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Civil Aviation Safety Authority

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Brisbane West Wellcamp Airspace Review

August 2019

C I V I L A V I A T I O N S A F E T Y A U T H O R I T Y

safe skies for all

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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 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).

The purpose of this review is to evaluate the airspace arrangements currently in place at Brisbane West Wellcamp (Wellcamp) Airport, Queensland.

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 April 2017 Post-Implementation Review (PIR) of Wellcamp, the Office of Airspace Regulation (OAR) has undertaken this review with the intent of further evaluating the appropriateness of the airspace surrounding Wellcamp PIR.

1.1 Summary of Conclusions

- Airspace is currently fit for purpose.
- OAR will continue to monitor traffic movements and safety occurrences at Wellcamp.
- The OAR will monitor the progress of the integration of flight training at Wellcamp from an airspace perspective.

1.2 Key Recommendations

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

Recommendation 1:

The OAR should monitor the traffic growth at Wellcamp over the next two years, including the integration of flight training operations based at Wellcamp. If appropriate, another review should be conducted post-implementation of flight training at Wellcamp.

Recommendation 2:

The OAR should continue to liaise with other business areas of CASA regarding the commencement of flight training at Wellcamp to ensure that the airspace remains fit for purpose.

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, taking into account 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 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 address the recommendation from the 2017 Post Implementation Review for CASA to undertake a further airspace review around Wellcamp no later than 2020. Additionally, the review will consider whether the current airspace is fit for purpose with consideration given to the introduction of pilot training at the airport. Timeframe considered as part of this review is from 01 November 2014 to 30 April 2019.

The scope of the review includes:

- A risk assessment of the airspace within 10 nautical mile (NM) of Wellcamp aerodrome 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.
- 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 email and through the South Queensland Regional Airspace and Procedures Advisory Committee (RAPAC).
- 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 currently fit for purpose and will remain so for the next five years.

3 Aerodrome

Wellcamp is a certified aerodrome and is located approximately 15 kilometres West from the City of Toowoomba. Wellcamp is a privately owned and operated aerodrome. The aerodrome services a variety of operations including Regular Passenger Transport (RPT), freight and aero-medical aviation services.

Wellcamp has one runway (RWY 12/30) with a taxiway paralleling approximately half the length of the runway. The aerodrome is equipped with freight and passenger facilities. The aerodrome is not equipped with any ground-based navigation aids.

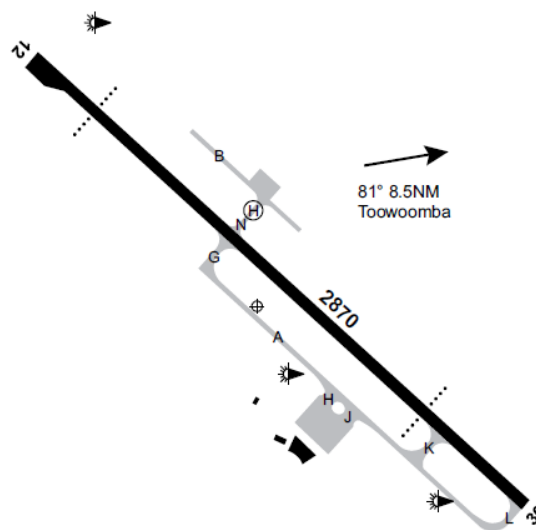


Figure 1: Extract of Brisbane West Wellcamp Aerodrome Layout. Source: En Route Supplement Australia (Airservices Australia 23 May 2019)

3.1 Terminal Instrument Flight Procedures

Wellcamp has several Instrument Flight Procedures (IFPs) including Standard Instrument Departures (including Jet specific) and Area Navigation (RNAV) approaches to facilitate operations at the airport. IFPs include:

- 2 RNAV (GNSS) approaches to RWY 12 (procedure used is dependent on activation status of Oakey Restricted Areas).
- 1 RNAV (Required Navigation Performance [RNP]) approach to RWY 12.
- 1 RNAV (GNSS) approach to RWY 30.
- 4 SIDs facilitating departures to the North, South, East and West.
- 1 jet-specific SID for jet aircraft departing to the East.

3.2 Aerodrome Flight Procedures

The En Route Supplement Australia (ERSA) details local traffic regulations and procedures for the aerodrome. These include stipulating the use of published departure procedures whenever practicable in order to avoid Oakey military Restricted Airspace. Left-hand circuits are to be flown to RWY 30 and right-hand circuits to RWY 12 due to terrain to the North-East of the aerodrome.

A number of noise abatement procedures are also listed to assist with night-time noise management, as well as minimising the impact of noise on surrounding townships.

4 Airspace

4.1 Airspace Structure

The majority of airspace surrounding Wellcamp (10 NM radius up to 8,500 FT AMSL) is Class G airspace and contained within the Darling Downs Broadcast Area. A small portion of Restricted Area R654A (Surface to 8,500 FT AMSL) and the Oakey Military control zone (Surface to 8,500 FT AMSL) are also contained within this area.

Additionally, the airspace surrounding Wellcamp is covered by Danger Area D621A (Surface to 10,000 FT AMSL). Wellcamp sits on the Northern boundary of D621A, with the Danger Area extending South and West.

4.2 Surrounding Aerodromes

A number of Aircraft Landing Areas (ALAs) and airports surround Wellcamp (within 10 nautical mile radius). These include:

- Toowoomba Regional Airport (Certified)
- Oakey Army Aviation Centre (Military)
- Wyreema (ALA)
- Colanya (ALA)
- Argyle (ALA)
- Southbrook (ALA)

The below extract from the Oakey Visual Terminal Chart (VTC) shows the airspace and other aerodromes around Wellcamp. For reference, a 10 NM radius ring has been placed around Wellcamp.



Figure 2: Extract from Oakey VTC. Source: Airservices Australia 23 May 2019.

4.3 Restricted and Danger Areas

A number of Restricted Areas (RAs) and Danger Areas (DAs) are promulgated in the vicinity of Wellcamp. These principally exist to facilitate military aircraft flying training and are associated with Oakey and Amberley Air Bases.

Danger Areas:

D621A

Military Flying. Surface to 10,000 FT AMSL. Activated by NOTAM. Contact: FLTCDR 452SQN Amberley.

D630C

Flying Training. Surface – 8,500 FT AMSL. Activated Monday – Thursday 2200Z-1330Z, Friday 2200Z-0630Z. Contact FLTCDR 452SQN Amberley.

D630D

Flying Training. Surface – 8,500 FT AMSL. Activated by NOTAM. Contact: FLTCDR 452SQN Amberley.

Restricted Areas:

R639A

Military Flying. Conditional Status: RA2. 10,000 FT AMSL – NOTAM. Activated by NOTAM. Contact: FLTCDR 452SQN Amberley.

R654A

Military Flying. Conditional Status: RA1. Surface – 8,500 FT AMSL. Activated by NOTAM. Control Authority: FLTCDR 452SQN Oakey FLT.

R654B

Military Flying. Conditional Status: RA2. Surface – 8,500 FT AMSL. Activated by NOTAM. Control Authority: FLTCDR 452SQN Oakey FLT.

R654C

Military Flying. Conditional Status: RA1. 8,500 FT AMSL – Flight Level (FL) 125. Activated by NOTAM. Control Authority: FLTCDR 452SQN Oakey FLT.

Oakey Military Class C Control Zone

Surface – 8,500 FT AMSL. Activated by NOTAM. Control Authority: FLTCDR 452SQN Oakey FLT.

R652D

Military Flying. Conditional Status: RA1. 8,500 FT AMSL – FL210. Activated by NOTAM. Control Authority: FLTCDR 452SQN Amberley.

R639A

Military Flying. Conditional Status: RA2. 10,000 FT AMSL – NOTAM. Control Authority: FLTCDR 452SQN Amberley.

4.4 Air Routes

Numerous air routes go through the airspace in the vicinity of Wellcamp. Refer to Figure 3 below. A 10 NM radius ring has been placed around Wellcamp for reference.

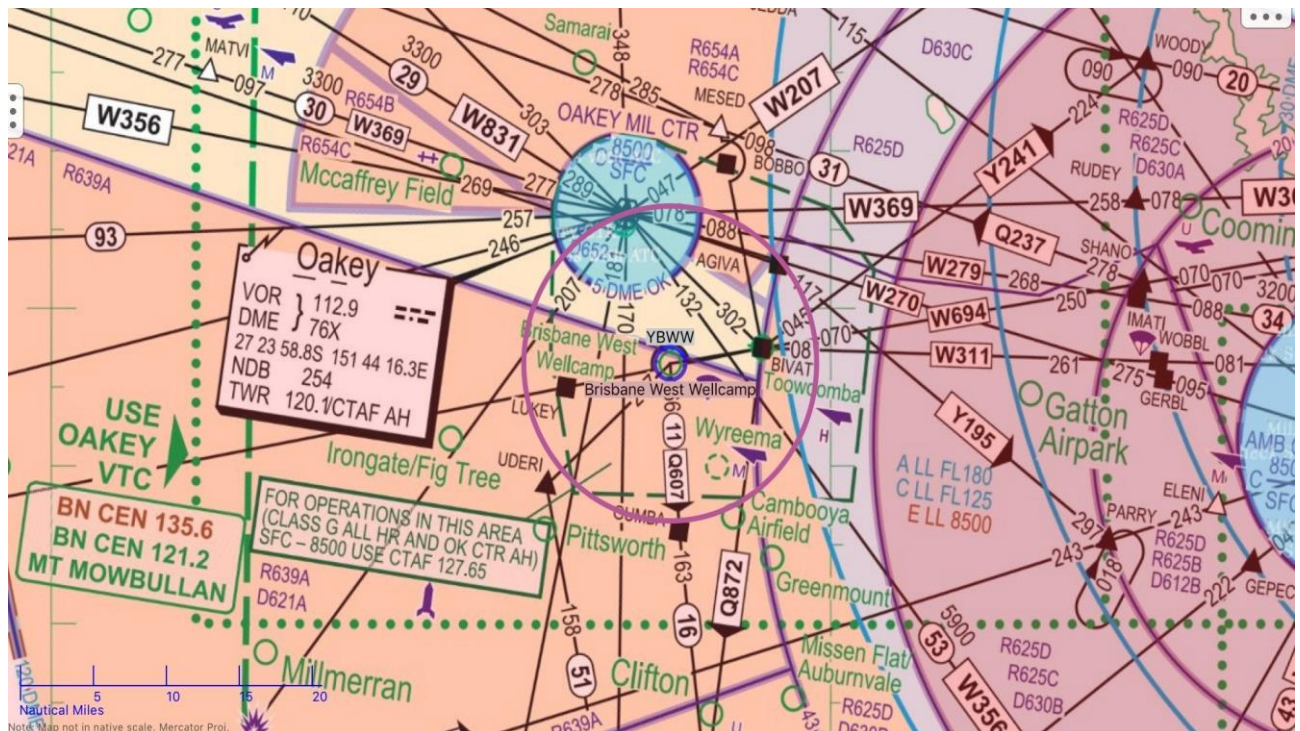


Figure 3: Extract from En Route Chart Low. Source: Airservices Australia 23 May 2019.

4.5 Environment

The airspace within 10 NM of Wellcamp 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.

5 Traffic

The majority of traffic at Wellcamp consists of RPT and freight operations.

5.1 Analysis of aircraft movements

An analysis of air transport movements and total aircraft movement numbers showed all both measures have remained relatively stable. Data was available for the period 01 September 2015 to 28 February 2019. For 2018, a total of 6,110 total movements operated from Wellcamp. 5,500 of these were air transport movements.

5.2 Analysis of passenger numbers

The total Passenger numbers for 2018 were 189,100. This represents a slight decrease on passenger numbers of 2017 of 206,043. Total aircraft, air transport and passenger numbers, by month can be seen in Figure 4 below:

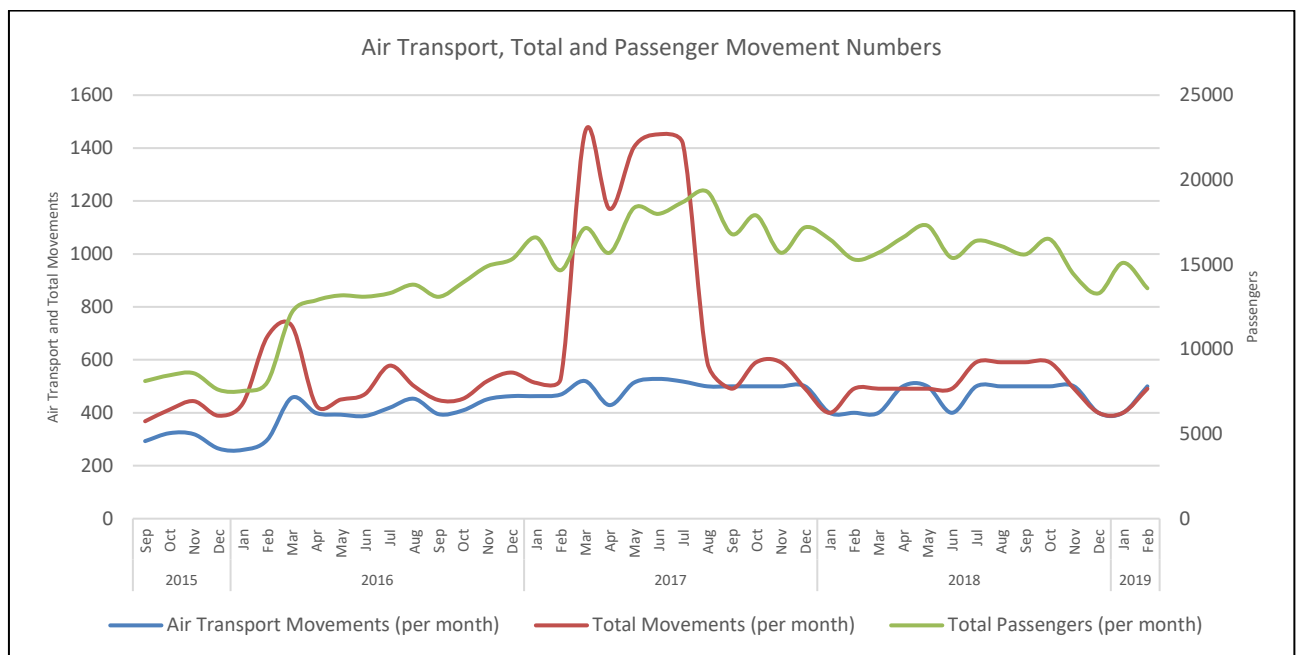


Figure 4: Movements and passenger numbers – 01 September 2015 – 28 February 2019.

6 Aviation Occurrence Reports

All 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, five unique airspace-related occurrences were reported in the Wellcamp vicinity. Note that one particular occurrence may be classified against multiple types e.g. a conflict involving two aircraft may be classified as a separation issue as well as an Airborne Collision Avoidance System (ACAS) event. A summary of these six events are included below.:

- *15 February 2016.* Passing 300 ft on climb, the Cessna 172 crew turned to maintain separation with the SAAB 340 on final approach to the reciprocal runway.
- *15 September 2016.* The crew of the Bombardier DHC-8 conducted a missed approach into Brisbane West Wellcamp to maintain separation with the Beech B200 on approach into Toowoomba.
- *11 December 2017.* During approach, the crew of the Bombardier DHC-8 were provided traffic information on a VFR aircraft operating in the vicinity of the aerodrome. The crew of the DHC-8 subsequently received a TCAS traffic alert before sighting the second aircraft. The DHC-8 turned to maintain separation.
- *08 February 2018.* During descent, the crew of the Embraer ERJ 170 received a TCAS-RA on an aircraft below. No radio calls were heard from the aircraft.
- *05 November 2018.* ATC incorrectly advised the Cessna 182 that Restricted Area R654A was deactive which subsequently resulted in an airspace infringement.

All of these occurrences were classified as 'Incidents' and involved a mix of light piston, turbo prop and jet powered aircraft. All of these occurrences were further classified by the ATSB as 'Aircraft Separation' occurrences except for one which involved Oakey Air Traffic Control (ATC) incorrectly advising an aircraft of the status of a Restricted Area. This incorrect information result in an airspace infringement of the Restricted Area.

The majority of incidents were caused by a lack of radio communication by one or both aircraft. Aviation Safety Seminars have been held in the area and the incidence of poor radio communication has decreased.

7 Consultation and stakeholder feedback

Stakeholders were contacted and invited to provide comment or input to issues relating to the Wellcamp airspace. A list of stakeholders invited to contribute to this review can be found in Annex C.

As part of the review, the OAR met with a number of stakeholders who regularly operate within the airspace. Overall, this feedback was positive, with operations at Wellcamp integrating sufficiently with those at Toowoomba and surrounding aerodromes. Of particular note was the efficiency and predictability provided by the Instrument Flight Rules (IFR) air routes around the Wellcamp area. Operators noted that these achieved efficient operations into and out of Toowoomba and Wellcamp while also deconflicting as necessary with Oakey Restricted Areas.

Operators did however note that, on occasion, some radio transmissions made on the ground at Wellcamp are not heard by operators at Toowoomba. While this is not a frequent occurrence, the topographical displacement of both airports can result in some transmission not being received as required. ATSB safety data did not indicate any trends of these occurrences.

One operator provided feedback on the fact that the RNAV-Y RWY 12 approach is not available when Oakey Control Zone (CTR) is active and that the RNAV-Z RWY 12 approach must be flown. The operator noted that because this procedure is offset to allow separation with CTR, an increase in difficulty and complexity, especially during poor weather and low visibility conditions, exists.

While these concerns are noted, the practices of having two approaches depending on the activation status of Oakey airspace ensures that the entire approach is flown within the same airspace class. Additionally, adequate separation with military operations within the Oakey CTR is ensured.

Flight training operations to the south of Wellcamp stated that current Wellcamp operations did not impact on their activities and that the use of locally agreed training areas was acceptable in achieving desired outcomes.

The operators of Wellcamp stated that they anticipated the continued growth of freight operations at Wellcamp as well as regional RPT services. They noted flight training operations (conducted by Flight Training Adelaide) were scheduled to commence in January 2020.

While feedback regarding operations in and around Wellcamp was positive, a majority of stakeholders indicated a degree of apprehension regarding the integration of planned flight training at Wellcamp. While this future operation is outside the scope of this review, the OAR notes operators' concern around its integration and will continue to monitor developments associated with it.

8 Conclusion

The OAR has completed an Airspace Review of Wellcamp. It was found that the airspace classification is appropriate for current operations, and that no safety concerns were identified. Despite this, operations around Wellcamp could be enhanced through the installation of a re-broadcasting facility to improve communications between operators at Wellcamp and Toowoomba.

Operators' concerns regarding the integration of flight training at Wellcamp was noted. The OAR will continue to monitor the progress of this operation to ensure airspace issues are addressed appropriately.

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	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	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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.

Annex C Stakeholders

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

Aircraft Owners and Pilots Association (AOPA)

Airnorth Airlines

Airservices Australia

Australian Defence Force

Australian Transport Safety Bureau

Austrek Air Charter

Gliding Federation of Australia (GFA)

Lone Eagle Flying School

QantasLink Airlines

Recreational Aviation Australia

Regional Express Airlines

South Queensland Regional Airspace and Procedures Advisory Committee (RAPAC)

Toowoomba Airport

Toowoomba Regional Council

Wellcamp Airport