

EXPLANATORY MEMORANDUM TO
THE AIR NAVIGATION (AMENDMENT) ORDER 2019
2019 No. 261

1. Introduction

- 1.1 This explanatory memorandum has been prepared by the Department for Transport and is laid before Parliament by Command of Her Majesty.

2. Purpose of the instrument

- 2.1 This instrument amends the Air Navigation Order 2016 (S.I. 2016/765) (“the ANO 2016”) to extend the flight restriction zone at protected aerodromes, within which there are restrictions on flights by small unmanned aircraft (“SUA”) of 20kg or less including small drones. In most cases the new flight restriction zone will include the aerodrome traffic zone (“ATZ”) or an equivalent area, and runway protection zones extending 5km from the runway threshold or thresholds, to protect aircraft take-off and landing paths. SUA flights within the flight restriction zone will be prohibited at all times and for all SUA, unless the required permission or permissions have been obtained.

3. Matters of special interest to Parliament

Matters of special interest to the Joint Committee on Statutory Instruments

- 3.1 None.

Matters relevant to Standing Orders Nos. 83P and 83T of the Standing Orders of the House of Commons relating to Public Business (English Votes for English Laws)

- 3.2 As the instrument is subject to negative resolution procedure there are no matters relevant to Standing Orders Nos. 83P and 83T of the Standing Orders of the House of Commons relating to Public Business at this stage.

4. Extent and Territorial Application

- 4.1 The territorial extent of this instrument is the United Kingdom.
- 4.2 The territorial application of this instrument is the United Kingdom and (by virtue of article 17 of the ANO 2016) on or in the neighbourhood of an offshore installation.

5. European Convention on Human Rights

- 5.1 As the instrument is subject to negative resolution procedure and does not amend primary legislation, no statement is required.

6. Legislative Context

- 6.1 Section 60 of the Civil Aviation Act 1982 allows Orders in Council to be made to regulate air navigation, and this is currently done through the ANO 2016. The ANO 2016 already contains specific provisions (articles 94, 94A-94G and 95) regulating flights by SUA (unmanned aircraft, other than balloons or kites, having a mass of no more than 20kg). Articles 94A to 94G, which included the introduction of flight

restriction zones around protected aerodromes, were inserted in May 2018 by the Air Navigation (Amendment) Order 2018 (S.I. 2018/623).

- 6.2 The safe use of all unmanned aircraft is regulated by European law in Regulation (EU) 2018/1139 (known as the “Basic Regulation”) which came into force on 11 September 2018. Previously only unmanned aircraft of over 150kg were regulated by European law. The European Aviation Safety Agency (EASA) has published proposals for a draft implementing regulation and delegated regulation under the Basic Regulation. Their proposals would enable Member States to set geographical zones in which additional restrictions or requirements apply to unmanned aircraft flights. This instrument is in line with those plans. The latest publically available drafts of the implementing and delegated regulations can be found here: <https://www.easa.europa.eu/document-library/opinions/opinion-012018#group-easa-downloads>. Paper copies can be obtained by using the contact details supplied at the end of this document. Once the proposals have been finalised in the next few months, the Government will review these to consider what, if any, further changes to UK law may be required.
- 6.3 Until exit day, the UK is required to implement and apply EU legislation. As regards the arrangements which will apply in relation to EU legislation in future once the UK has left the EU, the Government remains committed to delivering a Withdrawal Agreement that is supported by Parliament, and will meet any legislative obligations under that Agreement. Irrespective of this, the Government will continue to keep existing legislation on SUAs under review.

7. Policy background

What is being done and why?

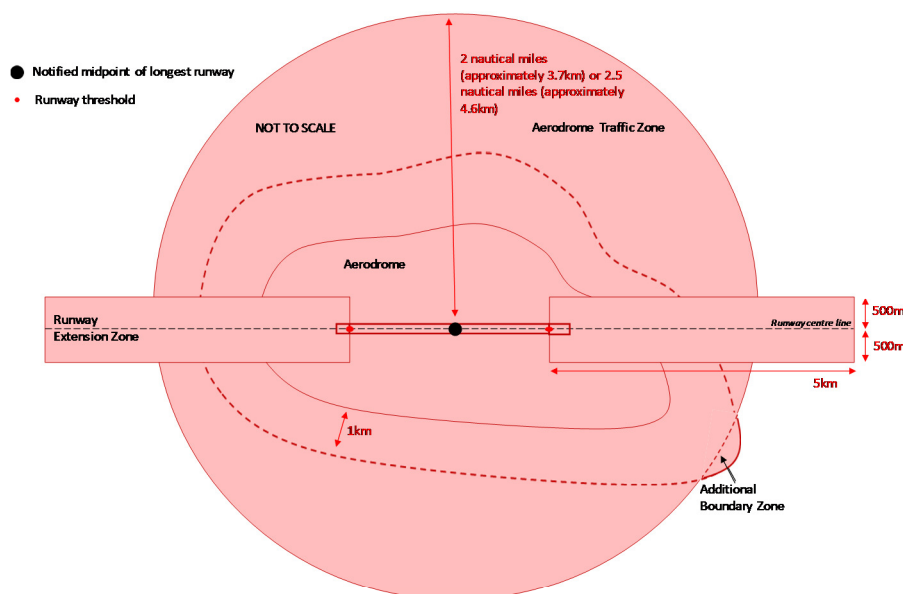
Amendments introduced in May 2018

- 7.1 The flight restriction zones at protected aerodromes, introduced by the May 2018 amendments, comprised an “Inner Zone” which extends to the aerodrome boundary and an “Outer Zone” which extends 1km from the boundary. During the notified hours of watch of any Air Traffic Control Unit (ATCU) or Flight Information Service Unit (FISU) at the aerodrome, all flights within each zone were prohibited unless permission of the ATCU or FISU had been obtained. Outside the notified hours of watch, flights within the Inner Zone required the permission of the aerodrome operator, and if the flight was over 400ft, also the permission of the Civil Aviation Authority (CAA). In the Outer Zone, no permission was required to fly below 400ft outside the notified hours of watch, but the permission of the CAA was needed to fly above 400ft.
- 7.2 This was the first step to protect aerodromes from the risk of SUA coming into unsafe proximity of manned aircraft, whilst the Government collected further evidence and ran a public consultation (see section 10 below). After consideration of the evidence, the Government decided to extend the flight restriction zone around protected aerodromes for safety and security reasons.
- 7.3 The concept of a “protected aerodrome” (originally introduced in the May 2018 amendments) includes EASA certified aerodromes, Government aerodromes, and national licensed aerodromes (all terms defined in Schedule 1 to the ANO 2016). In addition, the Secretary of State has the power to prescribe other protected aerodromes in regulations. This regulation-making power was included to ensure that, should

evidence arise in future demonstrating a safety and/or security case for a flight restriction zone around a particular aerodrome, that aerodrome could become a protected aerodrome.

Extension of flight restriction zone

- 7.4 The extended flight restriction zone around a protected aerodrome introduced by this instrument, where the aerodrome is an EASA certificated aerodrome, a Government aerodrome or a national licensed aerodrome, and has an ATZ, comprises:
- the aerodrome's ATZ, plus
 - one or more runway protection zones 1km wide (or 1.5km at Heathrow Airport – see paragraph 7.9 below) extending 5km from the threshold or thresholds of each runway (a threshold is a point on the runway which marks the start of the portion which is useable for landing), and also
 - an additional boundary zone extending 1km from the boundary of the aerodrome, if that area does not already fall within the ATZ or runway protection zones.
- 7.5 The diagram below lays out the different parts of the flight restriction zone for these aerodromes. The diagram should only be treated as illustrative, as it is not to scale and the exact relationship of the various zones will vary at each aerodrome, based on that aerodrome's size and the location and length of the runway or runways.



Aerodrome traffic zone

- 7.6 An ATZ is an established area at a notified aerodrome within which an ATCU or FISU controls flights, and is defined in article 5 of the ANO 2016. An ATZ has a radius of either 2 nautical miles (approximately 3.7km) or 2.5 nautical miles (approximately 4.6km) depending on the length of the runway, or a radius of 1.5 nautical miles (approximately 2.8km) where it is an offshore installation (although currently no offshore installations are “protected aerodromes”).
- 7.7 The ATZ extends upwards to a height of 2000ft above the level of the aerodrome. This instrument inserts a definition of the “level” of an aerodrome into Schedule 1 to the 2016 Order, to mean the notified elevation of the aerodrome. “Notified” is already defined in Schedule 1 to mean set out in the United Kingdom Aeronautical Information Publication (“AIP”). The AIP is available at http://www.nats-uk.ead-it.com/public/index.php%3Foption=com_content&task=blogcategory&id=165&Itemid=3.html by selecting ‘eAIP AIRAC’. Members of the public may also obtain it in printed form (or DVD) by writing to Aeronautical Information Service (AIS), NATS Swanwick, Room 3115, Sopwith Way, Southampton, Hants, SO31 7AY.

Runway protection zones

- 7.8 The 5km long runway protection zones will begin at the threshold or thresholds of each runway, and will be centred on the runway centre line. Runway thresholds are either “notified” (see paragraph 7.7) or set out in the United Kingdom Military Aeronautical Information Publication (“UK military AIP”). The UK military AIP is available at <https://www.aidu.mod.uk/Milflip/index.php> by selecting ‘UK MILAIP’ and then downloading a zip file. Members of the public may also obtain it in printed form, either by emailing dronesconsultation@dft.gov.uk or by writing to The Drones Team, Department for Transport, Great Minster House, 33 Horseferry Road, SW1P 4DR. The runway protection zones extend to a height of 2000ft above the level of the aerodrome, to match the height of the ATZ. This is necessary to ensure that an SUA user must obtain permission from the relevant ATCU or FISU at the aerodrome to fly up to 2000ft during operational hours. If the runway protection zones were not to extend up to this height, it would be sufficient for an SUA user to obtain the permission of the CAA in order to fly over 400 feet. The approach adopted in this instrument ensures safety by ensuring the ATCU or the FISU have the full picture of, and control over, SUA flights within the runway protection zones up to 2000ft, just as they would in the ATZ.
- 7.9 The runway protection zones will be 1km wide in all cases except at Heathrow Airport where they will be 1.5km wide. This is necessary because there are two runways at Heathrow Airport and these parallel runways are more than 1km apart. This means that if the runway protection zones were only 1km in width, the protection zones of the two runways would be separated by a gap. This could cause confusion amongst SUA users and unnecessary concern to the ATCU and pilots of manned aircraft flying there, as in the air it would be extremely hard to judge if a drone were being flown in one of the two runway protection zones or in the gap between them. Therefore, the runway protection zones at Heathrow will be wider, to eliminate this gap.
- 7.10 This instrument provides that there will be no runway protection zones at the London Heliport. Specific provision is made for the London Heliport because it is currently the only heliport which is a “protected aerodrome” and it has runway thresholds. Helipads do not need runway protection zones, as helicopters do not follow the same

prescribed take-off and landing paths as fixed wing manned aircraft. The ATZ therefore provides adequate protection. In case in future another heliport becomes a protected aerodrome, new article 94B(4)(b) enables regulations to provide that there are no runway protection zones at a particular protected aerodrome or description of protected aerodrome.

Additional boundary zone

- 7.11 The area extending 1km from the boundary of the aerodrome is specifically included in the flight restriction zone to protect aerodromes of larger land area from inadvertently suffering a decrease in protection when compared with the existing position under the May 2018 amendments. If an aerodrome has a large land area, the 1km zone from the boundary may extend outside the ATZ or runway protection zones.

Protected aerodromes with no ATZ

- 7.12 Where a protected aerodrome is an EASA certified aerodrome, a Government aerodrome or national licensed aerodrome, but does not have an ATZ, the flight restriction zone will take the shape of a circle centred on the notified mid-point of the longest runway (or mid-point of the longest runway) and have a radius of 2 nautical miles (approximately 3.7km), the same size and shape as the majority of ATZs. The number of aerodromes in this category is small, and they are usually aerodromes that are not substantial in size and have a low number of flights. Therefore they do not need a flight protection zone as extensive as those aerodromes that have an ATZ by virtue of article 5 of the ANO 2016.
- 7.13 Where an aerodrome is prescribed as a protected aerodrome in regulations as explained in paragraph 7.3 above, the flight restriction zone will also be prescribed at the same time. This flexibility reflects the expectation that if an aerodrome is prescribed, the reasons for doing so are likely to be unique to that particular aerodrome, and that this may therefore require a very tailored flight restriction zone.

Reasons for the extension

- 7.14 The Government has chosen to extend the flight restriction zone for a number of important reasons. The incidents at London's Gatwick and Heathrow Airports over Christmas 2018 have reinforced the need to ensure aerodromes and the people using them are fully protected from the use of SUAs which have the ability to cause significant disruption to the travelling public, concern about the security of the aerodrome, aircraft and people, and economic impact. The extended flight restriction zone will reduce the airspace where there is possibility for SUAs to come into close proximity with manned aircraft. This was consistently requested by airports and airlines in their responses to the Government's recent consultation on the use of SUA to improve safety (see section 10). Many respondents who felt that the existing restriction is insufficient cited the fact that an aircraft landing using an average three degree glide slope would be below the maximum 400ft drone height outside of the current 1km restriction and therefore at risk of a mid-air collision with a drone being flown legally. Respondents who detailed this analysis included airports, airlines, pilots and other affiliated organisations.
- 7.15 The inclusion of a protected aerodrome's ATZ or an equivalent area within the flight restriction zone protects the flight of helicopters, which may approach an airport from any direction, and other aircraft conducting low circling patterns. Moreover, the runway protection zones protect fixed wing aircraft, such as airliners, during take-off

and landing, which are critical stages of flight. Approach and landing are particularly important since aircraft will tend to be at lower altitude for longer in this phase of flight. The amendments made by this instrument therefore anchor the new runway extension zones to the published runway thresholds, which are designed primarily to ensure safe landing (there is usually one threshold at each end of the runway so the provisions will work correctly regardless of the direction in which the runway is being used). During take-off, aircraft generally ascend more steeply to over 400 feet, where SUA flights already require CAA permission; however it remains important that the ATCU and FISU should have a clear picture of all SUA activity in the area, and that SUA users have a simple rule they can adhere to without having to know whether aircraft are taking off or landing in a particular direction at any particular time. All of these areas have therefore been identified as airspace within which manned aircraft can be below 400ft (the height below which SUA can be flown without permission from the CAA), which is why the additional protection is necessary.

Permissions required

- 7.16 A requirement to obtain permission may relate to a flight, or part of a flight, and in some circumstances more than one permission may be required.
- 7.17 This instrument extends the requirement to obtain permission for SUA flights so that it applies within any part of the flight restriction zone at any time. If an SUA remote pilot wishes to fly within the zone during operational hours, permission of either the ATCU or FISU needs to be sought for safety reasons. In a situation where both an ATCU and FISU are operational at the same time, only the permission of the ATCU is required. “Air traffic control unit” and “flight information service unit” are already defined in Schedule 1 to the ANO 2016. “Operational hours” are either “notified” or set out in the UK military AIP. Outside of these hours, permission of the aerodrome operator will be required for all SUA activity, regardless of height, and, if the flight is above 400ft, also the permission of the CAA. The permission of the CAA is required because an aerodrome operator will be unable to evaluate the safety risk at a height above 400ft where other manned aircraft not associated with the specific aerodrome could be flying.
- 7.18 Requiring permission to fly within any area of the flight restriction zone at any time will provide additional protection to aerodromes from SUAs. This is particularly important from both a safety and security perspective. Operational hours (when an ATCU or FISU is operational) at individual aerodromes can change without significant notice. Requiring a permission to fly at all times avoids a situation where an SUA user inadvertently flies within the flight restriction zone whilst the aerodrome is in use. Furthermore, the capability of SUAs is developing rapidly. They can operate from increasing distances, carry heavier loads, and conduct surveillance. It is therefore important for security reasons that aerodromes handling millions of passenger journeys a year are protected from SUAs at all times. Requiring permission to fly an SUA in any part of the flight restriction zone at any time is also an important step forward in making the law simpler to understand, and therefore comply with.
- 7.19 The permission of the CAA is required for all flights above 400 feet, unless permission from an ATCU or FISU is required. Therefore, permission of the CAA is always necessary for SUA flights above the flight restriction zone.

- 7.20 The Department for Transport will work with aerodrome operators, and others whose permission is required, to ensure airports put in place efficient and easily usable processes for SUA users to obtain permission.

SUA of over 7kg

- 7.21 Article 94 of the ANO 2016 previously included rules specific to SUA over 7kg. This instrument deletes article 94(4)(a) which restricted flight for SUA over 7kg in Class A, C, D or E airspace unless the permission of the appropriate ATCU had been obtained. This is because the vast majority of the airspace referenced will be covered by the rules restricting flights over 400ft and in the ATZ. It is also considered that having one clear rule which applies to all SUA is simpler and easier to understand, and should improve compliance. Article 94(4)(b) of the ANO 2016 also previously prohibited SUA of over 7kg being flown in with an ATZ during notified hours of watch without the permission of the appropriate ATCU. Now that all SUA users will be required to gain permission of the appropriate ATCU or FISU before flying in an ATZ, this instrument deletes article 94(4)(b) as it is no longer necessary.

8. European Union (Withdrawal) Act/Withdrawal of the United Kingdom from the European Union

- 8.1 This instrument does not relate to withdrawal from the European Union / trigger the statement requirements under the European Union (Withdrawal) Act 2018.

9. Consolidation

- 9.1 No consolidation is planned at present.

10. Consultation outcome

- 10.1 The Government ran a public consultation on the use of SUA in the UK from 26 July 2018 to 17 September 2018. The consultation can be found at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/729458/taking-flight-the-future-of-drones-in-the-uk.pdf. There were 3,957 responses received via the consultation online survey, and a further 1,104 replies which were received as correspondence to the Department for Transport. The total number of responses was 5,061.

- 10.2 As part of this consultation, flight restrictions at aerodromes were covered. Feedback from the consultation was varied in relation to restrictions around aerodromes. There was, however, strong consensus from airports and airlines that a larger restriction zone around aerodromes is necessary to ensure SUA do not come into unsafe proximity with manned aircraft, particularly in take-off and landing paths. After consideration, the Government therefore decided to extend the flight restriction zone.

- 10.3 The Government response was published in January 2019 and can be found at: <https://www.gov.uk/government/publications/government-response-to-future-of-drones-in-the-uk-consultation>.

11. Guidance

- 11.1 General guidance to drone users is provided in the Drone Code at: <https://dronesafe.uk/drone-code/>. The CAA also provides guidance on its website at <https://www.caa.co.uk/consumers/unmanned-aircraft-and-drones/>.

- 11.2 This guidance will be updated to reflect the amendments made by this instrument, including a set of maps detailing the flight restriction zone at each protected aerodrome. It is anticipated that the updated guidance and maps will be made publically accessible online the day this instrument comes into force by NATS and the CAA at <https://dronesafe.uk/>.
- 11.3 Maps of ATZs are shown on the traditional CAA UK 1:250,000 and 1:500,000 Visual Flight Rules (VFR) charts, and pictorial representations of ATZs can be obtained for free from a number of “flight planning” websites and drone apps.

12. Impact

- 12.1 The impact on business, charities or voluntary bodies is expected to be under the £5m de minimis threshold above which an Impact Assessment is required. Those impacted by this instrument may need to update procedures but this is likely to be achieved at minimal additional cost.
- 12.2 The impact on the public sector is expected to be similarly minimal.
- 12.3 An Impact Assessment has not been prepared for this instrument due to the low level impact per business.

13. Regulating small business

- 13.1 The legislation applies to activities that are undertaken by small businesses.
- 13.2 No specific action is proposed to minimise regulatory burdens on small businesses.
- 13.3 The decision not to propose any minimising measures has been taken because we do not expect the impact to be significant. However, as part a wider aerodrome restriction review due to take place later this year, the CAA will be considering the extent of any burden on businesses caused by the requirement to have permission before flying an SUA in a flight restriction zone, and whether there are any means to reduce this, for example through more efficient processes, digital means or guidance.

14. Monitoring & review

- 14.1 Article 275 of the ANO 2016 requires the Secretary of State to review it and publish a report within five years after it comes into force and within every five years after that. This includes reviewing provisions which are amended by this instrument. Following a review it will fall to the Secretary of State to consider whether provisions in the ANO 2016 should remain as they are, or be revoked or amended.
- 14.2 The Department for Transport has also instructed the CAA to carry out a review of the effectiveness of restrictions around aerodromes (see paragraph 13.3 above). As part of this review, the CAA will examine the number of permission requests received by ATCUs and FISUs, what percentage were granted, and the reasons for refusals. The CAA also has power under article 266 of the ANO 2016 to create exemptions from any of its provisions, including those amended by this instrument, subject to any conditions it considers appropriate. The review will consider whether there are any areas (such as public parks) near aerodromes where SUAs may be used safely, and which could be granted an exemption. More generally the review will assess the impacts of restrictions, and consider other relevant safety and risk questions, which may result in further amendment of the ANO 2016.

15. Contact

- 15.1 Heather Dorling or Elena Lynch at the Department for Transport, Telephone: 07977 416351; 0207 944 3614 or email: heather.dorling@dft.gov.uk; elena.lynch@dft.gov.uk can be contacted with any queries regarding the instrument.
- 15.2 Gisela Carr, Deputy Director for Technology and International Aviation at the Department for Transport can confirm that this Explanatory Memorandum meets the required standard.
- 15.3 Baroness Sugg, Minister for Aviation at the Department for Transport can confirm that this Explanatory Memorandum meets the required standard.