

RA 2330 - Low Flying

Rationale

Flight at low level reduces the margin for error in aircraft operations and can cause unnecessary annoyance to the public. It is therefore essential that those engaged in the conduct and supervision of low flying ensure the highest standards of flying discipline, pre-flight preparation and briefing are maintained.

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Regulation 2330(1)

Low Flying

2330(1) Low-flying within the UK Low Flying System (UKLFS) **shall** be conducted in accordance with this Regulatory Article and the Restrictions and Procedures contained in the UK Military Low Flying Handbook.

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1. For all low flying which takes place outside the UKLFS, aircrew **should** comply with the more stringent of the limitations promulgated by the MOD or the national or local authorities concerned.

Authorization

2. Training and exercise low flying **should** be authorized before flight.

3. The authorization **should** include brief details of the route or area of operation. For all fixed wing low flying and transit flying by rotary wing at 250 feet above the surface or higher, the minimum separation requirements for that sortie, or if applicable, for different sections of the sortie **should** be stated. For rotary wing training at less than 250 feet minimum separation requirement, special considerations **should** apply according to the nature training and role, and the authorization **should** include the Minimum Separation Distance (MSD) or Minimum Separation Criteria (MSC) when used in conjunction with Above Ground Level (AGL) for the sortie or, if applicable for different sections of the sortie. Within the UK the authorization **should** comply with the restrictions and procedures in the UK Military Low Flying Handbook.

Minimum Separation Requirements

4. **Annoyance.** To avoid unnecessary annoyance to the public, low flying **should** be conducted at the highest separation criteria, such as MSD or MSC when used in conjunction with AGL, consistent with any operational or training requirement, and **should** normally be not less than 250 ft for fixed-wing aircraft, and 100 ft for rotary-wing aircraft, or the separation criteria, laid down in Aviation Duty Holders and Commanders' Orders.

5. **Separation Criteria/Minimum Heights outside UK Airspace.** For low flying outside UK Airspace, the separation criteria/minimum heights **should** be laid down by Aviation Duty Holders and Commanders. Minima **should** be no less stringent than any regulations, promulgated by the national or local authorities concerned.

6. **Low Flying over Congested Areas and Public Assemblies.** Aircraft flying over congested areas of cities, towns and settlements, as detailed within the UK Military Low Flying Handbook, except when taking off or landing, **should** be flown at an altitude sufficient, in the event of a power unit failure to permit a safe emergency landing outside the congested area. Except when participating in a Flying Display, covered under RA2335, the transit altitude **should** never be less than 2000ft AGL (1000ft AGL in the case of rotary-wing aircraft and light propeller driven aircraft except when transiting the Thames Valley Avoidance Area under controlled airspace where the limits from UK Military Low Flying Handbook apply). If because of weather, or any other cause, sufficient height cannot be maintained the congested area **should** be

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avoided unless doing so would endanger the aircraft. Flying over any place where large numbers of persons are assembled or a public assembly is taking place is prohibited below 1000 ft AGL except when:

- a. Specially authorized by MOD (CAS-AS LF).
- b. In connection with a Flying Display and authorized under RA2335.
- c. It is necessary to do so while carrying out arrival or departure procedure at an aerodrome or heliport.

Speed Limitations

7. **Speed Limitations.** The maximum cruise speed within the UKLFS is 450kts. For specific tactical flying activities (for example, target runs, intercept or similar training) the following speed dispensation is permitted:

- a. **Operating Height at or below 150ft MSD.** Maximum speed for short-term tactical activity is 500kts.
- b. **Operating height above 150ft MSD.** Maximum speed for short-term tactical activity is 550kts.

8. **Use of Reheat.** The use of reheat within the UKLFS is prohibited except for essential training requirements, aircraft emergencies or authorized displays.

Avoidance Criteria

9. **Prohibited and Restricted Areas.** Without the prior permission of MOD (CAS-AS LF) aircraft within the UKLFS **should** not enter UK Prohibited and Restricted Areas as defined in ATM3200 including:

- a. National Prohibited and Restricted Areas.
- b. Military Prohibited and Restricted Areas.
- c. Provost Marshal Prohibited and Restricted Areas.

10. **Danger Areas.** Aircraft within the UKLFS **should** not enter permanent Danger Areas or scheduled Danger Areas during published operating hours without permission of the controlling authority.

11. **▶ Transit Areas** Fixed-wing aircraft (including Tucano) should not overfly Transit Areas below 2000ft AGL. Heavy rotary-wing aircraft (>5700kg) should not overfly Transit Areas below 1000ft AGL. All other aircraft should not overfly Transit Areas below 500ft AGL in rural areas, and 1000ft AGL in congested areas. Transit Areas are defined as congested areas for the purposes of conducting a flypast under RA 2335 para 35.

12. **Avoidance Areas.** Fixed-wing aircraft should not enter Avoidance Areas without the prior approval of MOD CAS-AS LF. Rotary-wing and light aircraft may enter Avoidance Areas, but without the prior approval of CAS-AS LF should remain above 500ft AGL in rural areas and 1000ft AGL in congested areas. ◀

13. **Air Traffic Zones.** Aircraft within the UKLFS **should** not enter Air Traffic Zones including ATZ and MATZ without prior permission of the controlling authority.

14. **Glider and Micro-light Sites.** Aircraft within the UKLFS **should** avoid permanent glider sites by the following margins:

- a. Permanent Glider Sites. 2000ft AGL and 2nm radius.
- b. Permanent Micro-light Sites. 2000ft AGL and 1nm radius.

15. **Environmental, Industrial, Medical and Nature Sites.** Aircraft within the UKLFS **should** avoid environmental, industrial and medical sites listed within the UK Military Low Flying Handbook by 2000ft AGL and 0.25nm laterally unless otherwise specified.

16. **Free-fall Parachute Areas.** Aircraft within the UKLFS **should** avoid major free-fall parachute areas listed within the UK Military Low Flying Handbook by 2000ft AGL

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and 1nm laterally.

17. **Small Arms Ranges.** Aircraft within the UKLFS **should** avoid small arms ranges listed within the UK Military Low Flying Handbook by 500ft AGL unless otherwise specified.

18. **Temporary Airspace Reservations.** Aircraft within the UKLFS **should** not enter temporary airspace reservations promulgated by NOTAM within the specified dimensions.

19. **Royal and Selected Helicopter Flights.** Aircraft within the UKLFS **should** comply with the flight restrictions associated with Royal and Selected Helicopter Flights. See ATM3255 for further AMC detail.

20. **Low Flying near Ships and Oil/Gas Installations at Sea.** Except where authorized by Aviation Duty Holders and Commanders, or when operationally necessary, aircraft **should** avoid ships and fixed or mobile oil/gas installations at sea by the following margins:

a. **Aircraft Carriers and Ships Known to be Operating Fixed-Wing Aircraft.** 5 nm laterally or above 3000 ft AMSL.

b. **Other Warships:**

(1) **Fixed-wing Aircraft.** 2 nm laterally or above 2000 ft AMSL. No ship is to be over flown deliberately more than twice.

(2) **Rotary-wing Aircraft.** By a margin sufficient to avoid interference with other rotary-wing aircraft or ships operations.

c. **Fixed or Mobile Gas Installations.** 1.5 nm laterally or above 2000 ft AMSL.

d. **Other Shipping.** By a margin sufficient to obviate disturbance and disruption of operations, but not less than 250 ft MSD.

Weather Limitations

21. **UK Airspace.** Low flying in UK Airspace **should** not to be carried out in weather conditions lower than the minima detailed below unless MOD (CAS-AS LF) has given specific dispensation.

Weather Limitations		
Fixed-wing Aircraft Speed greater than 140kts	Fixed Wing Aircraft Speeds at or below 140kts	Rotary-wing Aircraft
Flight Visibility of 5km, 1500m horizontal and 500ft vertical separation from cloud	Flight Visibility of 1500m, clear of cloud and in sight of the surface.	Clear of cloud and in sight of the surface. (See note 1)

Note:

1. In the case of a helicopter flying at or below 3000 feet above mean sea level then at a speed, which having due regard for the visibility is reasonable, and remains clear of cloud and in sight of the surface.

22. **Outside UK Airspace.** Weather limitations for low flying outside UK Airspace **should** be laid down by Aviation Duty Holders and Commanders. Such minima **should** be no less stringent than the Regulations, if any, promulgated by the national or local authorities concerned.

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23. UK Military Aircraft may low fly inside the UKLFS and abroad. Low flying is defined as follows:

- a. Fixed-wing aircraft, including Tucano but excluding light propeller driven aircraft, are considered to be low flying when operating at less than 2000 ft Above Ground Level (AGL)/Above Mean Sea Level, (AMSL), except when directed by ATC, or during departure or arrival at an airfield, or during an emergency, or when making a precautionary or forced landing.
- b. Light propeller driven aircraft and helicopters are considered to be low flying when operating at less than 500 ft MSD except when directed by ATC, or during departure or arrival at an airfield, or helicopter landing site, or during an emergency, or when making a precautionary or forced landing.

Authorization

24. The Regulations for low flying need not necessarily apply when engaged on operational tasks (such as Quick Reaction Alert or Search and Rescue Duties), or when compelled to do so by weather.

25. Unless written authorization to the contrary has been obtained from Aviation Duty Holders and Commanders, low flying must be conducted only within the confines of the UKLFS and along routes and in areas abroad which have been formally approved by the appropriate national/local authority for use by UK Military Aircraft.

26. Subject to MOD (CAS-AS LF) approval and allocation of airspace, Aviation Duty Holders and Commanders may authorize low flying exercises in the UK or overseas subject to the following provisions:

- a. Aircraft must be routed so as not to cause unnecessary annoyance to the public, commensurate with meeting operational and training requirements.
- b. Aircraft may not to be routed within:
 - (1) Danger areas without the permission of the controlling authority.
 - (2) Any area subject to low-flying avoidance criteria detailed at Paras 9-▶20◀ above or promulgated by NOTAM.

27. Sponsors of all exercises within the UK FIR will notify MOD (CAS-AS LF) of the numbers and types of participating aircraft, together with details of proposed routes, targets, planned sortie rate and operating times, no later than 30 days in advance of the start of the exercise. Procedures and information required are contained in the UK Military Low Flying Handbook Annex A, 'Use of the UK Low Flying System - A Planning Guide for Exercise Sponsors'.

28. Low flying exercises must not be planned to take place at the weekend, or on public holidays and their associated weekends, without the prior approval of MOD (CAS-AS LF).

Minimum Separation Requirements

29. **Fixed Wing Aircraft.** The following restrictions apply:

- a. Designated tactical training areas, Aviation Duty Holders and Commanders may authorize Operational Low Flying (OLF) or Operational Low Flying Training (OLFT) at less than 250ft MSD but not less than 100ft MSD. Within the UKLFS, all such flying is to be pre-notified in accordance with the procedures detailed in the UK Military Low Flying Handbook.
- b. In specially selected and surveyed areas, JHC may authorize flying at not less than 50ft MSD for light fixed-wing aircraft of the Army Air Corps.
- c. In the sea areas of the UKLFS, outside 3 nm from the coastline, Aviation Duty Holders and Commanders may authorize low flying below 250 ft MSD for specialised operational training.

30. **Rotary-Wing Aircraft.** Rotary-wing aircraft operating in VMC below 500 ft

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above the surface may operate in accordance with MSD, or to minimum height and separation criteria (AGL plus MSC) as laid down by Aviation Duty Holders and Commanders.

Avoidance Criteria

31. **Flying near Russian Ships.** In addition to the provisions above Aircraft Commanders should be aware of Article IV of the Bi-lateral UK/Russia Agreement on the Prevention of Incidents at Sea, which states:

a. *Commanders of aircraft of the Parties shall use the greatest caution and prudence in approaching aircraft and ships of the other Party, in particular ships engaged in the launching or landing of aircraft, and, in the interests of mutual safety, shall not permit simulated attacks by the simulated use of weapons against aircraft or ships of the other Party, or dropping objects near them in such a manner as to be hazardous to ships or constitute a hazard to navigation. Such actions shall also not be taken by aircraft of each Party against non-military ships of the other Party.*

b. *Aircraft of the Parties flying in darkness or under instrument conditions shall, wherever feasible, display navigation lights.*

32. **Operations in support of HM Coastguard or Fishery Protection Tasks.**

Fixed and rotary-wing aircraft briefed for sorties in co-operation with HM Coastguard or for fishery protection tasks may be authorized to approach ships and fishing vessels not closer than 100 metres at a minimum height of 200 ft AMSL. Approaches will be made across the ship's quarter and on a diverging heading.

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