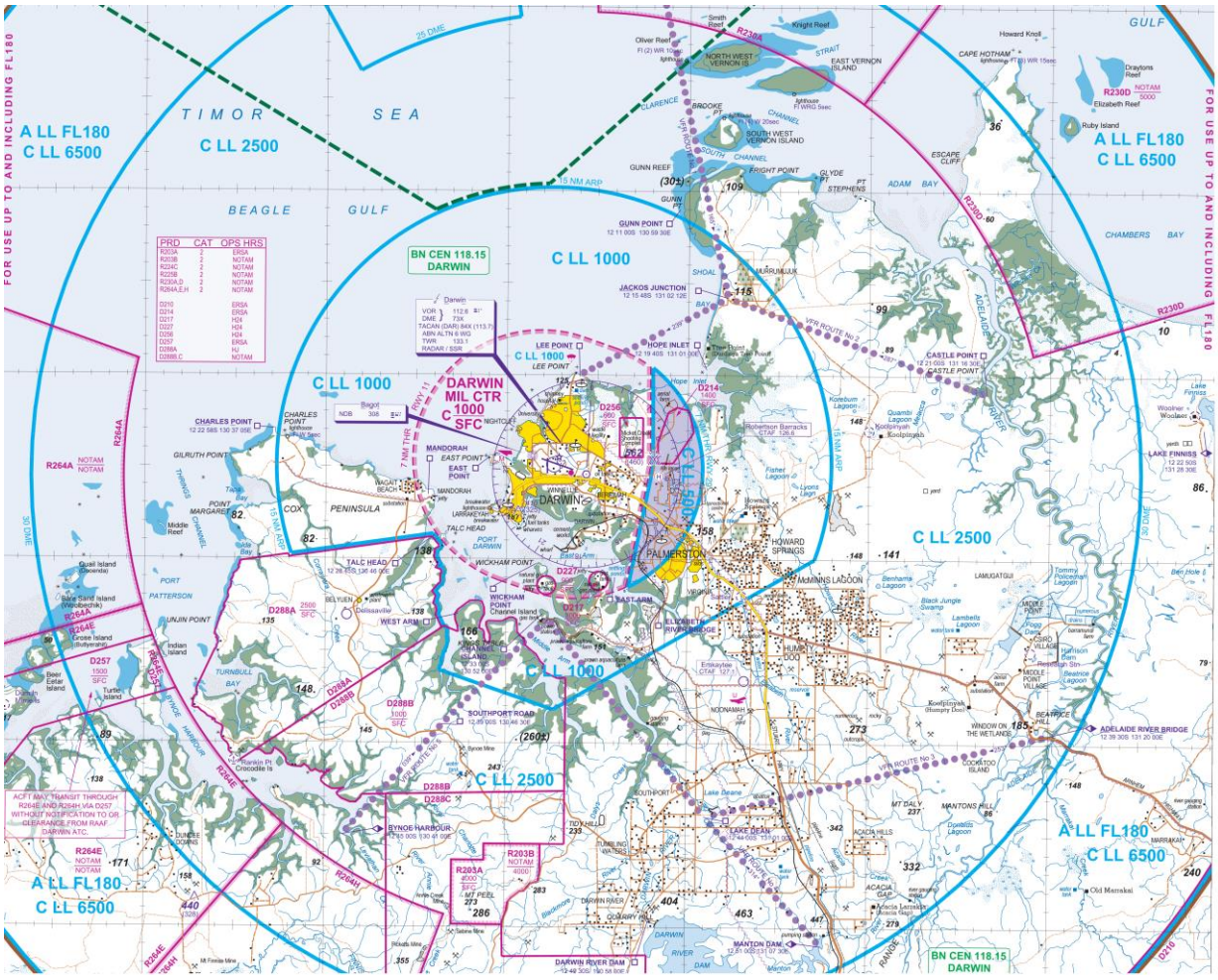


Figure 3: Extract of Darwin Visual Terminal Chart (VTC) Effective 23rd[h] May 2019

[3] https://www.darwinairport.com.au/corporate/planning

[4] Explanation of Class C Airspace can be found at Annex B

## 4.2 Restricted and Danger Areas

The following list of Danger and Restricted Areas are within 40NM of Darwin.

**RESTRICTED AREAS**

**R203A** KANGAROO FLAT – MILITARY FLYING/ NON FLYING

SURFACE (SFC) TO 4000 CONTACT ARMY RCO KANGAROO FLAT

**R203B** KANGAROO FLAT – MILITARY FLYING / NON FLYING

4000 TO NOTAM – CONTACT ARMY RCO KANGAROO FLAT

**R230A, D,** DARWIN – MILITARY FLYING / NON FLYING

**A** 5000 TO NOTAM

**D** NOTAM TO NOTAM – CONTACT FLTCDR 452SQN DARWIN

**R264A** DARWIN MILITARY FLYING / NON FLYING

**A** NOTAM TO NOTAM

**R264E, H** DARWIN MILITARY FLYING / NON FLYING

**E** NOTAM TO NOTAM

**H** NOTAM TO NOTAM **-** CONTACT FLTCDR 452SQN DARWIN

**DANGER AREAS**

**D214** ROBERTSON BARRACKS – RIFLE RANGE

SFC TO 1400 – CONTACT ARMY RCO ROBERTSON BARRACKS

**D217** BLADIN POINT – HIGH VELOCITY EXHUAST PLUME

SFC TO 3000 – CONTACT INPEX

**D227** WICKHAM POINT – HIGH VELOCITY EXHUAST PLUME

SFC TO 900 CONTACT CONOCO PHILLIPS DARWIN

**D256** MICKET CREEK – RIFLE RANGE

SCF TO 600 – CONTACT FLTCDR 452SQN DARWIN

**D257** DARWIN - ACCESS LANE

SFC TO 1500 – CONTACT FLTCDR 542SQN DARWIN

**D288A** COX PENINSULA – FLYING TRAINING

SFC TO 2500 – CONTACT SAFETY ASSURANCE BRANCH NTHN REGION

**D288B, C** COX PENINSULA – MILITARY FLYING TRAINING

SFC TO 1000 – CONTACT ARMY DO ROBERSTON BARRACKS

## 4.3 Air Routes

Darwin is serviced by several domestic air routes into and out of the Northern Territory as well as air routes that overfly, for airlines operating internationally into and out of Australia.

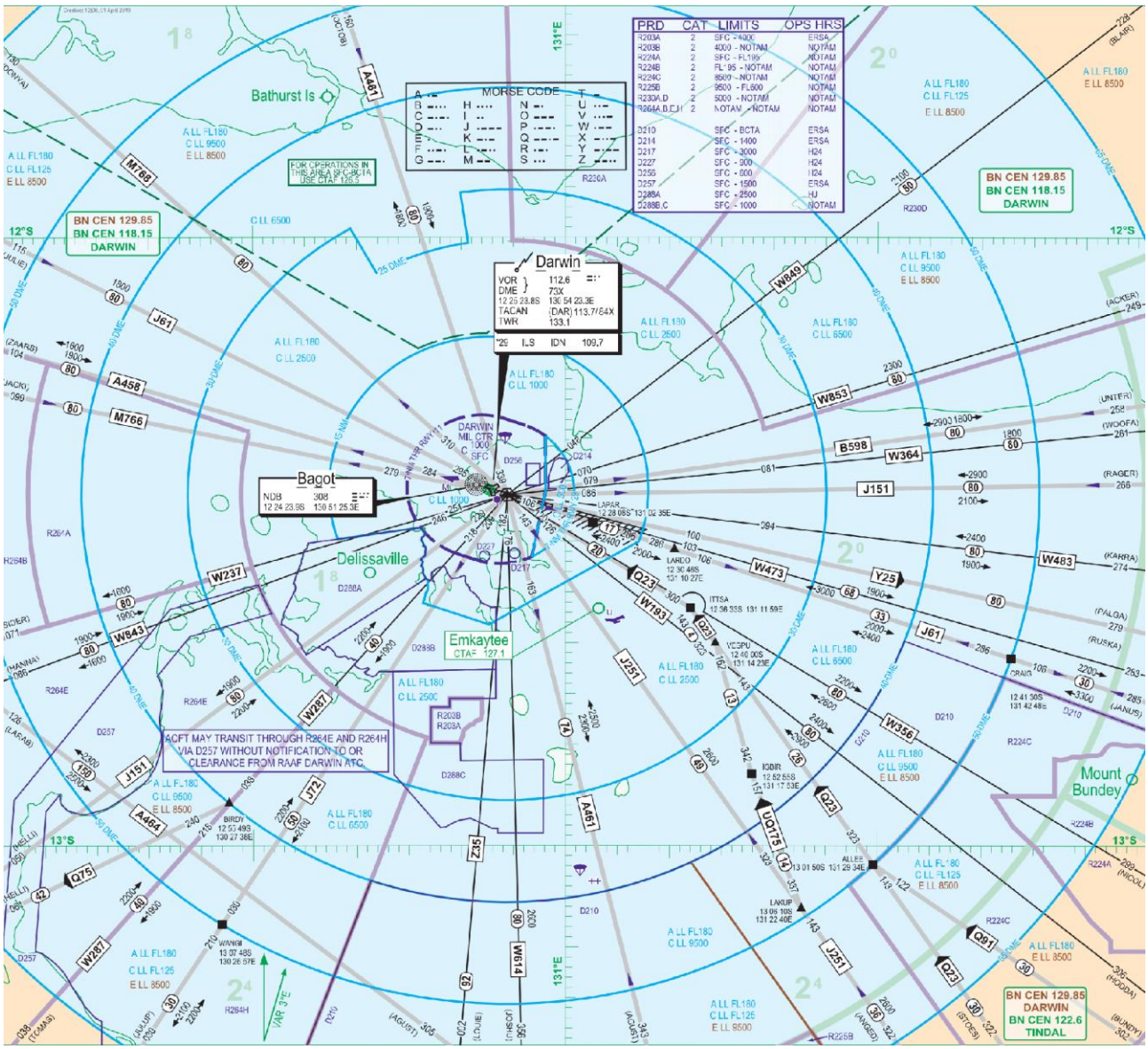


Figure 4 Extract of Darwin Terminal Area Chart (TAC) Effective 23rd May 2019

## 4.4 Environment

The airspace within 40NM of Darwin was reviewed to examine if there are current aircraft environmental issues associated with:

- noise
- gaseous emissions
- interactions with birds and wildlife
- Environment Protections and Biodiversity Conservation Act 1999 (EPBC Act) items.

No Issues were raised regarding the above environmental considerations.

## 4.5 Surrounding Aerodromes

The aerodromes within the 40NM scope of this preliminary review included, Emkaytee and Batchelor, both are uncertified and unregistered aerodromes. Stakeholder feedback was sought from operators at these airports and any feedback received was added to the review.

# 5 Traffic

## 5.1 Analysis of aircraft movement numbers

Darwin airport handles both civil and military traffic 24 hours a day. The major domestic and regional regular public transport (RPT) airlines that use the airport include Qantas Airways, Virgin Australia Airlines, Air North, Alliance Airlines, Tiger Airways, Jetstar, Chartair and Fly Tiwi. The airport is also served by a significant number of local air charter providers. International airlines operating to Darwin include Donghai Airlines from China, Silk Air from Singapore and Jetstar Asia.

Figure 5 below displays both the total aircraft movements and the total air transport movements.

- Total Movements for May 2017 (7,900).
- Total Movements for May 2019 (7,777).

This two year period shows an overall decrease of 1.56% of Total Movements.

- Total Air Transport movements for May 2017 (5,041).
- Total Air Transport movements for May 2019 (5,049).

This two year period shows an overall increase of 0.16% of the total air transport into Darwin, with notable peaks during the winter dry season.

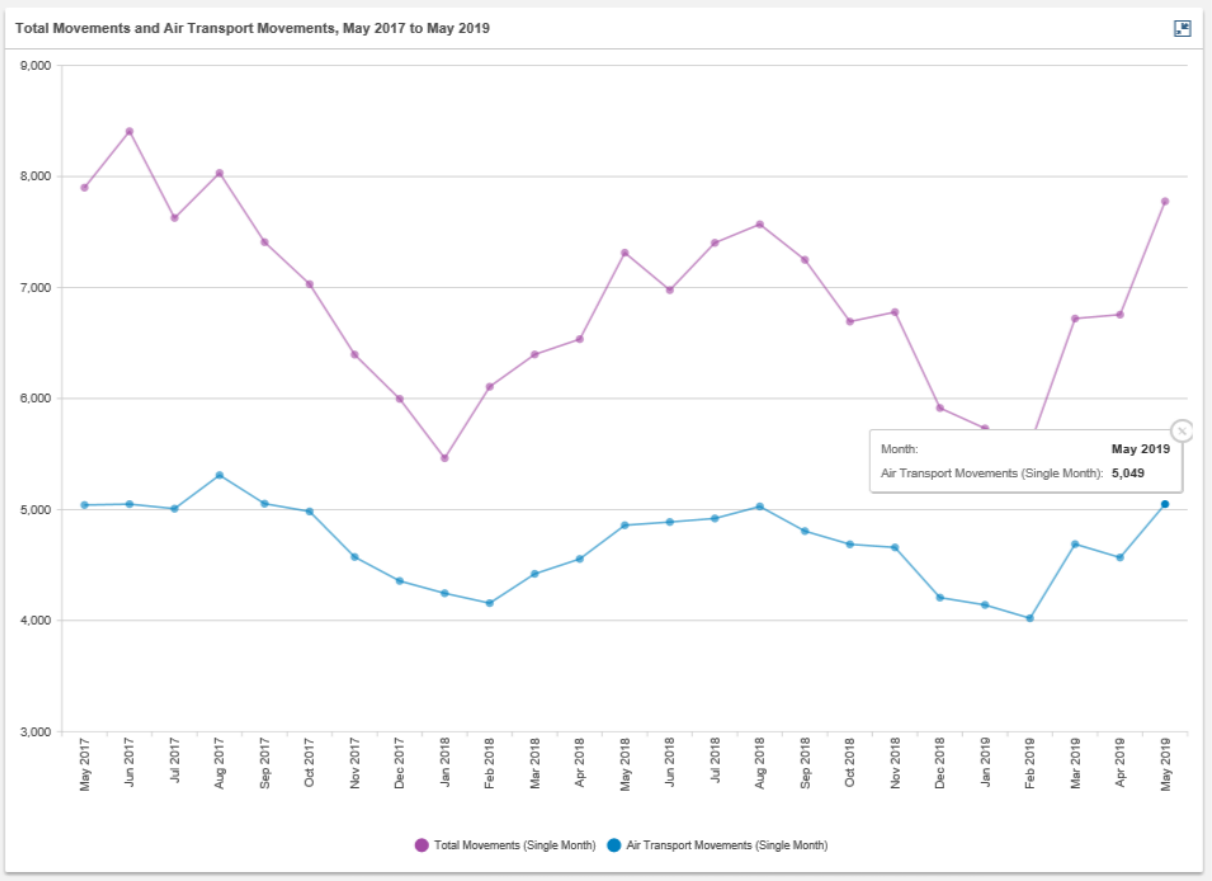


Figure 5: Monthly aircraft movement data May 2017 to May 2019. Source: Airservices.

## 5.2 Analysis of passenger numbers

Figure 6 below displays the monthly passengers travelling through Darwin commencing May 2017, (188,082 passengers) through to May 2019 (185,118 passengers). Overall the trend has shown a decrease of 1.58% in passengers over the period. The notable peaks in passenger numbers occur during the winter months (dry season).

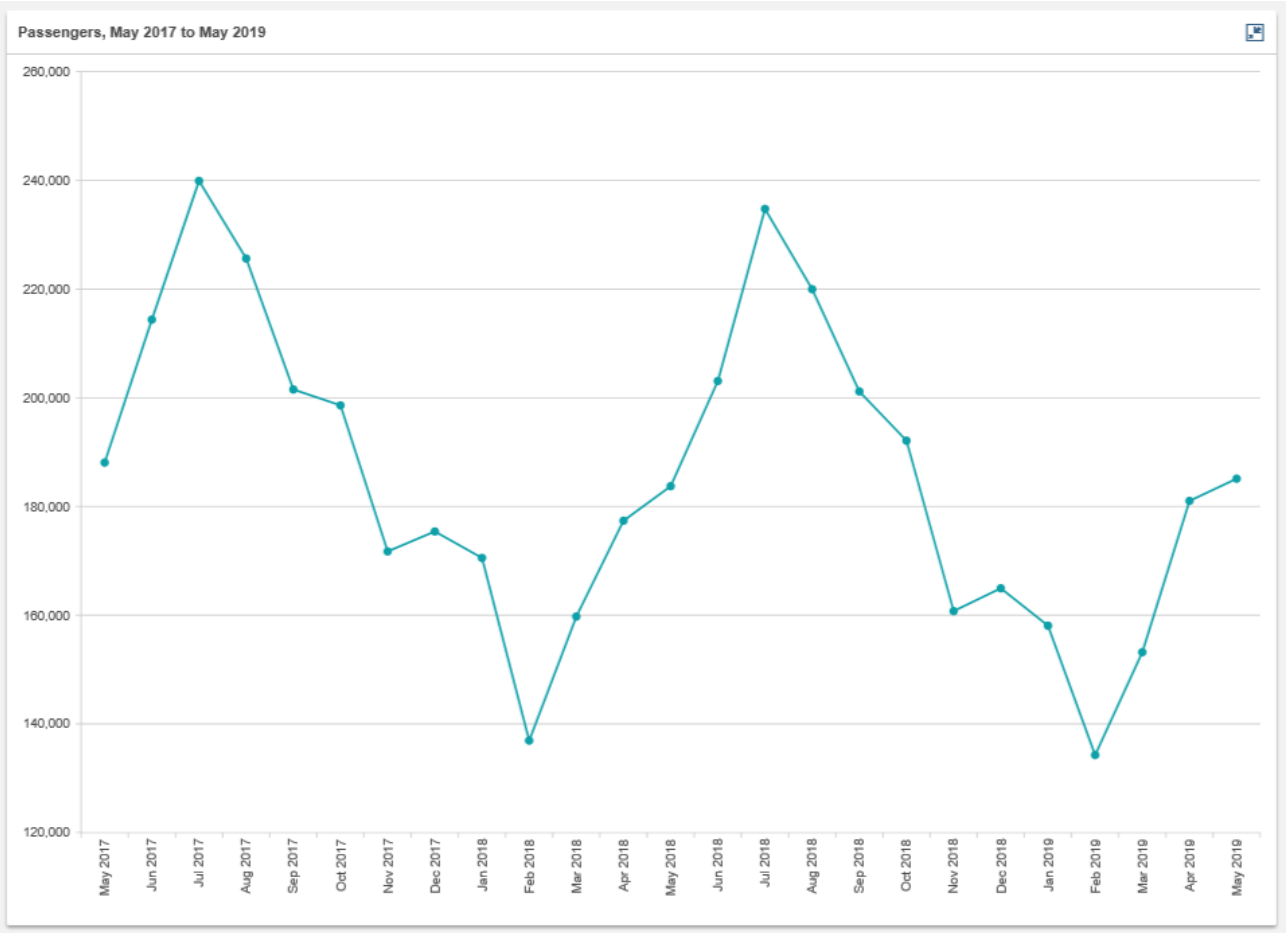


Figure 6: Monthly passenger data from May 2017 to May 2019. Source: Airservices Australia (Airservices).

# 6 Aviation Incident Reports

All incidents and accidents involving Australian registered aircraft, or foreign aircraft in Australian airspace must be reported to the ATSB. The ATSB receives incident information via pilot reports, Airservices' Corporate Integrated Reporting and Risk Information System reports and the Australian Defence Forces' Aviation Safety Occurrence Reports.

The ATSB maintains its own database, the Safety Investigation Information Management System (SIIMS), in which all reported occurrences are logged, assessed, classified and recorded. The information contained within SIIMS is dynamic and subject to change based on additional and/or updated data. Each individual report is known as an Aviation Safety Incident Report (ASIR) and for identification purposes is allocated its own serial number.

CASA receives de-identified ASIR data for the purpose of improving safety. The airspace related incidents within 40NM of Darwin from March 2017 to August 2019 were reviewed.

## 6.1 ATSB Aviation Safety Incident Reports

Over the period between March 2017 to August 2019 there were a total of 456 occurrences, of which 41 were airspace related.

| Year | 2017 | 2018 | 2019 | |
|---|---|---|---|---|
| Aircraft Separation | 7 | 16 | 9 | 32 |
| Operational Non-Compliance | 1 | 0 | 1 | 2 |
| ANSP Operational Error | 2 | 5 | 0 | 7 |
| Airspace Infringement | 0 | 0 | 0 | 0 |
| Totals | 10 | 21 | 10 | 41 |

Table 1: Airspace related incidents March 2017 to August 2019 (ATSB data).

## 6.2 Breakdown of incident data for the review period.

2019 The 10 incidents can be broken down as follows:

- six incidents due to ATC error
- four incidents due to pilot error.

2018 The 21 Incidents can be broken down as follows:

- 15 incidents due to ATC error
- six incidents due to pilot error.

2017 The 10 incidents can be broken down as follows:

- seven incidents due to ATC error
- three incidents due to pilot error.

Table 1 above was constructed utilising the Level 2 occurrence description from the ASIR database. The 41 incidents are all categorised as airspace under the Level 1 occurrence type, on the Australian Transport Safety Bureau's (ATSB) occurrence taxonomy. The occurrences summary field was then manually assessed, and incidents were then classified by the author as either pilot or ATC error.

# 7 Consultation and stakeholder feedback

Stakeholders were contacted and invited to provide comment or input on issues relating to Darwin airspace. A list of stakeholders invited to contribute to this review can be found in Annex C. Direct email correspondence was sent to appropriate stakeholders in addition to the wider audience being made aware of the review via the CASA Consultation Hub[5] on the CASA web site. Notification of the review also being made available through the Regional Airspace and Procedures Advisory Committee (RAPAC).

# 8 Key Issues, Findings and Recommendations

## 8.1

### Issues:

The current design of the control area (CTA) steps surrounding Darwin does not always facilitate arriving aircraft being able to remain within controlled airspace during descent.

### Findings:

The current design of the Darwin ATC steps at times can create situations where aircraft on their standard descent profile will fly temporarily outside CTA during arrival into Darwin.

### Recommendations:

ATC discuss with the affected stakeholders as to the best way to address this current situation. Consideration should be given to changing the affected step profile that results in a long-term permanent solution. In the interim, aircraft operators could modify their descent profiles in order to remain within CTA.

### Issues:

Stakeholder advises that the airspace is efficient most of the time however they do experience delays more frequently, due to local military exercises.

### Findings:

Currently the ATC provider manages civil and military traffic with due regard to safety and consideration to equitable access for civil flight operations. It has been noted that the number of aircraft participating in these military exercises grows as each exercise takes place. This apparent increase in military aircraft participation is causing delays to the civil aircraft operating at Darwin.

### Recommendations:

ATC explore opportunities to provide better efficiencies to civil traffic flows during military exercises.

[5] https://consultation.casa.gov.au/

## Issue:

Stakeholder based out of Emkaytee airfield, (located approximately 15NM to the south of Darwin), advises that military aircraft have been observed to fly within 10NM of the airfield, under 2,500 FT AMSL. Aircraft are flying in the region without making appropriate radio calls on Very High frequency (VHF) 127.10 Megahertz (MHz) common traffic advisory frequency (CTAF)

## Findings:

Observed instances of this occurring have apparently reduced over the last 18 months. The prominent aircraft at the time appeared to be United States Military rotary winged aircraft.

**Recommendations:**

Briefing packages should be delivered to foreign military crews regarding the location of and the operation within proximity to local civil aerodromes.

## Issue:

An aeromedical operator requests the promulgation, in order to ensure its continued availability, of the following current arrangements for their Helicopter Emergency Medical Service (HEMS) helicopter operations. The same stakeholder has also advised that delays into Darwin have led to crew's inadvertent flight into controlled airspace without the appropriate clearance. The following bullet points below outline the current operations that provide timely and efficient operations into and out of Darwin airport.

- Current circuit area clearances allow for timely departures and arrivals during day operations
- The current ability for aircraft to conduct a visual departure while operating under a filed Instrument Flight Rules (IFR) flight plan.
- Night departures utilising Night Vision Goggles (NVG) at Lowest Safe Altitude (LSALT) Visual Flight Rules (VFR) for aeromedical flights

## Findings:

The provision of the three options above provides the operator with timely departures or arrivals in response to HEMS and aeromedical flights.

Currently the requirement with ATC for these operations is for the pilot to contact airways clearance delivery (ACD) only for departures above 1,000 FT AMSL. This will allow for helicopters to quickly and efficiently depart controlled airspace for HEMS flights.

## Recommendations:

Stakeholders and Darwin ATC to discuss, with a view to formalise, the opportunity to implement a letter of agreement (LOA) that supports HEMS operations.

## Issue:

An airline pilot's association (the association) has advised that their members have indicated that the CTA step at 40NM Darwin should be lowered to 4,500 FT AMSL.

## Findings:

IFR piston aircraft are required to leave and re-enter-controlled airspace due to the aircrafts decent profile not matching that of the CTA steps. Stakeholders advise that the lowering of this step would assist the affected aircraft operators, while flying their typical descent profile. This would provide an added safety benefit by reducing the pilot's workload as well as allowing the aircraft to remain in controlled airspace during descent. This is considered important as these operations are typically single pilot and the existing workload, as claimed by the association, of leaving and re-entering CTA is distracting to both pilots and ATC. In

addition, the association claims that this lower altitude will enhance safety as the projected descent path will provide a buffer of 500 FT from the base of the proposed CTA steps. It has been requested that should the lowering of control steps occur that the airspace remain as the current published Class C.

### Recommendations:

RAAF ATC should investigate amending the CTA steps in conjunction with relevant stakeholders.

### Issue:

The Darwin RNAV-Z 11 instrument approach procedure is not available via any Darwin STARs.

### Findings:

This approach is preferable to the existing STAR connected VOR and NDB approaches due to lower minima and lateral navigation (LNAV) / vertical navigation (VNAV) guidance.

### Recommendations:

Airservices should conduct a cost benefit analysis regarding the RNAV-Z RWY 11 procedure being operationally available via a STAR.

# 9 Conclusion

The OAR has conducted a review of Darwin

The review ensured that the airspace complied with the requirements of the *Airspace Act (2007)*, Airspace Regulations (2007), the Australian Airspace Policy Statement (2018), the Minister's Statement of Expectation (2017) and CASA's Regulatory Philosophy.

The OAR has determined that the current airspace classification is fit for purpose. A review of some CTA steps that do not currently support continuous descents to Darwin airport should be undertaken by the RAAF, Airservices and local stakeholders.

# Annex A Acronyms and Abbreviations

| Acronym/abbreviation | Explanation |
|---|---|
| AAPS | Australian Airspace Policy Statement 2018 |
| ACP | Airspace Change Proposal |
| Act | Airspace Act 2007 |
| ADS-B | Automatic Dependent Surveillance - Broadcast |
| Airservices | Airservices Australia |
| ALA | Aircraft landing area |
| ALARP | As Low As Reasonably Practicable |
| AMSL | Above Mean Sea Level |
| ANSP | Air Navigation Service Provider |
| ASA | Aviation Safety Advisor |
| ASIR | Aviation Safety Incident Report |
| ATC | Air Traffic Control |
| ATS | Air Traffic Services |
| ATSB | Australian Transport Safety Bureau |
| CASA | Civil Aviation Safety Authority |
| CCO | Continuous Climb Operations |
| CDO | Continuous Descent Operations |
| CTA | Control Area |
| CTAF | Common Traffic Advisory Frequency |
| CTR | Control Zone |
| DA | Danger Area |
| Defence | Department of Defence |
| DME | Distance Measuring Equipment |
| ERC | En Route Chart |
| ERSA | En Route Supplement Australia |
| FT | Feet |
| FL | Flight Level |
| GA | General Aviation |
| IAL | Instrument Approach and Landing |
| ICAO | International Civil Aviation Organization |
| IFP9 | Instrument Flight Procedure |
| IFR | Instrument Flight Rules |
| IMC | Instrument Meteorological Conditions |
| km | Kilometre |
| kt | Knot |
| LL | Lower Level |
| MLAT | Multilateration |
| NOTAM | Notice to air men |
| NM | Nautical Miles |
| OAR | Office of Airspace Regulation |
| PT | Passenger transport |
| PTO | Public Transport Operations |
| RA | Restricted Area |
| RAPAC | Regional Airspace and Procedures Advisory Committee |
| RFC | Request for Change |
| RNAV | Area Navigation |
| RPAS | Remotely Piloted Aircraft Systems |

| Acronym/abbreviation | Explanation |
|---|---|
| SFC | Surface |
| SID | Standard Instrument Departure |
| STAR | Standard Terminal Arrival Route |
| TAC | Terminal Area Chart |
| TASWAM | Tasmanian Wide Area Multilateration |
| VFR | Visual Flight Rules |
| VMC | Visual Meteorological Conditions |
| VNC | Visual Navigation Chart |
| VTC | Visual Terminal Chart |
| WAM | Wide Area Multilateration |

# Annex B Australian Airspace Structure

| Class | Description | Summary of Services/Procedures/Rules |
|---|---|---|
| **A** | All airspace above Flight Level (FL) 180 (east coast) or | Instrument Flight Rules (IFR) only. All aircraft require a clearance from Air Traffic Control (ATC) and are separated by ATC. Continuous two-way radio and transponder required. No speed limitation. |
| **B** | IFR and Visual Flight Rules (VFR) flights are permitted. All flights are provided with ATS and are separated from each other. Not currently used in Australia. | |
| **C** | In control zones (CTRs) of defined dimensions and control area steps generally associated with controlled aerodromes | • All aircraft require a clearance from ATC to enter airspace. All aircraft require continuous two-way radio and transponder.<br>• IFR separated from IFR, VFR and Special VFR (SVFR) by ATC with no speed limitation for IFR operations.<br>• VFR receives traffic information on other VFR but are not separated from each other by ATC. SVFR are separated from SVFR when visibility (VIS) is less than Visual Meteorological Conditions (VMC).<br>• VFR and SVFR speed limited to 250 knots (kt) Indicated Air Speed (IAS) below 10,000 feet (FT) Above Mean Sea Level (AMSL)*. |
| **D** | Towered locations such as Bankstown, Jandakot, Archerfield, Parafield and Alice Springs. | • All aircraft require a clearance from ATC to enter airspace. For VFR flights this may be in an abbreviated form.<br>• As in Class C airspace all aircraft are separated on take-off and landing. All aircraft require continuous two-way radio and are speed limited to 200 kt IAS at or below 2,500 FT AMSL within 4 NM of the primary Class D aerodrome and 250 kt IAS in the remaining Class D airspace**.<br>• IFR are separated from IFR, SVFR, and provided with traffic information on all VFR.<br>• VFR receives traffic on all other aircraft but is not separated by ATC.<br>• SVFR are separated from SVFR when VIS is less than VMC. |
| **E** | Controlled airspace not covered in classifications above | • All aircraft require continuous two-way radio and transponder. All aircraft are speed limited to 250 kt IAS below 10,000 FT AMSL*,<br>• IFR require a clearance from ATC to enter airspace and are separated from IFR by ATC and provided with traffic information as far as practicable on VFR.<br>• VFR do not require a clearance from ATC to enter airspace and are provided with a Flight Information Service (FIS). On request and ATC workload permitting, a Surveillance Information Service (SIS) is available<br>• within surveillance coverage. |
| **F** | IFR and VFR flights are permitted. All IFR flights receive an air traffic advisory service and all flights receive a flight information service if requested.<br>Not currently used in Australia. | |
| **G** | Non-controlled | • Clearance from ATC to enter airspace not required. All aircraft are speed limited to 250 kt IAS below 10,000 FT AMSL*.<br>• IFR require continuous two-way radio and receive a FIS, including traffic information on other IFR.<br>• VFR receive a FIS. On request and ATC workload permitting, a SIS is available within surveillance coverage. VHF radio required above 5,000 FT AMSL and at aerodromes where carriage and use of radio is required. |

# Annex C Stakeholders

The following stakeholders were contacted to contribute to this review/study.

| Organisation | Position |
|---|---|
| Civil Aviation Safety Authority | Stakeholder Engagement |
| Civil Aviation Safety Authority | Aviation Safety Advisor |
| Australian International Pilots Association | Office |
| Australian Airports Association | Secretary |
| Air Frontier | Chief Pilot |
| Air North | Senior Base Pilot |
| Air Services Australia | Regulatory Services |
| Alliance Airlines | Chief Pilot |
| Aircraft Owners Pilots Association of Australia | Secretary |
| Arafura | Chief Pilot |
| Australian Airline Pilots Association | Secretary |
| Australian Ballooning Federation | Secretary |
| Black Diamond Aviation | Chief Pilot |
| Careflight | Chief Pilot |
| Cobham Aviation | Senior Base Pilot |
| Flight Standards | Chief Pilot |
| Gliding Federation of Australia | Secretary |
| Katherine Aviation | Chief Pilot |
| Hardy Aviation | Chief Pilot |
| Jetstream Air Services | Chief Pilot |
| Jandakot Flight Centre Darwin | Chief Pilot |
| Outback Helicopter Airwork | Chief Pilot |
| Northern Territory Airports | Airport Manager |
| Northern Territory Aviation Services | Chief Pilot |
| Pearl Aviation | Chief Pilot |
| Qantas Airways | Senior Base Pilot |
| Recreation Aviation Australia | Secretary |
| Royal Flying Doctor Service | Senior Base Pilot |
| Territory Air Services | Chief Pilot |
| Top End Aviation | Chief Pilot |
| Virgin Australia Airlines | Chief Pilot |