Australian Government
Civil Aviation Safety Authority
www.casa.gov.au

Preliminary Airspace Review of Ayers Rock

December 2018

DOCUMENT SPONSOR: OFFICE OF AIRSPACE REGULATION

TRIM REFERENCE: D18/115056

FILE REF: OP18/76

Document control:

Version	Issue/Nature of Revision	Date
0.1	Initial draft	May 2018
0.2	Contains peer feedback	July 2018
1.0	Final	August 2018
1.1	Includes Addendum from Airservices	December 2018

1 EXECUTIVE SUMMARY

1.0.1 The *Airspace Act 2007* (Act) provides the Civil Aviation Safety Authority (CASA) with the authority to administer and regulate Australian-administered airspace and obligates CASA to conduct regular reviews of the existing classifications of Australian–administered airspace. The Office of Airspace Regulation (OAR) conducted a Preliminary Airspace Review (the Review) of the airspace arrangements and classifications within 25 nautical miles (nm) of Ayers Rock Airport (Ayers Rock) to determine if the airspace remains fit for purpose.

1.0.2 This review applies the CASA regulatory philosophy which considers the primacy of air safety but also takes account of all relevant considerations including cost.

1.0.3 An assessment of airspace incidents and feedback from stakeholders concluded there were no risks that required changes to the existing airspace.

1.0.4 There has been an increase in the number of aircraft movements at Ayers Rock following the introduction of additional passenger transport (PT)[1] operations.

1.0.5 The OAR has determined that the current airspace architecture is fit for purpose.

1.0.6 Stakeholder feedback focussed on means that may improve efficiency and shared use of the airspace, and the OAR will pass this feedback to the relevant agencies and CASA staff.

1.0.7 Airservices Australia (Airservices) considers that there is merit in conducting a trial of lowering Class E airspace in the vicinity of Ayers Rock. Lowering Class E airspace could enhance service delivery to instrument flight rules (IFR) aircraft at no additional cost to Airservices. Airspace users (including VFR aircraft) could benefit from fitment of Automatic Dependent Surveillance-Broadcast avionics through the use of surveillance separation standards and surveillance information services.

Recommendation

1. Airservices should investigate the benefits of conducting a trial of lowering Class E airspace in the vicinity of Ayers Rock.

[1] For the purposes of this study, PT services can be defined as activities involving regular public transport and all non-freight-only charter operations.

1.

CONTENTS

2 BACKGROUND

2.1 Overview of Australian airspace classifications

2.1.1 Australian airspace classifications accord with Annex 11 of the International Civil Aviation Organization (ICAO) and include Class A, C, D, E, and G depending on the level of service required to safely and effectively manage aviation activity. Class B and Class F airspace are not currently used in Australia. Each class of airspace determines the type and nature of aviation operations permitted in that airspace. Annex A provides details of the classes of airspace used in Australia.

2.1.2 Ayers Rock aerodrome sits within Class G airspace and is designated by the Civil Aviation Safety Authority (CASA) as an uncontrolled aerodrome, which is subject to Common Traffic Advisory Frequency (CTAF) procedures. Above the Class G airspace is Class E which starts at Flight Level (FL) 180 with Class A starting at FL245, refer to Figure 1.

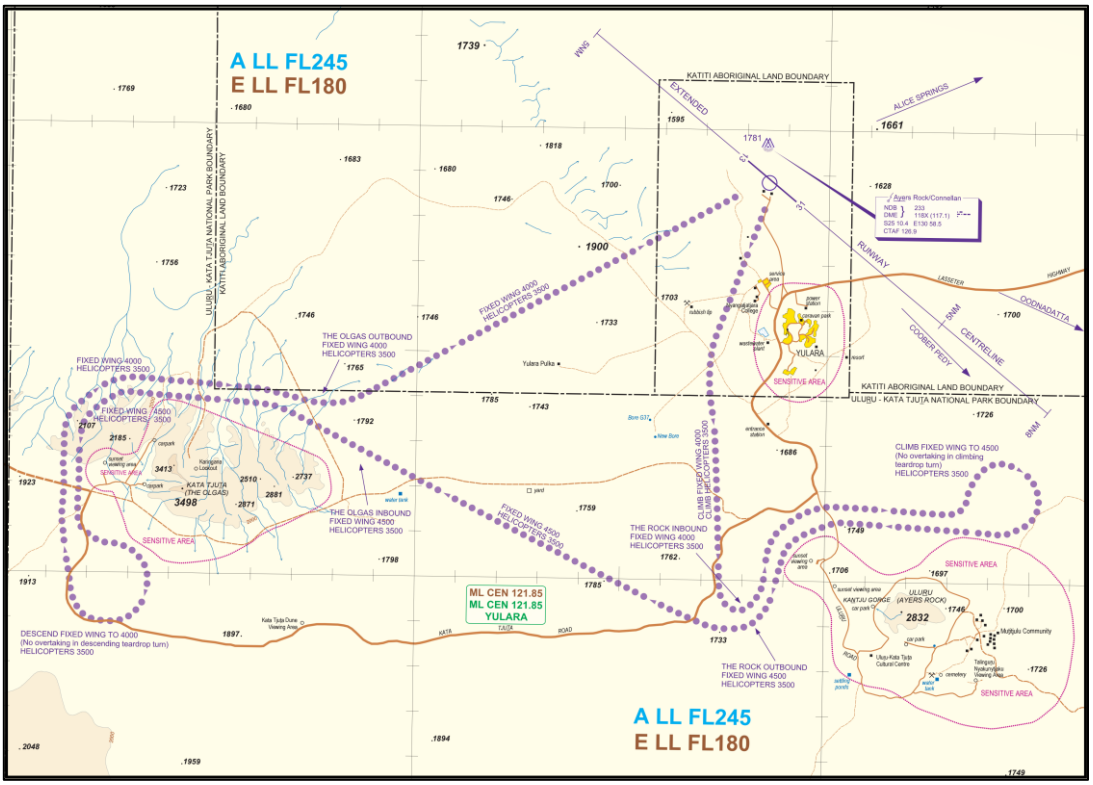

Figure 1: Extract of Alice Springs Visual Terminal Chart (VTC) Uluru Inset, Effective 24 May 2018.

2.2 Aerodrome

2.2.1 Ayers Rock aerodrome is certified and is located seventeen kilometres North West of the monolith Ayers Rock / Uluru. The aerodrome provides regional passenger transport services between Ayers Rock, Sydney, Cairns, Melbourne, serviced by QantasLink, Jetstar Airways and Virgin Australia. Ayers Rock is ranked as the 4th busiest Class G airspace regional aerodrome in Australia with approximately 40 PT flights per day. There are several general aviation, tourism-based operators on the aerodrome.

2.3 Air Navigation Service Providers at Ayers Rock

2.3.1 The airspace surrounding Ayers Rock is non-controlled and is available for use by aircraft under the visual flight rules (VFR) and instrument flight rules (IFR). No tower services are provided, however aircraft within Class G airspace around Ayers Rock, during hours of regular public transport (RPT) operations, are required to communicate using the Certified

Air/Ground Radio Service (CA/GRS) callsign “Ayers Rock Radio” on CTAF 126.9 MHz. Pilots are advised of the CA/GRS operating hours via, Automatic Aerodrome Information Service (AAIS) on 126.55MHz. An Aerodrome Frequency Response Unit (AFRU) advising pilots that they are using the correct radio frequency (Ayers Rock CTAF) is also in place. Air Traffic Services (ATS) are provided by Airservices Australia’s (Airservices) Melbourne Centre, on the very high frequency (VHF) 121.85 MHz in the overlaying airspace, of which contact is also available on the ground. Airservices considers that there is merit in conducting a trial of lowering Class E airspace in the vicinity of Ayers Rock. Lowering Class E airspace could enhance service delivery to IFR aircraft at no additional cost to Airservices. Airspace users (including VFR aircraft) could benefit from fitment of Automatic Dependent Surveillance-Broadcast (ADS-B) avionics through the use of surveillance separation standards and surveillance information services.

2.4 Surveillance

2.4.1 There is no radar coverage within the vicinity of Ayers Rock. Situated at the airport is an ADS-B ground station. The ADS-B, which is a radar-like surveillance system, provides coverage. ADS-B is a system in which suitably equipped aircraft automatically broadcast their location via a digital data link. The data is received by ATC ground stations and can be displayed on air traffic controller’s screens. ADS-B coverage at 5,000 feet (ft) above mean sea level (AMSL) is outlined in Figure 2.

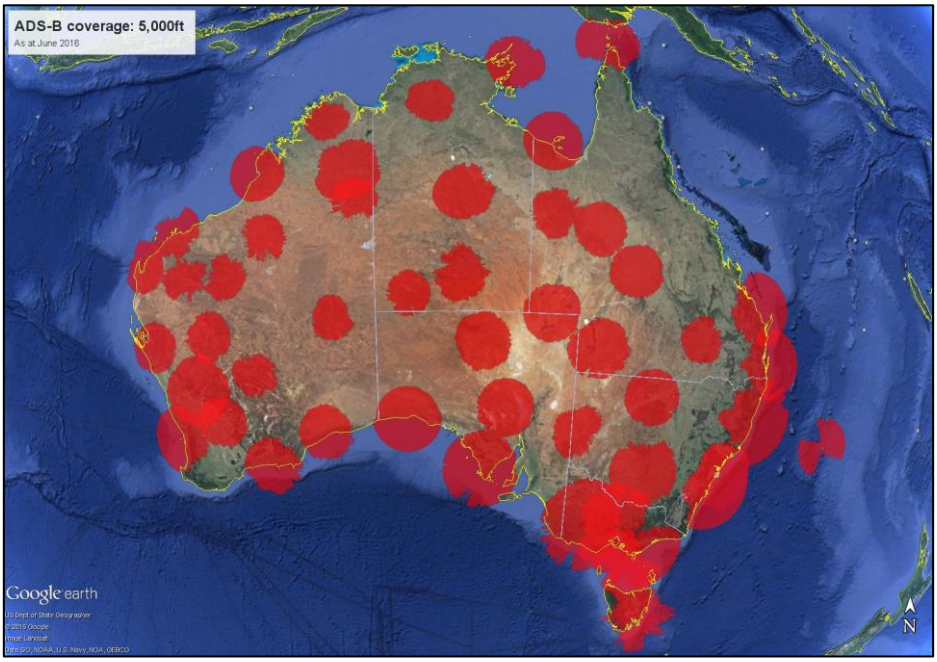

Figure 2: ADS-B coverage at 5,000 ft AMSL (Airservices Australia).

2.5 Ayers Rock aircraft movements

2.5.1 Total passenger numbers for the 2017/18 financial year at Ayers Rock were 380,266. This represents an increase of 8.1% over the previous 5 year period.[2] Total aircraft movements for the 2017/18 financial year were 3,354. This represents an increase of 1.5% over the previous 5 year period.

2.5.2 There is no current Airport Masterplan available to forecast growth. It is noted that the aerodrome operator is not required to have an Airport Masterplan for the aerodrome.

2 Aircraft movements provided using the Bureau of Infrastructure, Transport and Regional Economics (BITRE) data.

3 AVIATION INCIDENTS

3.1 Aviation safety incident reports

3.1.1 Any accident or incident involving Australian registered aircraft or foreign registered aircraft in Australian airspace must be reported to the Australian Transport Safety Bureau (ATSB). Every aviation safety incident report (ASIR) is entered into the ATSB database and is available to the OAR. Defence incidents are also included within these reports. Information from the ATSB confidential reporting system (REPCON) is also available.

3.2 Summary of incidents

3.2.1 This review has assessed the Air Safety Incident Report data for an area within 25 nm of Ayers Rock and has determined that there are no incidents that justify changes to the airspace architecture. CASA through the Stakeholder Engagement Division (SED) and the OAR has initiated strategies to mitigate risk through safety promotion intended to reduce the causal factors for aircraft incidents. CASA will continue to monitor incident reports for the Ayers Rock area to determine and undertake further regulatory action or review as required.

3.2.2 ASIR Occurrence records indicate there were 110 occurrences reported between 1 May 2008 and 21 May 2018 (refer to Table 1: Ayers Rock Accidents and Incidents). Of these one was categorised as airspace related. Only 2 accidents were listed over the ten year period of which there were no fatalities.

3.2.3 A review of the airspace related incidents determined that most could be categorised as follows:

- Environmental
- Operational,
- Consequential, and
- Technical.

3.2.4 Analysis of reported airspace incidents indicated that most incidents were caused by Wild life / Bird strikes.

3.2.5 There was no indication of issues with airspace architecture that would justify changes to the airspace.

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Airspace	0	0	0	0	0	0	0	1	0	0	0	1
Infrastructure	1	0	0	0	0	0	0	0	0	1	0	2
Consequential Events	0	0	0	1	0	1	0	2	0	0	0	4
Technical	3	0	2	0	0	1	3	2	1	4	0	16
Environment	2	1	4	12	11	3	1	4	5	16	1	60
Operational	2	3	4	4	2	3	0	5	0	3	1	27
Totals	8	4	10	17	13	8	4	14	6	24	2	110

Table 1: Ayers Rock Accidents and Incidents.

4 FEEDBACK FROM STAKEHOLDERS

4.0.1 Stakeholder consultation is predominantly obtained through the Stakeholder Engagement Division's safety forums. In some cases, however, targeted stakeholder consultation was undertaken relating to specific incidents or comments. Information received from this process is as follows.

4.0.2 There is no parachute symbol to alert airspace users of the potential for parachute operations near the airport. The airport has approached Airservices Australia and has been advised that the airport cannot instigate publication of the symbol in AIP.

4.0.3 With the introduction of the Skyflyer tethered balloon, the CA/GRO will have no knowledge of when the balloon launch will occur as we believe that the operator has been advised that there is no requirement for radio calls. The airport operator has advised that they believe that the Skyflyer operators are in discussion with CASA and that the AIP entries are yet to be finalised before commencement of operations. There was a request for a danger area to be placed around the launch site so that the CA/GRO would not have to give possible traffic while having no knowledge of when the balloon will launch. The Skyflyer site is within 5nm of the airport and on the direct flight path from Ayers Rock aerodrome to the Rock Inbound, it is also close to the town helicopter landing site (HLS).

4.0.4 HLS/helipads. There are several helipads used by the local scenic operators. The Town helipad, (adjacent to the Voyages resort) and the Longitude 131 helipads, are not published in any aeronautical documents. This situation makes it difficult for itinerant operators who will hear broadcasts from the helicopter operators but will have no knowledge of where the helicopters are tracking to/from.

4.0.5 Drone/remotely piloted aircraft systems (RPAS) operations. The Ayers Rock Resort is located within 5nm of either the approach or departure profiles of the airport, as well as one of the helipads used by the local operators. The CASA app shows users that it is ok to fly drones in the resort, because the HLS discussed above are not depicted. It is possible that drone operators maybe enticed to operate in the areas around the Skyflyer balloon and the parachute jump landing areas. There have already been several instances of parachute drops being held up because of drone activity near the drop zone. Drone flying is illegal in the national park and is heavily policed by the park rangers with hefty fines.

4.0.6 Skydiving operations are delayed dropping skydivers when RPT is within the circling area of Ayers Rock Aerodrome. Skydive aircraft operate 5nm to the south of the Aerodrome. The Skydive operator is incurring additional costs resulting from extended flight time due to holding the drop of parachutists.

4.0.7 An RPT operator has expressed concern with the potential conflicts of inbound and outbound RPT jet aircraft, due to the two-way air route structure. See Route G222 below.

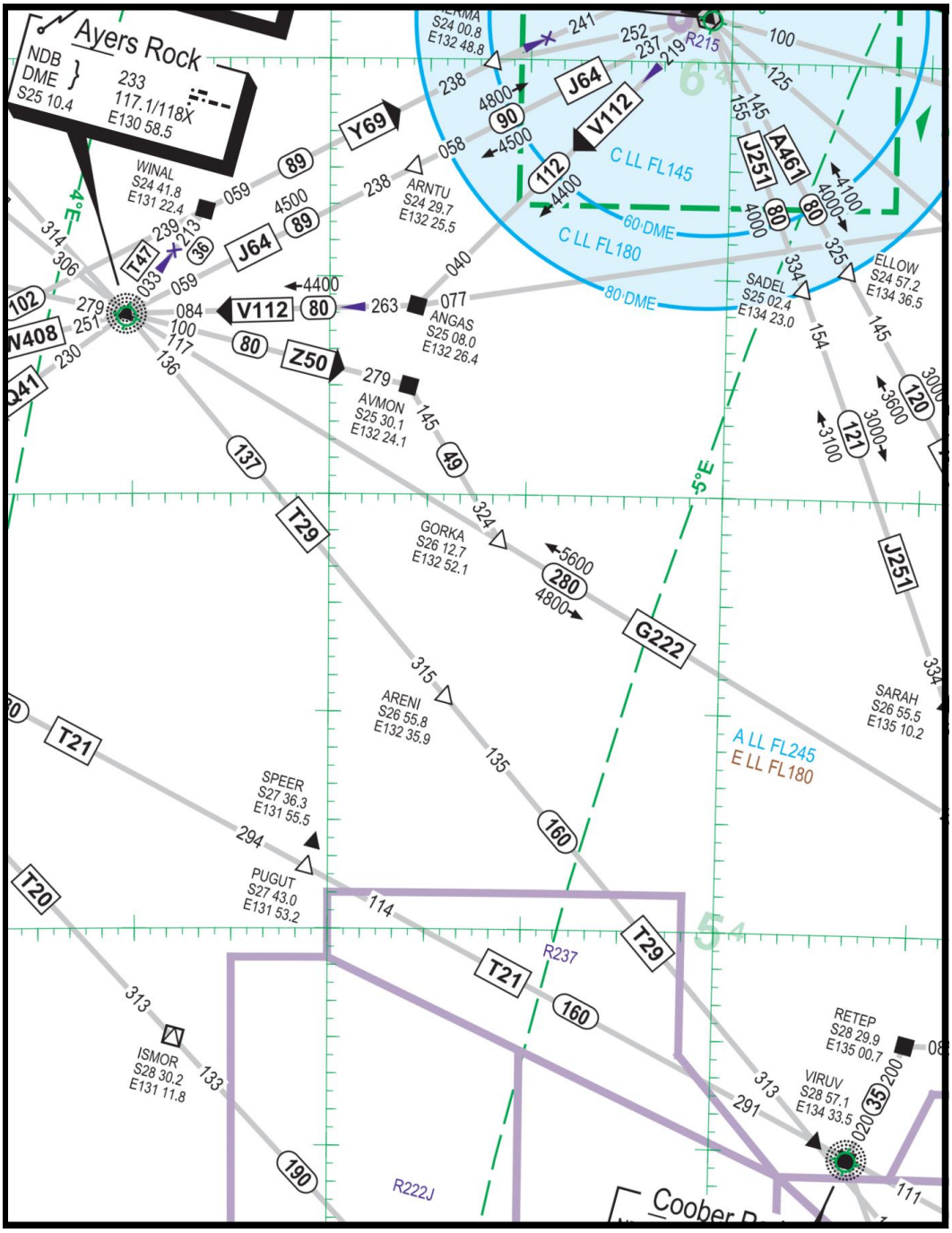

Figure 3: Extract of ERC H3 Effective 9 November 2017

4.0.8 An Airline Pilots Representative Organisation, representing the views of airline pilots that regularly operate into Ayers Rock, advises that the CA/GRS does little to enhance safety at the airport. Instances of CA/GRS has at times detracted from safety by creating radio clutter during times of multiple arrivals and departures. The organisation would support the following: Removal of the CA/GRS, Lower Class E to 8,500 ft AMSL whilst having ATC IFR to IFR separation services. All published airways into Ayers Rock reclassified as Class E down to 2,500 ft above ground level (AGL) allowing IFR Surveillance and control services to all Initial Approach Fixes. All instrument approach procedures captured within Class E to 700 ft AGL. Allow a Rescue & Fire Fighting Services (RFFS) or current air operator on the airfield to run a Unicom service with reduced cost to industry as well as providing information “on request”.

4.1 Air navigation procedures

4.1.1 Airservices processes IFR aircraft operating in the vicinity of Ayers Rock in the overlaying and adjacent Class E airspace to a lower level of FL180. These services are provided by Melbourne ATS Centre. An IFR aircraft in Class E is separated from other IFR aircraft and are also provided with a traffic information service as far as practicable on VFR traffic. All aircraft require a VHF radio and must have a transponder, although VFR aircraft do not require a clearance from air traffic control to enter the E airspace. Aircraft operating in Class G airspace, do so under the CTAF procedures.

5 KEY ISSUES AND FINDINGS

- Issue: No parachute symbol in vicinity of Ayers Rock airport.
  - Finding: The Skydive operation has made enquires regarding having this symbol put on the applicable VTC, however they have not been provided with the necessary information required to complete the process.
  - Improvement Opportunity: Add a Parachute symbol to the VTC through appropriate section in Airservices.
- Issue: Ayers Rock CA/GRO is unaware of the potential Skyflyer tethered balloon operating due to no requirement for it to make radio calls.
  - Finding: Balloon flights may be operating from March 1 to October 31. The operation will be 10-25KM south of the rock during early morning. Information regarding the potential operation is currently listed in ERSA, page FAC – AYE – 3 – Additional Information. CASA Balloon Flight Operations Inspector (FOI) is in the process of determining safety requirements for operation. The commissioning flights and Air Operators Certificate (AOC) application has been progressing under the guidance of relevant departments within CASA. Commissioning flights have operated successfully.
  - Improvement Opportunity: Add a Balloon symbol to the VTC or require the tethered balloon operator to make radio calls whilst operating.
- Issue: Uncharted Helipads at Voyages Resort and Longitude 131 Resort creates a difficulty for itinerant aircraft operators to gain situational awareness of where the helicopters are operating to/from.
  - Finding: Helicopter Landing Sites are not required to be depicted on charts and are not regulated by CASA.
  - Improvement Opportunity: Ayers Rock Aerodrome Operator request Airservices Australia to include both HLS' on the inset chart for Uluru on the Alice Springs VTC.
- Issue: RPAS operations within the parachute drop zone delaying parachute drops.
  - Finding: The current CASA app shows that operation of RPAS is approved within the area this is due to the helipads not being displayed on the relevant aeronautical charts. The Northern Territory Government states that you need a permit to fly a drone in an approved NT park or reserve. The Northern Territory Government authorises its Parks and Wildlife staff the power to instruct operators of drones to stop flying as well as the abiltiy to issue a fine to the operator.
  - Improvement Opportunity: Investigate whether the current CASA drone safety app can be amended to advise of local state government laws restricting the operation of Drones within the Kata Tjuta National Park.

- Issue: Skydiving operation is delayed from dropping parachutists whilst airborne when RPT services arrive and depart and are within the circling area.
    - Finding: The current Manual of Air Traffic Services (MATS) states this is a restriction for this operation in Class G airspace.
    - Improvement Opportunity: Skydive operator to co-ordinate parachute drops to occur outside the expected movements of RPT aircraft.
- Issue: Some stakeholders stated that the CA/GRS creates radio congestion, is inefficient, redundant and detracts from the efficiency of CTAF procedures, particularly during VFR conditions involving charter and sightseeing aircraft.
    - Finding: The CA/GRO may be adding to frequency congestion during busy periods.
    - Improvement Opportunity: CA/GRO to undertake regular reviews of procedures.
- Issue: An Airline Pilot Representative organisation consider that improving levels of safety at Ayers Rock would require the following; to provide surveillance based IFR / IFR separation services to low level to expedite arrivals and departures. There is currently a lack of separation services between IFR aircraft when surveillance is available.
    - Finding: Current Air Navigation Service Provider of IFR/IFR services are based on procedural separation standards. Analysis reveals no recorded instances via ATSB or safety issues. Airservices considers that there is merit in conducting a trial of lowering Class E airspace in the vicinity of Ayers Rock. Lowering Class E airspace could enhance service delivery to IFR aircraft at no additional cost to Airservices. Airspace users (including VFR aircraft) could benefit from fitment of ADS-B avionics through the use of surveillance separation standards and surveillance information services.
    - Recommendation: Airservices should investigate the benefits of conducting a trial of lowering Class E airspace in the vicinity of Ayers Rock.
- Issue: RPT operators have expressed concerns with inbound and outbound RPT jet aircraft from Sydney and Melbourne due to the two-way air route structure.
    - Finding: Current airline operator advises of RPT jet aircraft on reciprical tracks during approach and departure from Ayers Rock. Southern departures along the air route G222 can plan via Z50 via the IFR waypoint AVMON.
    - Improvement Opportunity: Airservices create a similar initial offset air route, such as (Z50 to G222), for departures on air route T29.
- Issue: An RPT operator has expressed a request for more direct routing options for IFR flights to and from YBBN.
    - Finding: There are currently no IFR departure routes to the East of Ayers Rock that would provide for departures toward YBBN
    - Improvement Opportunity: Airservices create a more direct route option to/from YBBN allowing better efficiency (fuel burn) as well as better operational management with respect to to departure and arrival traffic seperation management.

ANNEX A – AUSTRALIAN AIRSPACE STRUCTURE

Class	Description	Summary of Services/Procedures/Rules
A	All airspace above Flight Level (FL) 180 (east coast) or FL 245	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	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. IFR separated from IFR, VFR and Special VFR (SVFR) by ATC with no speed limitation for IFR operations. VFR receives traffic information on another VFR but is 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, Parafield, 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 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 are provided with traffic information on all VFR. VFR receives traffic on all other aircraft but are 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 does 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	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 B – REFERENCES

- Aeronautical Information Publication – 01 March 2018 May 2017
- *Airspace Act 2007*
- Airspace Regulations 2007
- Australian Airspace Policy Statement – 2015
- En route Supplement Australia – 01 March 2018