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Dubbo - Preliminary Airspace Review

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1 Executive Summary

Note – this Preliminary Airspace Review was conducted before the impact of COVID 19 on the aviation industry. The downturn in all aviation activity across Australia and internationally will have a significant impact on the analysis, outcomes and projections used in this report.

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 Office of Airspace Regulation (OAR) within the CASA has carriage of the regulation to administer and regulate Australian-administered airspace, in accordance with section 11 of the Act. The purpose of this review is to evaluate the airspace arrangements currently in place at Dubbo City Regional Airport (Dubbo), New South Wales. The scope of this review is to evaluate as to whether the airspace is currently fit for purpose and will remain so for the next five years.

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; and
- Stakeholder consultation.

Following on from the March 2018 Airspace Review of Dubbo, the OAR has undertaken this review with the intent of re-evaluating the appropriateness of the airspace surrounding Dubbo.

The OAR will monitor the airspace and operations at Dubbo as part of routine risk monitoring and reporting.

1.1 Summary of Conclusions

- All respondents to the review indicated that they were satisfied with the existing airspace arrangements at Dubbo, and that they were fit for purpose.
- The airspace arrangements at Dubbo are achieving an Acceptable Level of Safety (ALoS).

1.2 Key Recommendations

The following recommendations are made as a result of CASA's Preliminary Airspace Review of Dubbo:

Recommendation 1:

CASA should continue holding Aviation Safety Seminars at Dubbo.

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

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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 2018 (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 used 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 examine the airspace around Dubbo City Regional Airport (Dubbo) and identify changes in the operating environment around the airport, with the aim of determining any present or emerging airspace risks.

The scope of the review includes:

- An analysis of safety occurrence data within a 20 nautical mile (NM) radius of Dubbo aerodrome from the surface up to 8,500 feet (FT) Above Mean Sea Level (AMSL).
- Consultation with stakeholders to gather and validate data that will inform the airspace review.
- A review and update recommendations from the previous Airspace Review conducted in March 2018 (can be seen on the CASA website).

The scope of the review did not include consideration or analysis of on and off-airport infrastructure developments.

The review process included:

- Stakeholder Engagement via email and through the New South Wales Regional Airspace and Procedures Advisory Committee (RAPAC).
- Direct Stakeholder contact through email.
- Publication of the review being undertaken with the opportunity to provide feedback through the CASA Consultation hub.
- Findings 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 to ensure it is delivering an Acceptable Level of Safety (ALoS). Safe for all airspace users and fit for purpose.

3 Aerodrome

Dubbo is a certified aerodrome, located approximately four kilometres North-West from the City of Dubbo and is operated by the Dubbo Regional Council. The aerodrome services a variety of operations including Passenger Transport (RPT), flight-training and General Aviation (GA).

Dubbo has two runways: runway (RWY) 05/23 and RWY 11/29 with taxiways running partially parallel to both runways. The aerodrome has a Non-Directional Beacon (NDB). The aerodrome is equipped with freight and passenger facilities.

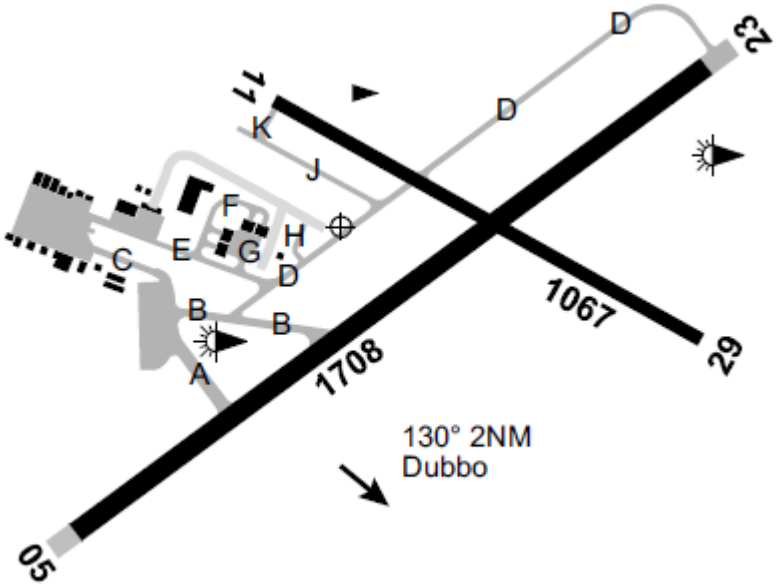

Figure 1: Dubbo Airport Layout. Source: En Route Supplement Australia (Airservices Australia 27 Feb 2020)

3.1 Terminal Instrument Flight Procedures

Dubbo has Instrument Flight Procedures (IFPs) to facilitate Instrument Flight Rules (IFR) arrivals at the airport. These include:

- Three Global Navigation Satellite System (GNSS) Arrival procedures to all runways
- One NDB approach
- One Area Navigation (RNAV) GNSS approach to Runway 05
- One RNAV GNSS approach to Runway 23.

3.2 Aerodrome Local Flight Procedures

The En Route Supplement Australia (ERSA) details local traffic regulations and procedures for the aerodrome. The only Flight Procedures stipulated for Dubbo require parachuting aircraft to operate not within 2 NM of either RWY 05/23 or 11/29.

4 Airspace

4.1 Airspace Structure

The airspace in the review area is all Class G. Class E airspace commences at FL125 above Dubbo and extends to the south-east. There are no broadcast areas or other special airspace procedures in the airspace in vicinity of Dubbo.

4.2 Surrounding Aerodromes

Two aerodromes and two Helicopter Landing Sites (HLS) surround Dubbo within the scope of this review. These include:

- YNRM: Narromine (Registered)
- YWOW: Dubbo/Wings Out West (Aircraft Landing Area)
- YXDB: Dubbo Hospital (HLS)
- YXNM: Narromine Hospital (HLS)

The below extract from the Newcastle Visual Navigation Chart (VNC) shows the airspace and other aerodromes around Dubbo. For reference, a 20 NM radius ring has been placed around Dubbo indicating the lateral dimensions of the review.

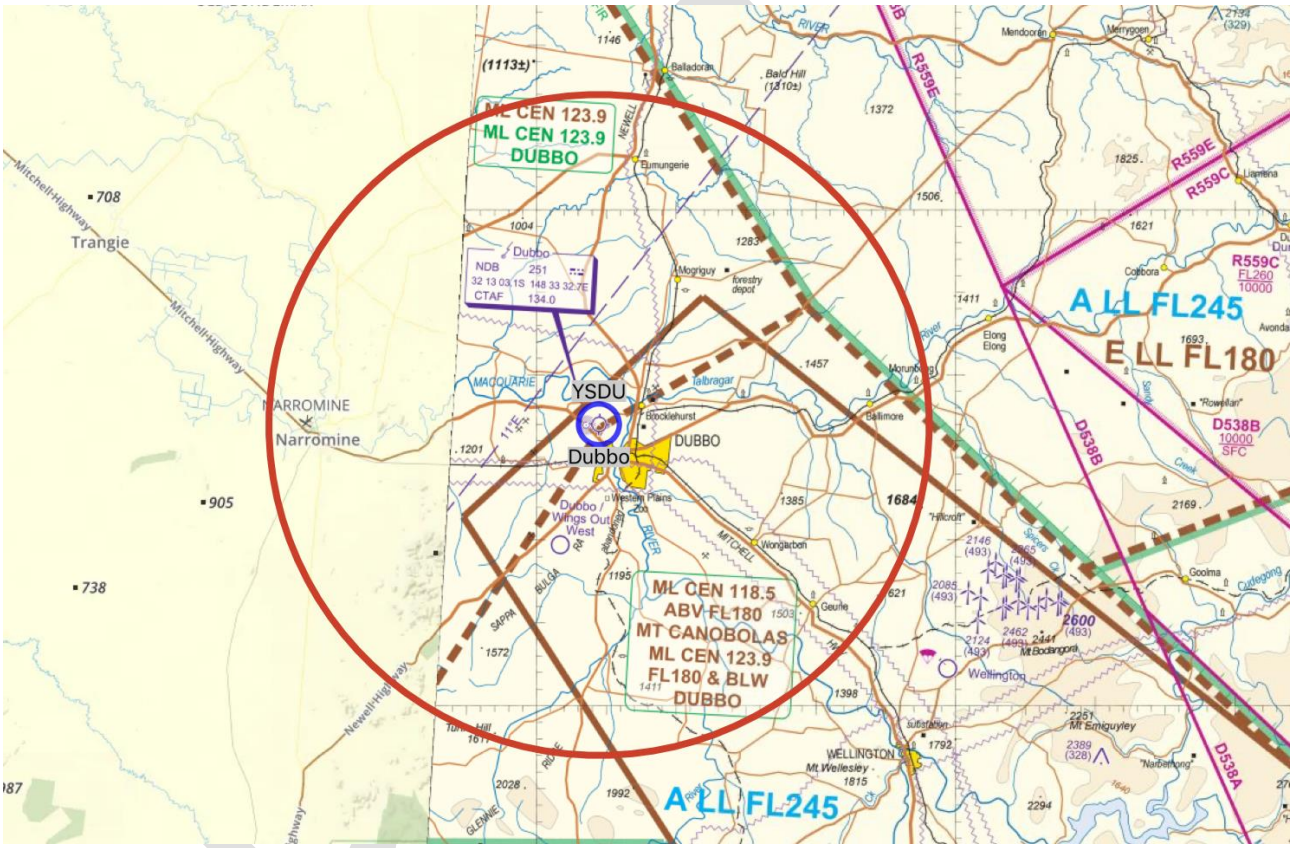

Figure 2: Extract from Newcastle VNC. Source: Airservices Australia 07 Nov 2019.

4.3 Restricted and Danger Areas

There are no Restricted or Danger Areas within the 20 NM of Dubbo. A number of Restricted and Danger Areas (primarily established for Military Flying) exist to the East of Dubbo and extend to the south-east, however these are outside the scope of the review.

4.4 Air Routes

Numerous air routes go through the airspace in the vicinity of Dubbo. Refer to Figure 3 below. A 20 NM radius ring has been placed around Dubbo for reference.

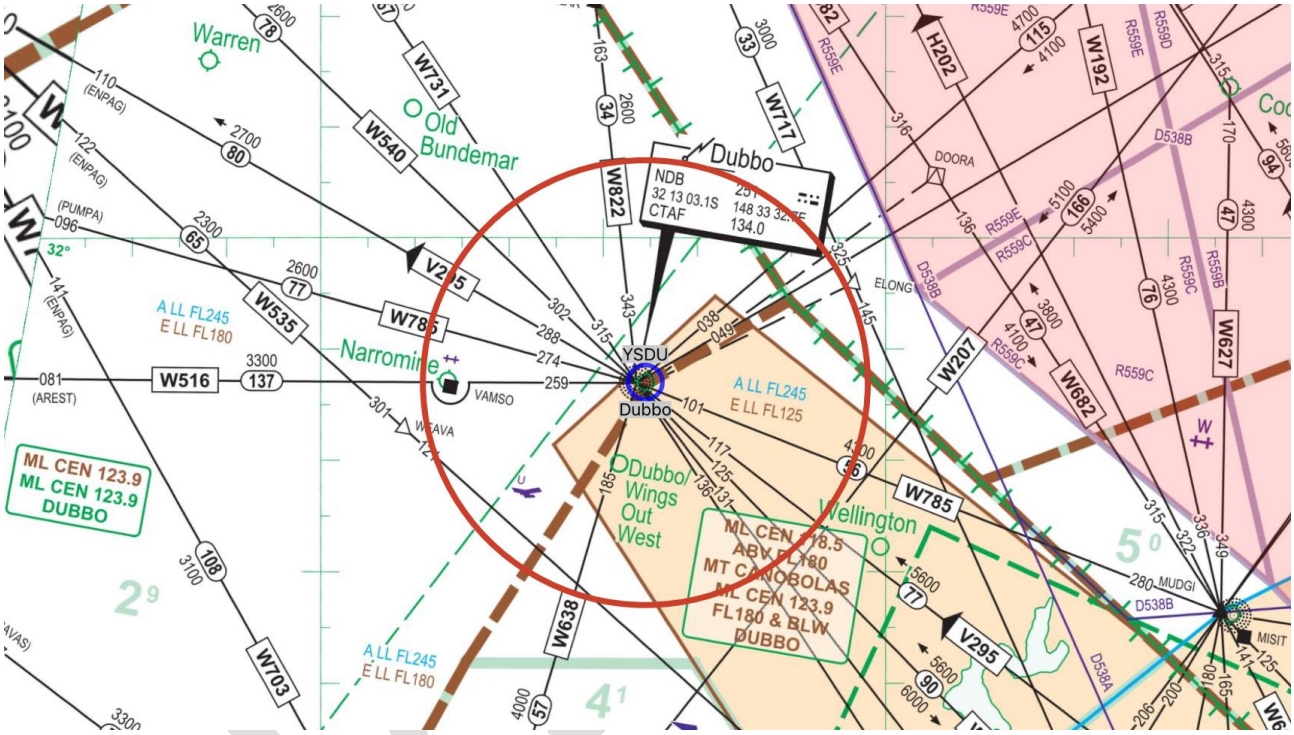

Figure 3: Extract from En Route Chart Low. Source: Airservices Australia 07 Nov 2019.

4.5 Environment

The airspace within 20 NM of Dubbo was reviewed to examine if there are current aircraft environmental issues associated with:

- Noise.
- Gaseous emissions.
- Interactions with birds and wildlife; and
- Environment Protections and Biodiversity Conservation Act 1999 (EPBC Act) items.

No issues were raised regarding the above environmental considerations. It is noted that the Dubbo ERSA entry does detail that a bird and animal (kangaroos and wallabies) hazard exists at the aerodrome.

5 Traffic

The majority of traffic at Dubbo consists of RPT and GA operations. A large number of movements (9,106 out of a total of 57,739) were reported as BE20 aircraft. These are operated by the Royal Flying Doctor Service (RFDS).

5.1 Analysis of aircraft movements

An analysis of air transport movements showed relative stability during the review period.

There has been a slight, gradual increase in air transport movements since January 2019. Some fluctuations in total movement numbers may be attributable to favourable flying conditions for GA aircraft as well as external service demands (e.g. medical service flights). Fluctuations in air transport movement numbers could be attributed to the non-scheduled activity of the RFDS.

5.2 Analysis of passenger numbers

Passenger numbers fluctuate monthly and follow much the same pattern as aircraft movement numbers. See Figure 4 below:

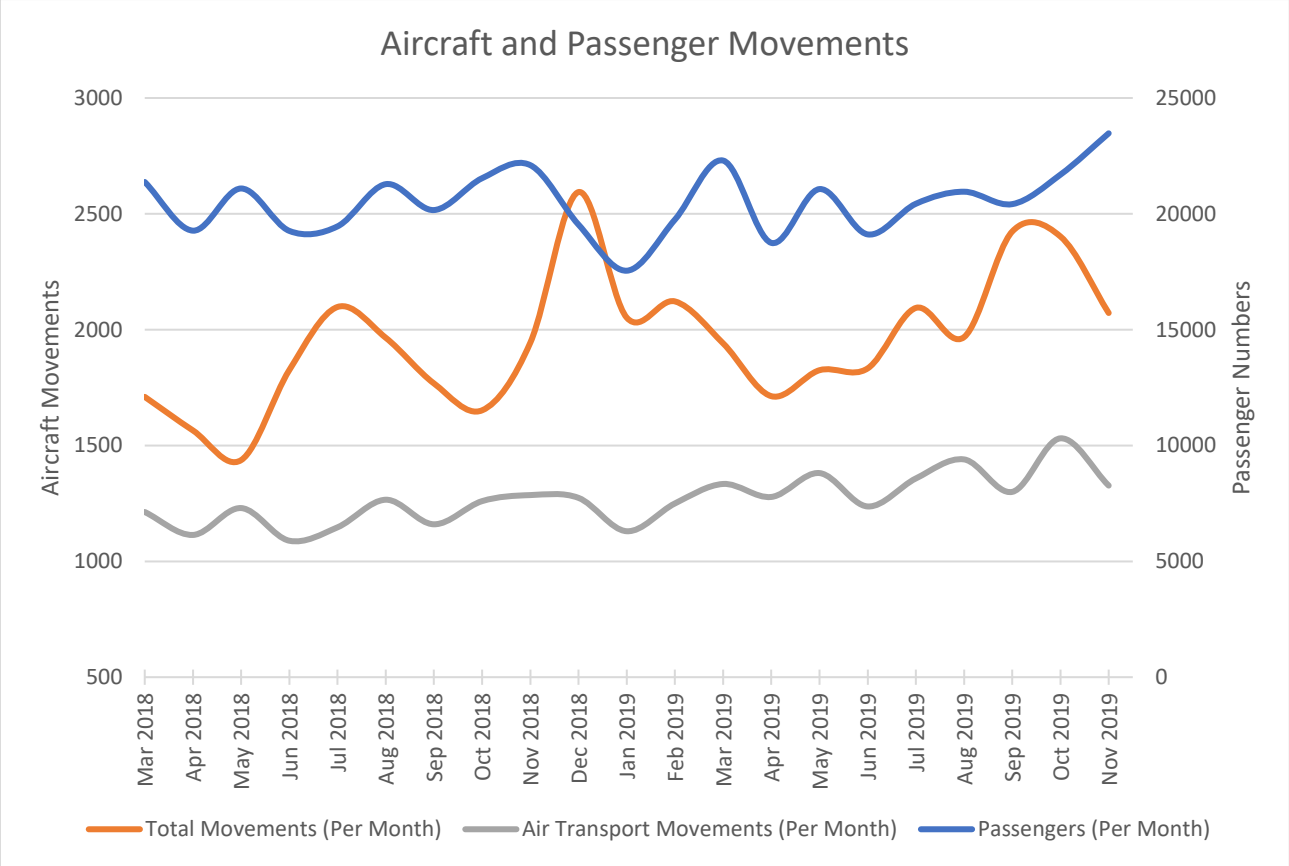

Figure 4: Movements and passenger numbers – March 2018 to November 2019.

6 Aviation Occurrence Reports

Incidents and accidents involving Australian registered aircraft, or foreign aircraft in Australian airspace must be reported to the Australian Transport Safety Bureau (ATSB). The ATSB receives occurrence information through pilot reports, Airservices' Corporate Integrated Reporting and Risk Information System reports and the Australian Defence Forces' Aviation Safety Occurrence Reports (involving civil aircraft only).

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.

Within the SIIMS taxonomy, occurrences are coded against three level description, each providing a higher, more specific degree of occurrence categorisation. Only occurrences which have a level one categorisation of 'Airspace' have been included in this analysis.

6.1 ATSB ASIR Data

For the period of the review, four airspace-related occurrences were reported within 20 NM of Dubbo. A summary of these occurrences are included below:

- *27 September 2018.* During take-off from runway 05, the crew of the Hawker Beechcraft B200 observed a Cessna 172 taking-off from the crossing runway. The crew of the B200 rejected the take-off.
- *09 November 2018.* During initial climb, the crew of the Beechcraft B200 received a TCAS RA on an inbound aircraft. The B200 stopped climbing and made a left turn to increase separation.
- *12 November 2018*. During approach, the crew of the Cessna 441 turned to conduct an orbit to maintain separation with the approaching Beechcraft B200. The crew of the 441 reported difficulties coordinating separation with other traffic due to radio congestion.
- *12 December 2018*. During approach to Dubbo, the crew of the Mooney M20J and the Piper PA32 reported sighting each other and the M20J turned to regain separation. Neither crew heard radio calls from the other aircraft.

All of these occurrences were classified as 'Incidents' and involved a mix of light piston and turboprop aircraft. All of these occurrences were further classified by the ATSB as 'Aircraft Separation' occurrences.

The majority of incidents were caused by a lack of radio communication by one or both aircraft. CASA's Aviation Safety Seminars routinely emphasise the importance of adhering to correct and accurate communications procedures in the vicinity of non-controlled airports.

7 Consultation and stakeholder feedback

A number of stakeholders including the airport operator and airspace users were invited to provide comments or feedback on their experiences operating at Dubbo. A total of six responses were received from airspace users who operate around both Dubbo and Narromine. Respondents included RPT and GA operators.

Overall, responses indicated that operators were satisfied that the airspace was safe around Dubbo and that for the most part, it is efficiently operated. A number of respondents mentioned that Dubbo having its own discreet frequency, separate to that used by surrounding airports was beneficial. Some respondents suggested that Narromine would benefit from a discrete frequency due to the number and concentration of gliding operations that take place there.

CASA response: This issue has been discussed previously. There are considerable obstacles to this proposal notably the co-location of arrival waypoints for Dubbo from the South and Narromine to the west. Having Narromine and Dubbo on separate frequencies will reduce pilot situational awareness and is not supported by CASA.

While some feedback indicated occasional issues around communications procedures, comments indicated that generally the mix and variety of traffic operating at Dubbo integrates well. Comments regarding communication issues were supported by the safety occurrence data.

8 Conclusion

The OAR has completed a Preliminary Airspace Review of Dubbo. It was found that the airspace classification is appropriate for current operations, and that no airspace safety trends were identified.

It was determined that no significant change to the operations or airspace risk profile at Dubbo have occurred since the last airspace review was conducted.

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 (2019) and CASA's Regulatory Philosophy.

Annex A Acronyms and Abbreviations

Acronym/abbreviation	Explanation
AAPS	Australian Airspace Policy Statement 2018
Act	Airspace Act 2007
ALA	Aircraft landing area
AMSL	Above Mean Sea Level
ANSP	Air Navigation Service Provider
ASIR	Aviation Safety Incident Report
ATC	Air Traffic Control
ATS	Air Traffic Services
ATSB	Australian Transport Safety Bureau
CASA	Civil Aviation Safety Authority
CTR	Control Zone
DA	Danger Area
ERSA	En Route Supplement Australia
FT	Feet
FL	Flight Level
GA	General Aviation
ICAO	International Civil Aviation Organization
IFP	Instrument Flight Procedure
IFR	Instrument Flight Rules
kt	Knot
NOTAM	Notice to air men
NM	Nautical Miles
OAR	Office of Airspace Regulation
PTO	Public Transport Operations
RA	Restricted Area
RAPAC	Regional Airspace and Procedures Advisory Committee
RFC	Request for Change
RNAV	Area Navigation
RPT	Regular Passenger Transport
SID	Standard Instrument Departure
STAR	Standard Arrival Route
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
VNC	Visual Navigation Chart
VTC	Visual Terminal Chart

Annex B Australian Airspace Structure

Class	Description	Summary of Services/Procedures/Rules
A	All airspace above Flight Level (FL) 180 (east coast) or FL 245 elsewhere	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 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. • IFR separated from IFR, VFR and Special VFR (SVFR) by ATC with no speed limitation for IFR operations. • 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). • 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. • 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**. • IFR are separated from IFR, SVFR, and provided with traffic information on all VFR. • VFR receives traffic on all other aircraft but is not separated by ATC. • 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*, • 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. • 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 • 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. 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*. • IFR require continuous two-way radio and receive a FIS, including traffic information on other IFR. • 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.

* Not applicable to military aircraft

** If traffic conditions permit, ATC may approve a pilot's request to exceed the 200 kt speed limit to a maximum limit of 250 kt unless the pilot informs ATC a higher minimum speed is required.

Annex C References

AIP DAP

ERSA

En Route Chart Low 2

VNC Newcastle

Airspace Act

Airspace Regs

AAPS 2018

Civil Aviation Act

The previous review

Annex D Stakeholders

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

Airservices Australia

Air Link

Australian Defence Force (CASA Liaison Officer)

Dubbo Aero Club

Dubbo City Council

FlyPelican

Fly Corporate

NSW Regional Airspace Procedures Advisory Committee

QANTAS Link

Recreational Aviation Australia

Regional Express

Royal Flying Doctor Service (New South Wales)

Soar Narromine

Thomas Aviation

Warrior Warbirds

Wings Out West