Australian Government
Civil Aviation Safety Authority
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Mildura Airspace Review

July 2018

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Document control:

Version	Issue/Nature of Revision	Date
0.1	Initial draft	March 2018
0.2	Reviewed document	March 2018
0.3	Management review	April 2018
0.4	Document rewrite	May 2018
0.5	Stakeholder feedback comments included	June 2018
1.0	Final version	July 2018

Document Reference: D18/101765
File Reference: OP17/270

1 Executive Summary

1.1 General

1.1.1 The Civil Aviation Safety Authority's (CASA) Office of Airspace Regulation (OAR) has conducted an airspace review within a 20 nautical mile (NM) radius of Mildura Airport. The review examined the airspace architecture, classifications, procedures and infrastructure from the surface to Flight Level 180.

1.1.2 The OAR does not recommend any change to the airspace classification. This is based upon the reviewed safety and incident data, consultation with stakeholders and reviewing of annual aircraft and passenger movement statistics. The review determined that the current airspace classification is fit for purpose[1].

1.1.3 The review has 1 recommendation that Airservices ensure appropriate agencies are involved in the amending of published aeronautical information.

2 Review Recommendations and Opportunities for Improvement

2.1 The review recommends:

Recommendation 1 Airservices Australia ensure appropriately authorised agencies are involved in the process to amend published aeronautical information.

2.2 The review identified the following opportunities for improvement:

- That issues regarding ineffective or improper radio communication be included in safety briefings and seminars for the Mildura region.
- That Mildura aerodrome consider including information about circuit direction as part of the recording on the Aerodrome Frequency Response Unit.

[1] 'fit for purpose' means that the product or service is satisfactory for the purpose it was designed for.

3 Introduction

3.1 Background

3.1.1 The Office of Airspace Regulation (OAR) conducted an airspace review within 20 nautical miles (NM) radius of Mildura Airport (hereafter referred to as Mildura). The review examined the airspace architecture, classifications, procedures and infrastructure from the surface to Flight Level 180 (FL180).

3.1.2 CASA previously conducted an aeronautical study of the airspace around Mildura in 2010[2] that included the same vertical and lateral dimensions for this review. The 2010 study included 9 recommendations that have since been finalised or will be closed as part of this review.

3.1.3 The 2010 study indicated that there was a proposed development of a Distillate-Fired Peaking Power Station at Buronga, approximately 20 kilometres (km) to the north east of Mildura. This proposal has not proceeded and there is no need to determine if a Danger Area should be declared around Buronga, as suggested in the 2010 study.

3.1.4 Mildura is a certified aerodrome owned by the Mildura Rural City Council and operated by the Mildura Airport Pty Ltd. The Mildura Rural City Council is the single shareholder of this corporate entity.

3.1.5 The aerodrome is located approximately 8 km south-west from the central Mildura business area and 4 km south-west of residential developments. It is located 3 km north-east of the Sunraysia Gliding Club airfield and approximately 24 km south-east of Wentworth Airport.

3.1.6 Wentworth Airport (hereinafter referred to as Wentworth) is a registered aerodrome owned by the Wentworth Shire Council. There are no controlled aerodromes in the review area.

3.1.7 Mildura supports 231,700 passengers yearly[3]. Aircraft types operating at the aerodrome include Boeing 737 (B737) jets, medium size turbo-prop aircraft including Bombardier's de Havilland Canada Dash 8 (DHC8), Saab 340 (SF340) and Beechcraft King Air 200. A range of single and twin-engine aircraft operates from Mildura and many of these aircraft are operated as part of recreational aviation activities.

3.1.8 The Mildura Airspace Review area has Class G airspace and Class E airspace. Class E airspace in the review area commences at differing levels being 12,500 feet (ft) above mean sea level (AMSL) along the Mildura-Melbourne corridor and FL180 for the remaining area. Instrument flight rules (IFR) and visual flight rules (VFR) aircraft operate within the review area.

3.1.9 Air Traffic Control (ATC) surveillance is a mix of Automatic Dependent Surveillance – Broadcast (ADS-B) and radar. There is no reliable surveillance coverage in area surrounding Mildura below 6,500 ft AMSL on the Melbourne-Mildura corridor and below 10,000 ft AMSL for the remaining area surrounding Mildura.

[2] Aeronautical Study of Mildura May 2010: Civil Aviation Safety Authority, Canberra 2010.
[3] Yearly average passengers number 2013-2017.

4 Mildura airspace

4.1 Airspace Review

4.1.1 A risk-based assessment that included reviewing recorded aircraft movements and passenger numbers, review of Australian Transport Safety Bureau (ATSB) and Airservices Australia (Airservices) recorded incidents and the feedback from stakeholders has affirmed no change to the airspace is required.

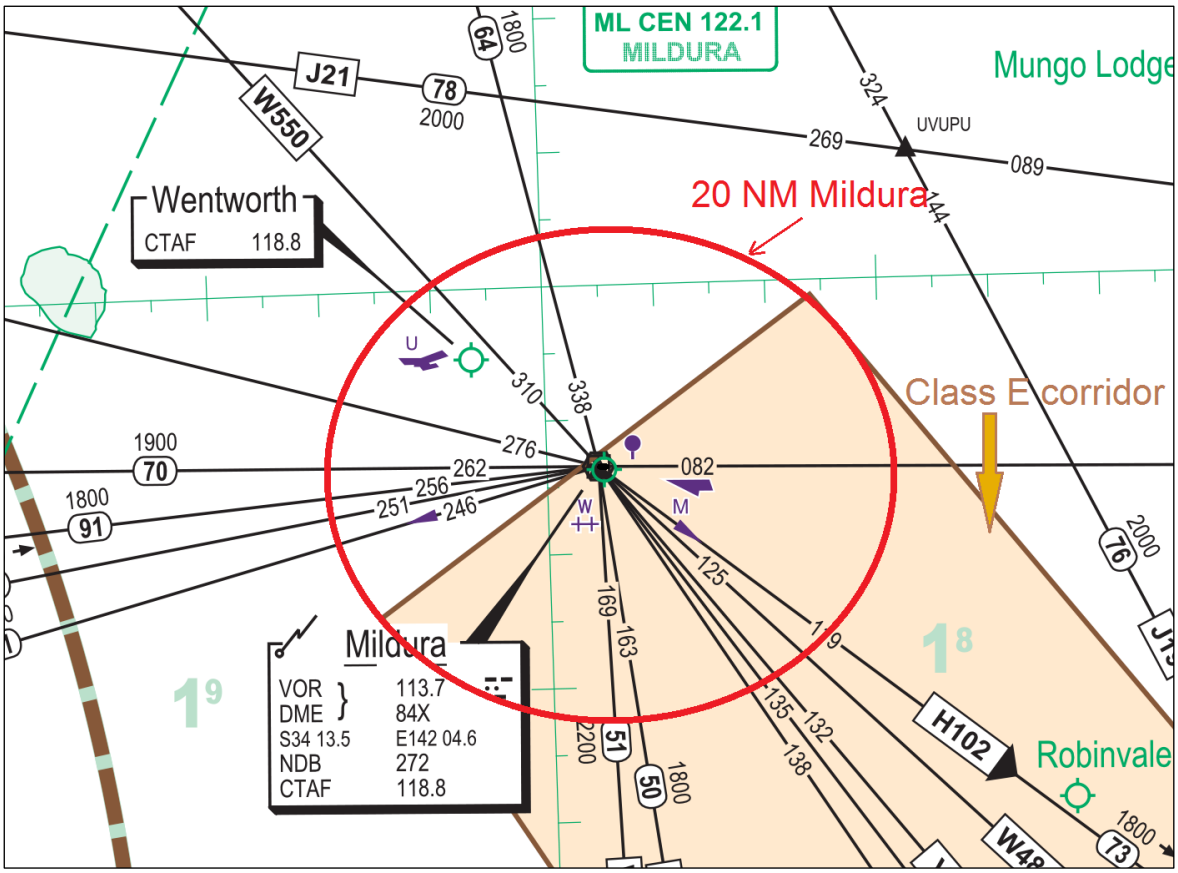

Figure 1: Extract from En-Route Chart Low 2 of the review area and Class E corridor[4]

4.1.2 From 2010 to 2013 aircraft movements and passenger numbers increased yearly on average by 22.2% and 2.7% respectively. These numbers have stabilised during the period from 2014 to 2017 with no growth in aircraft movements and 0.65% average annual growth in passenger movements. Aircraft and passenger movements are detailed later in this review.

4.1.3 Most passenger movements are undertaken by three passenger transport providers, Regional Express (Rex), QantasLink and Virgin Australia (Virgin). Rex operate SF340 aircraft, approximately 10 flights[5] each weekday and 12 flights on weekends, QantasLink operate DHC8 aircraft, approximately 6 flights each day and Virgin B737 aircraft averaging two flights a day.

4.1.4 The major passenger transport operators are currently satisfied with the safety of their operations within the study area. It is acknowledged that operational risk assessments are constantly reviewed by these operators and can change when additional factors that could impact operations are identified.

4.1.5 The expansion of aircraft going to Mildura such as B737, Fokker 100 (F100) and Fokker 70 due to additional charter and fly-in/fly-out (FIFO) operations will increase the number of passenger and aircraft movements at the aerodrome. Additionally, seasonal type

[4] Source: En-Route Chart Low (ERC-L) 2, 2017 Airservices Australia.
[5] Flight includes arriving and departing aircraft. 1 flight for arriving and 1 flight for departing equals 2 flights.

aircraft such as those with firefighting capabilities will have an increased presence at Mildura because of aerodrome infrastructure developments currently being undertaken.

4.1.6 There are no Restricted Areas or Danger Areas within the review area.

4.1.7 An analysis of the reported incidents to the ATSB and Airservices identified no significant reported issues. Causal factors to a number of the incidents are based on ineffective communications between aircraft within the vicinity of Mildura. The OAR suggests that ongoing education and information regarding the standard of radio communication continues to be delivered or made available to pilots.

4.1.8 ATC are satisfied with the current airspace classification with regard to aircraft entering or leaving controlled airspace within the review area. ATC were not aware of any reportable airspace issues within this area.

4.1.9 The OAR will continue to monitor the increase in these aircraft movements, passenger numbers and applicable risk incident data to determine if a supplementary review is required.

4.1.10 The current airspace is fit for purpose and no change is required.

5 Published information

5.1 Mildura En Route Supplement Australia (ERSA) entry

5.1.1 The Mildura ERSA entry amendment effective 2 March 2017 included the prohibition of the following aviation activities:

- Gliding operations are not to occur above Mildura aerodrome;
- Ballooning activities are prohibited within a 5 NM radius of Mildura aerodrome; and
- Aerobatic activities are prohibited within a 5 NM radius of Mildura aerodrome.

5.1.2 This amended information was not submitted to the OAR as part of the Request for Change (RFC) process[6]. Failing to adhere to this RFC process resulted in published aeronautical information in relation to the airspace through Airservices that was not approved by CASA. Feedback received from various stakeholders as part of the consultation process for this review, clearly indicated that this ERSA entry was not supported and that it did impact aviation activity within the airspace.

5.1.3 The amended information was removed by CASA via NOTAM C147/17. The ERSA effective 1 March 2018 is published with the prohibitions removed.

5.1.4 It is recommended that Airservices establishes a process that assures that appropriately authorised areas approve amendments prior to publication.

6 Other issues, observations and opportunities for improvement

6.1 Radio communication

6.1.1 There is an opportunity for improving the awareness of effective and proper radio communication used by pilots.

6.1.2 An analysis of reported incidents within the review area identified ineffective radio communication as a causal factor of the airspace incidents.

6.1.3 Radio procedures and phraseology does differ between pilots including those pilots where English is a second language. A failure to effectively communicate does impact upon the pilot's situational awareness.

[6] The RFC process enables an appropriate review of the submission, including the consultation undertaken by the proponent and a safety assessment by CASA in relation to the proposed change. This is completed prior to approval being given to publish the requested change.

6.1.4 CASA and RA-Aus Regional Safety Representative at Mildura provide safety seminars on various issues to local pilots in the area. It is suggested that the topic of correct radio procedures be included as part of those safety seminars.

6.2 Mildura right hand circuit patterns

6.2.1 There is an opportunity for improving awareness by including circuit direction information on the Aerodrome Frequency Response Unit (AFRU).

6.2.2 The circuit direction for runway 27 and runway 36 at Mildura is published in ERSA. There was sufficient anecdotal information received to identify that at times, pilots are not complying with the published information.

6.2.3 Mildura has an AFRU which can include other information about the circuit directions as part of the recorded response. The aerodrome operator should consider including this information as part of the AFRU response.

6.3 The classification of airspace around Mildura should be amended

6.3.1 The airspace within the review area is primarily Class G uncontrolled airspace. The review found that the airspace classification is fit for purpose.

6.3.2 The current aircraft movements, passenger transport aircraft movements and passenger totals do not exceed the airspace criteria thresholds within the Australian Airspace Policy Statement that should initiate a risk review regarding the airspace classification. Passenger transport aircraft movements require an increase greater than 38% to consider a risk review. The Mildura Regional Airport Master Plan 2017-2037 forecasts a conservative growth rate of 5%.

6.3.3 ATC have expressed that no change of the controlled airspace within the review area is required. Lowering the controlled airspace level would increase the workload for ATC due to the reduced time to establish a separation standard before aircraft enters controlled airspace. If a separation standard is not established, aircraft will remain outside controlled airspace until one can be established. This would impede aircraft continuous climb operations.

6.3.4 Reported incident totals within the review area have been consistent during the same period. There have been 9 airspace occurrences for the review period. Based on risks reviewed, there is no requirement to amend the current airspace classification.

6.3.5 The OAR will continue to monitor aircraft and passenger movements numbers and reported incidents as part of its standard operations and where applicable undertake a risk review regarding the airspace classification. No change to the airspace classification is recommended.

7 Conclusion

7.1 General

7.1.1 The OAR has conducted an airspace review of the airspace procedures and classifications within a radius of 20 NM of Mildura from the surface to FL180. The review based on assessed information included future projections

7.1.2 The review has determined that the existing airspace classification is fit for purpose and the complies with the requirements of the Act for safe operations, efficient use of the airspace and enables equitable access to that airspace for all users of the airspace.

7.1.3 The recommendation and opportunities for improvement that are listed as part of this review are not directly attributed to airspace, however the same matters do impact aviation activities that occur within the airspace. These matters will be passed onto the appropriate areas and may improve efficiency and shared use of the airspace within the review area.

Appendix 1 References

Airservices Australia, 2017. Australia ERC Low L2 Effective 9 November 2017: Airservices Australia;

Airservices Australia, 2017. Departure and Approach Procedures (DAP) East Amendment 153 Effective 9 November 2017: Airservices Australia

Airservices Australia, 2017. En Route Supplement Australia (ERSA) Effective 17 August 2017: Airservices Australia

Airservices Australia, 2018. En Route Supplement Australia (ERSA) Effective 1 March 2018: Airservices Australia

Airservices Australia, 2012. World Aeronautical Chart (WAC) – Adelaide – 17th Edition

Airspace Act 2007 Australian Government, Canberra

Airspace Regulations 2007, Australian Government, Canberra

Arcadis Australia Pacific Pty Ltd (2017). Mildura Regional Airport Master Plan (2017-2037);

Australian Airspace Policy Statement 2015, Australian Government, Canberra

Aviation Safety Incident Report (ASIR) 2010-2017, Australian Transport Safety Bureau, Canberra

Civil Aviation Safety Authority, Office of Airspace Regulation. (2010). Aeronautical Study of Mildura – May 2010;

Corporate Integrated Reporting and Risk Information System (CIRRIS) 2010-2017, Airservices Australia, Canberra

Department of Infrastructure and Regional Development 2015. Australian Airspace Policy Statement 2015, Canberra. https://www.legislation.gov.au/Details/F2015L01133

Google Earth V 7.1.5.1557. 2017. Mildura, Victoria http://www.earth.google.com

Mildura International Balloon Fiesta Inc written submission Mildura Airspace Review.

Mildura Sports Aviation Inc. General Meeting 10 December 2017 Agenda Item Mildura Airspace Review written submission.

Sunraysia Gliding Club Inc. written submission Mildura Airspace Review.

Terms of Use Mildura Airport Pty Ltd for Mildura Airport Date: 1st July 2017 http://milduraairport.com.au/airport-documents/

Annex A 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. • 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 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.

Annex B Stakeholder consultation list

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

Organisation
Airservices Australia
QantasLink
Virgin Australia
Regional Express
Royal Flying Doctor Service
Mildura Airport
Wentworth Shire Council
Aircraft Owners and Pilots Association of Australia
Pearson Aviation
Sunraysia Sport Aircraft Club
Sunraysia Gliding Club
Mildura International Balloon Fiesta Inc.
Ramair Flying Services
Mildura Sport Aviation
Bendigo Aviation
Flight Training Adelaide

Annex C Consolidated Summary of Responses

The following sections are the consolidation summary of comments or responses received, the OAR's response and disposition to actions to the Mildura Airspace Review.

Comment 1 – Response to Recommendation – Airservices Australia ensure appropriately authorised agencies are involved in the process to amend published aeronautical information.

Airservices is undertaking work to minimise the risk of changes to aeronautical information being accepted for processing by unauthorised parties. This work includes updating internal documented change proposal tools which identifies the ownership of information promulgated in the integrated AIP. It is understood that CASA is also conducting work in respect of information for which CASA are responsible, including airspace information.

CASA Response
The OAR notes the submission made by the respondent.

Disposition
The processes being reviewed by the respondent will mitigate the risk of changes to aeronautical information being accepted for processing by unauthorised parties.

Comment 2 – Response to stakeholder list

A respondent requested the stakeholder list to include their organisation.

CASA Response
The OAR noted that the respondent was involved in the consultation process and should be included in the stakeholder list.

Disposition
The stakeholder list has been updated to include the respondent's organisation.

Comment 3 – Grammatical errors and surveillance enhancement

A respondent questioned why no recommendation was made in relation to Airservices Australia improving the surveillance coverage at Mildura given traffic mix and suggested incomplete sentence structure within the review.

CASA Response
The OAR noted the response.

Disposition
Based on the reported incidents and occurrences and the number of passengers and aircraft movements at Mildura, there is no recommendation to change the airspace classification or surveillance. CASA will continue to monitor the data and if applicable undertake a further review. Document has been reviewed and updated.