13 January 2022

Policy Statement

POLICY FOR RADIO MANDATORY ZONES AND TRANSPONDER MANDATORY ZONES

1 Introduction

1.1 Regulation (EU) No 923/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 lays down the common rules of the air and operational provisions regarding services and procedures in air navigation services (ANS). The annex to this Regulation contains and is referred to as the Standardised European Rules of the Air (SERA).

1.2 SERA.6005 details rules pertaining to the designation and operation of radio and transponder mandatory zones; known respectively as RMZ and TMZ. However, on its adoption into law in 2012, SERA.6005 was not accompanied by acceptable means of compliance (AMC) and guidance material (GM). Consequently, to provide detailed policy and guidance on the establishment of, and operations within RMZs and TMZs, in 2014, the CAA published an Airspace Policy Statement.

1.3 Following the end of the EU Exit transition period on 31 December 2020, the CAA has been able to utilise the content of that 2014 policy statement to develop new AMC and GM to SERA.6005 and SERA.14001, thereby improving the visibility of these provisions to ANS providers (ANSPs) and airspace users.

1.4 These AMC and GM are contained on the CAA's UK Regulations website, whilst the Official Record Series (ORS) 9 Decision enabling these AMC and GM is on the 'Publications' area of the CAA website under Official Record Series 9.

1.5 The purpose of this policy document is to set those AMC and GM within the wider context of UK airspace policy.

1.6 References to EU regulations in this Policy Statement are to those regulations as retained and amended in UK domestic law under the European Union (Withdrawal) Act 2018.

1.7 This policy statement supersedes that titled 'Policy for Radio Mandatory Zones and Transponder Mandatory Zones' issued on 14 August 2015.

2 Background

2.1 The CAA's statutory obligations include the need to "satisfy the requirements of operators and owners of all classes of aircraft" and to "secure the most efficient use of airspace consistent with the safe operation of aircraft and expeditious flow of air traffic"[1]. This has led to the adoption of the principle that the least restrictive classifications of airspace should be the norm in UK airspace design, with more restrictive classifications being established to satisfy a demonstrable safety need.

2.2 A radio mandatory zone (RMZ) and/or transponder mandatory zone (TMZ) is established when the establishment of a more restrictive classification of airspace is not warranted but additional measures to enhance flight safety are required.

[1] Section 70 of the Transport Act 2000.

2.3 The objective of a RMZ/TMZ is to enhance the conspicuity of aircraft operating within, or in the vicinity of, complex, or otherwise busy airspace when the establishment of a more restrictive classification of airspace is not warranted, in order to maintain a balance between safe, efficient operations and fair, equitable access for all airspace users. Enhanced conspicuity can enable, as appropriate:

- airborne collision warning and/or avoidance systems;
- a 'known' or 'recognised' air traffic environment which, in turn, permits ATS to provide more specific traffic information on collision hazards; and,
- ground-based safety nets such as short-term conflict alert (STCA) and minimum safe altitude warning (MSAW).

2.4 In addition, a RMZ may also be notified to facilitate:

- the provision of flight information, alerting and search and rescue services[1]; or
- coordination with appropriate military units or with ATS units in adjacent States in order to avoid the possible need for interception for the purpose of identification[2].

2.5 Traditionally, a TMZ is associated only with pressure-altitude reporting secondary surveillance radar (SSR) transponders capable of operating in Mode S or, in exceptional circumstances, SSR Modes A and C. However, the advent and increasing affordability of technology such as automatic dependent surveillance – broadcast (ADS-B) means that the concept of a TMZ may now evolve to utilise alternate types of electronic conspicuity systems, where such systems are:

- deemed suitable, appropriate and proportionate;
- prescribed as alternative provisions for that particular airspace by the ANSP; and,
- notified in the Aeronautical Information Publication (AIP).

3 Definitions

3.1 For the purposes of this policy statement, the following definitions apply:

a. 'Air traffic' means all aircraft in flight or operating on the manoeuvring area of an aerodrome. (UK Reg (EU) No 923/2012 Article 2(26))

b. 'Air traffic service (ATS) means a generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service). (UK Reg (EU) No 923/2012 Article 2(32))

c. 'ATS surveillance service' is a term used to indicate a service provided directly by means of an ATS surveillance system. (ICAO Doc 4444 PANS-ATM)

d. 'ATS surveillance system' is a generic term meaning variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of aircraft.

Note. A comparable ground-based system is one that has been demonstrated by comparative assessment or other methodology, to have a level of safety and performance equal to or better than monopulse SSR. (CAA CAP 1430)

e. 'Broadcast' means a transmission of information relating to air navigation that is not addressed to a specific station or stations. (CAA CAP 1430)

f. 'Known traffic' means air traffic, the current flight details and intentions of which are known to the air traffic controller/FISO. (CAA CAP 1430)

[1] SERA.4001(b)(3) and SERA.5025(b).
[2] SERA.4001(b)(4) and SERA.5025(b).

g. ‘Radio mandatory zone (RMZ)’ means an airspace of defined dimensions wherein the carriage and operation of radio equipment is mandatory. (UK Reg (EU) No 923/2012 Article 2(106))

h. ‘Recognised air traffic environment’ is the situation which results from the deployment of a transponder mandatory zone (TMZ) where all air traffic within a defined volume of airspace is conspicuous to air traffic services through the carriage and operation of a Mode S SSR transponder (unless operating in compliance with alternative provisions prescribed for that particular airspace by the TMZ Controlling authority that will achieve a cooperative electronic conspicuity environment), but where there is no requirement for air traffic to maintain continuous air-ground voice communication watch. (CAA CAP 1430)

i. ‘Transponder mandatory zone (TMZ)’ means an airspace of defined dimensions wherein the carriage and operation of pressure-altitude reporting transponders is mandatory. UK Reg (EU) No 923/2012 Article 2(136))

4 Policy on the Establishment and General Operating Procedures of RMZ/TMZ

4.1 RMZ/TMZ are established in accordance with the requirements of the CAA’s Airspace Change Process (CAP 1616)[3]. CAP 1616 sets out the specific requirements for airspace change proposals and permits that process to be scaled to the appropriate level of the change. The level of airspace change is subject to confirmation by the CAA following the change sponsor’s completion of option development and options appraisal (Steps 2A and 2B of the airspace change process).

4.2 An application to establish, amend or disestablish a RMZ/TMZ shall be made by submitting a DAP1916 Statement of Need in accordance with CAP 1616.

4.3 RMZ/TMZ should be of the minimum dimensions practicable to meet the safety requirements identified by the change sponsor.

4.4 Provision should be made by RMZ and TMZ Controlling Authorities[4] for aircraft that are unable to comply with the notified requirements for flight in a RMZ/TMZ to gain access, where a demonstrable requirement exists. Such provisions should be promulgated, as appropriate in the AIP by the Controlling Authority.

4.5 The Controlling Authority of a notified RMZ/TMZ should have sufficient resource in place to ensure that the airspace is managed in accordance with the sponsor’s safety assessment as approved by the CAA in the airspace change decision document; for example, where appropriate, suitable ATS provision for the duration of activation of the subject airspace.

5 Specific RMZ Operating Procedures

5.1 AMC1 SERA.6005(a)(1) defines when two-way radiocommunications are considered to have been achieved between the pilot seeking to enter a RMZ and the ANSP.

5.2 A pilot may be instructed to “STANDBY” by the ANSP; either before the initial call is made or following their initial call. In that instance, two-way radiocommunications are not considered to have been achieved and the pilot should remain outside the RMZ.

5.3 ANSPs should not unnecessarily delay radiotelephony (RT) information transmissions by requesting pilots to ‘standby’, and are required to resume communications with pilots as soon as possible after having instructed them to ‘stand by’.

[3] CAP 1616 Airspace Design: Guidance on the regulatory process for changing airspace design including community engagement requirements.

[4] In the context of SERA.6005(a) and SERA.6005(b), RMZ and TMZ Controlling Authorities are referred to as the air navigation service provider (ANSP).

6 Alternative Provisions Prescribed by the ANSP

6.1 SERA.6005(a) and SERA.6005(b) indicate that alternative provisions may be prescribed for operation within RMZ and TMZ by the ANSP. As these relate to TMZ, such alternative provisions may include the use of alternate forms of electronic conspicuity data, such as ADS-B, and which satisfy the pressure altitude reporting requirement[5] for a TMZ, where their use has been addressed within the airspace change safety assessment. Issues to consider in prescribing alternative forms of electronic conspicuity for use within a TMZ are described in Annex A.

6.2 In developing the provisions required in paragraph 4.4 above, TMZ Controlling Authorities should consider at least the following scenarios:

- flights without serviceable SSR transponder equipment or alternative forms of electronic conspicuity that meet the equipment type/s prescribed by the TMZ Controlling Authority;
- flights which are non-radio equipped and without serviceable SSR transponder equipment or alternative forms of electronic conspicuity that meet the equipment type/s prescribed by the TMZ Controlling Authority;
- flights originating from aerodromes/landing sites within the TMZ which are either non-radio equipped, or without serviceable SSR transponder equipment or alternative forms of electronic conspicuity that meet the equipment type/s prescribed by the TMZ Controlling Authority, or both.

7 Review of Policy

7.1 The CAA shall review this policy statement on a discretionary basis but not less than triennially from its publication date.

8 Enquiries

8.1 Enquiries concerning RMZ/TMZ policy should be addressed to the CAA at:

Airspace & ATM Policy
Airspace, ATM & Aerodromes
Aviation House
Beehive Ring Road
Crawley
West Sussex RH6 0YR

E-mail: ATS.Enquiries@caa.co.uk

8.2 Enquiries concerning the establishment and operation of RMZ/TMZ should be addressed to the CAA at:

Airspace Regulation
Airspace, ATM & Aerodromes
Aviation House
Beehive Ring Road
Crawley
West Sussex RH6 0YR

E-mail: airspaceregulation@caa.co.uk

[5] UK Reg (EU) No 923/2012 Article 2(136) refers. Electronic conspicuity devices which report geometric height information are not permitted to be used to determine whether altitude differences exist between aircraft (ICAO Doc 4444 PANS-ATM section 8.5.5.1.2 refers) and thus their use in the provision of ATS is limited.

Annex A

Issues to consider in prescribing alternative forms of electronic conspicuity within TMZ

A.1 In developing safety requirements concerning the use of alternative forms of electronic conspicuity within a TMZ, the prospective airspace controlling authority should consider, inter alia:

- the types of airspace user that are likely to seek to operate within the TMZ and thus what forms of electronic conspicuity device may be carried.
- whether a requirement exists for interaction with ATS surveillance equipment, or just to enable airborne collision warning and/or avoidance systems. Consider:
  - Is it necessary to provide an ATS surveillance service to all flights? Where required, can procedural separation minima be applied?
  - Can existing ATS surveillance equipment be adapted to incorporate and display information from other forms of electronic conspicuity, for example, ADS-B?
  - The effects on ATS workload of utilising a form of electronic conspicuity which is inter-operable with airborne collision warning and/or avoidance systems and not ATS surveillance systems.
- the minimum specification of alternative forms of electronic conspicuity which satisfy the safety requirements developed for the operation of the TMZ; these include:
  - As a minimum, alternative forms of electronic conspicuity must provide pressure altitude reporting which achieves the required level of accuracy.
  - Where required, the interoperability of the electronic conspicuity device with existing airborne collision warning systems.
  - Performance requirements of the ground and airborne system in relation to any intended ground-based function.

A.2 The carriage of airborne collision avoidance or warning systems, or of particular forms of electronic conspicuity shall not be a factor in determining the need for air traffic services in a given area.

A.3 References to consider:

- Electronic Conspicuity Devices (CAP 1391).