RA 2307 - Rules of the Air

Rationale

The Defence Air Environment comprises a wide range of military registered Aircraft. These vary in size, manoeuvrability and speed yet share the same airspace with each other and many civilian registered Aircraft. Such variety could present a Hazard if operated in an inconsistent or unexpected manner. In the UK, civilian registered Aircraft achieve consistency by adhering to the Air Navigation Order (ANO) and Standardized European Rules of the Air (SERA); however, the majority of the ANO and SERA do not apply to military registered Air Systems. This Regulatory Article ensures operators of military registered Air Systems comply with the relevant requirements of the ANO and SERA and, when the unique nature of military flying requires deviation from the ANO and SERA, such Aircraft are operated in a manner that provides an Air Safety outcome at least as good as the rules for civilian registered Aircraft.

Contents

Regulation 2307(1)

Rules of the Air

2307(1) The Aircraft Commander and / or handling pilot **shall** follow the Rules of the Air.

Acceptable Means of Compliance 2307(1)

Rules of the Air

Avoidance of Collisions

1. Notwithstanding that a flight is being made with Air Traffic Control (ATC) Clearance ►or instructions,◄ the Aircraft Commander or handling pilot **should** take all possible measures to ensure that their Aircraft does not collide with other Aircraft, Obstacles or terrain.

2. An Aircraft **should not** be flown in such proximity to other Aircraft as to create a danger of collision, ►unless it is in formation with the other Aircraft.◄

3. Aircraft **should not** be flown in Formation, except in an emergency or under operational tasking, unless the Aircraft Commanders have agreed to do so and have been authorized for that activity[1]. Aviation Duty Holders (ADH) and Accountable Managers (Military Flying) (AM(MF)) **should** stipulate when and how Formation Flying will be Authorized. Orders and instructions **should** include as a minimum:

   a. Briefing requirements;

   b. Numbers of Aircraft permitted;

   c. Authorization criteria, including Formation Leader;

   d. Minimum distance between Formation members;

   e. Formation Flying in Controlled Airspace;

   f. Weather minima;

   g. Occasions when Formation Flying is authorized between dissimilar types or when non-UK Military Aircraft are involved.

4. **Tactical Training**. ADH / AM(MF) **should** stipulate the occasions when it might be necessary to ►deviate◄ from the Rules of the Air for the Avoidance of Collisions for the purposes of tactical training. Alternative procedures and methods of achieving separation criteria **should** be promulgated, briefed and Authorized.

5. An Aircraft that is obliged by these Rules of the Air to keep out of the way of another Aircraft **should** avoid passing over, under or in front of the other Aircraft unless it passes well clear and takes into account the effect of the Aircraft's wake turbulence.

[1] Refer to RA 3234 – Air System Formations, which details procedures for safe and efficient flight when in formation.

Acceptable Means of Compliance 2307(1)

6. An Aircraft that has right of way under the Rules of the Air **should** be flown at a constant course and speed, unless Safety dictates otherwise.

7. The Aircraft Commander of an Aircraft who is aware that the manoeuvrability of another Aircraft is impaired **should** give way to that Aircraft.

8. For the purposes of this Regulation, an Aircraft towing a sailplane[2] or other object **should** be considered to be a single Aircraft under the command of the Aircraft Commander of the towing Aircraft.

9. Formations of Aircraft are normally less manoeuvrable than single Aircraft and ►will be limited in their ability◄ to take sudden avoiding action. The handling pilots of single Aircraft **should** therefore give way to, and keep clear of, formations of Aircraft.

10. Airborne Collision Avoidance Systems (ACAS), where fitted, **should** be operated in accordance with (iaw) the Air System Document Set. Pilots **should** use standard radiotelephony phraseology iaw CAP 413[3].

11. **Use of ACAS Equipment fitted with Resolution Advisory Mode**. When fitted, ACAS equipment capable of Resolution Advisory mode **should** normally have this mode selected. A Resolution Advisory warning **should** be actioned according to the instruction issued. ADH / AM(MF) **should** promulgate orders or instructions detailing the circumstances when selection of Traffic Advisory-only (TA only) mode, or standby / off mode is permitted.

12. **Aircraft Converging**. When two Aircraft are converging at approximately the same level, the Aircraft that has the other on its right **should** give way, except as follows:

a. Powered Aircraft **should** give way to airships, sailplanes and balloons;

b. Airships **should** give way to sailplanes and balloons;

c. Sailplanes **should** give way to balloons;

d. Powered Aircraft **should** give way to Aircraft towing other Aircraft or other objects.

13. **Aircraft Approaching Head-On**. When two Aircraft are approaching head-on, or approximately so, in the air and there is a danger of collision, each handling pilot **should** alter course to the right, unless to do so would force a crossing of flight paths.

14. **Aircraft Overtaking**. An Aircraft that is being overtaken in the air has the right of way, and the handling pilot of the overtaking Aircraft, whether climbing, descending or in horizontal flight, **should** keep out of the way of the other Aircraft by altering course to the right. The handling pilot of the overtaking Aircraft **should** keep out of the way of the other Aircraft until that other Aircraft has been passed and is clear, notwithstanding any change in relative positions of the two Aircraft. This does not apply to sailplanes overtaking other sailplanes, which **should** pass clear by altering course to the right or left, whichever is the most appropriate.

15. **Air Traffic Zones**. Aircraft **should not** enter Air Traffic zones including Aerodrome Traffic Zones (ATZ), Military ATZ ►or active glider and micro-light sites[4]◄ without prior permission of the controlling authority.

16. ►◄

a. ►◄

b. ►◄

17. **Flight in the Vicinity**►[5]◄ **of an Aerodrome**►◄. ►◄ Aircraft Commanders **should** avoid flying in the vicinity►[5]◄ of an Aerodrome unless authorized by ATC. Where an Aerodrome does not have ATC, Aircraft Commanders **should** avoid that

[2] A heavier than air Aircraft that does not depend on an engine including gliders, hang gliders, paragliders, and other comparable craft.
[3] Refer to CAP 413 – Radiotelephony Manual.
[4] ►Refer to the UK Military Low Flying Handbook (UKMLFHB) for hours of operation and avoidance criteria of glider and micro-light sites.◄
[5] Refer to MAA02: MAA Master Glossary for definition ►of Aerodrome Traffic.◄

Acceptable Means of Compliance 2307(1)

location unless they can positively confirm whether or not other Aircraft are operating and:

a. ►Observe other Aerodrome Traffic for the purpose of avoiding collision;◄

b. Conform with or avoid the pattern of traffic formed by other Aircraft in operation;

c. ►◄

d. ►Make◄ all turns ►to the◄ left, when approaching for landing and after taking off, unless otherwise ►indicated, or instructed by ATC.◄

18. **Aircraft Landing**. Handling pilots of Aircraft in flight or on the ground or water **should** give way to Aircraft landing or on final approach to land or water.

19. When two or more Aircraft are approaching any place for the purpose of landing, the handling pilot of the Aircraft at the lower altitude possesses the right of way but **should not** cut in front of another Aircraft that is on final approach to land or overtake that Aircraft. However, the following exceptions apply:

a. When an ATC unit has communicated to any Aircraft an order of priority of landing, the handling pilot **should** approach to land in that order;

b. When the handling pilot is aware that another Aircraft is making an emergency landing, they **should** give way to that Aircraft unless specifically instructed to do otherwise by ATC. Notwithstanding that the handling pilot that gives way may have previously received permission to land, the handling pilot **should not** attempt to land until they have received further permission to do so.

20. ►After landing, the handling pilot of an Aircraft **should** move clear of the Landing Area as soon as it is safe to do so unless otherwise authorized by an ATC unit.◄

21. **Aircraft Take-off**. An Aircraft taxiing on the Manoeuvring Area of an Aerodrome **should** give way to an Aircraft taking off or about to take off.

22. The handling pilot of an Aircraft **should** take off and land: in the direction indicated by ATC; by the ground signals indicated; or, if no signals are displayed, into the wind unless good aviation practice demands otherwise.

23. The handling pilot of an Aircraft **should not** land on a Runway at an Aerodrome if the Runway is not clear of other Aircraft, unless otherwise authorized by the controlling ATC unit.

24. Where take-off and landing are not confined to a Runway:

a. The handling pilot of an Aircraft, when landing, **should** leave clear on their left any Aircraft which has landed or is already landing or about to take off. If such an Aircraft is about to turn it **should** turn to the left after the handling pilot has satisfied themself that such action will not interfere with other traffic movements.

b. The handling pilot of an Aircraft about to take off **should** take up position and manoeuvre in such a way as to leave clear on their left any other Aircraft which has already taken off or is about to take off.

25. ►◄

26. **Right of Way on the Ground**. Vehicles and vehicles towing an Aircraft **should** give way to Aircraft that are landing, taking off or taxiing. Vehicles (whether towing an Aircraft or not) meeting other vehicles (whether towing an Aircraft or not) **should** follow the principles in para ►27.◄

27. **Right of Way for Taxiing Aircraft.** In case of danger of collision between two Aircraft taxiing on the Movement Area of an Aerodrome, the following **should** apply:

a. When two Aircraft are approaching head-on, or approximately so, each **should** stop or, where practicable, alter course to the right so as to keep well clear.

Acceptable Means of Compliance 2307(1)

b. When two Aircraft are on a converging course, the one which has the other on its right **should** give way.

c. An Aircraft which is being overtaken by another Aircraft **should** have the right-of-way and the overtaking Aircraft **should** keep well clear of the other Aircraft.

28. **Movement of Aircraft on Aerodromes**. The handling pilot of an Aircraft **should not** taxi on the Movement Area or cross an active Runway without positive ATC Clearance, or where the Aerodrome has an Aerodrome Flight Information Service (FIS) unit for the time being notified on watch, without permission of that unit. Where ATC or FIS facilities are not available, permission **should** be sought from the person in charge of the Aerodrome.

29. **Collision Avoidance during Instrument Meteorological Conditions (IMC) Flight**. To reduce the Risk of a collision, flight in IMC **should** only be conducted in one or more of the following circumstances:

a. When in receipt of a radar or procedural service;

b. When following a published approach or departure procedure;

c. In an emergency;

d. Where specific Approval is given in orders issued by ADH or AM(MF).

e. ► Where a radar or procedural service is not available or cannot be obtained, and sub-paragraphs b, c and d do not apply, handling pilots **should** set their altimeter pressure setting and fly at cruising levels iaw the procedures in the UK Aeronautical Information Publications (AIP)[6] at or above Safety Altitude.◄

30. ►◄

31. In the event of unavoidable or inadvertent entry into IMC handling pilots **should** make every effort to obtain an Air Traffic Service (ATS). If a radar service is unavailable, wherever possible handling pilots **should** avoid areas of known or expected airborne activity such as Airfield approach and departure lanes, sailplane sites or areas of offshore helicopter activity.

32. **Royal Low-Level Corridors (RLLC)**. Military Aircraft **should** only operate in RLLC iaw RA 3237[7].

Low Flying

33. Low Flying is a specific area in which the UK Military deviates from the civilian Rules of the Air. The UK Military Low Flying Regulations described in RA 2330[8] and the procedures described in the UKMLFHB **should** be followed by all Aircraft operating below 2000 ft AGL / above mean sea level (AMSL). Light ►fixed wing◄ Aircraft and Rotary Wing Aircraft are considered to be Low Flying when operating at less than 500 ft AGL / AMSL but are considered to be in the UK Low Flying System when operating at less than 2000 ft AGL.

'Due Regard'

34. Flying that is conducted outside the UK Flight Information Region (FIR) and Upper Information Region (UIR), in international airspace, but not conducted under International Civil Aviation Organization (ICAO) flight procedures[9], **should** only be carried out under 'Due Regard' and approved by the ADH / AM(MF) or operational commander[10].

35. 'Due Regard' carries a personal responsibility on the part of the Aircraft Commander and / or handling pilot to maintain separation from other Aircraft, vessels and objects (such as offshore platforms). ICAO guidance on 'Due Regard' highlights

[6] ►Refer to Section 5, Detailed Procedures, and Section 6, Tables of Cruising Levels, in UK AIP ENR 1.7 Altimeter Setting Procedures.◄
[7] Refer to RA 3237 – Royal Low Level Corridors.
[8] Refer to RA 2330 – Low Flying.
[9] AM(MF) **should** contact the MAA to discuss suitability prior to operating under principles of 'Due Regard'.
[10] Refer to RA 1020 – Aviation Duty Holder ►◄ - Roles and Responsibilities.

Acceptable Means of Compliance 2307(1)

that ADH / AM(MF) and crew **should** ensure that they are fully informed about, and conversant with, all the following in respect of the area of activity:

a. The type(s) of civil Aircraft operations;

b. The ATS airspace organization and responsible ATS unit(s);

c. ATS routes and their dimensions;

d. Relevant Regulations and special rules, including airspace restrictions.

36. Aircraft operating under 'Due Regard' **should** be subject to one or more of the following conditions:

a. Aircraft **should** be operated under Visual Flight Rules (VFR) and in Visual Meteorological Conditions (VMC);

b. Aircraft **should** be operated under the radar surveillance and control of a surface or airborne radar facility;

c. Aircraft **should** be equipped with airborne radar and qualified operators sufficient to provide separation between themselves and other Aircraft;

d. In the absence of the ability to comply with para 36.a, b, or c, Aircraft **should** be operated such that conflicting Aircraft can be detected and information relayed to the Aircraft Commander in such a way that they can then make timely decisions on appropriate deconfliction action and act accordingly.

37. In the event that civil Aircraft are permitted to operate through an area of military activity, military staff conducting the activity **should** also be fully informed of, and familiar with:

a. The means and methods of identifying civil Aircraft;

b. Means and method(s) of co-ordination with the ATS unit(s) and;

c. Terminology and phraseologies for use in communications with ATS units or, as a last resort, with civil Aircraft.

38. ADH / AM(MF) who authorize flights to be conducted under 'Due Regard' **should** be aware of the relevant ICAO regional Air Navigation Plan(s) (ANP), any relevant AIP from the state over who's territory the flights will take place and any related documents and charts. If necessary, and if reasonably practicable to do so, a special briefing regarding the civil aviation activities and infrastructure **should** be arranged with the assistance of ATS specialists from the State(s) concerned. Further Guidance can be found in ICAO Document 9554[11].

Air Traffic Management and Airspace

39. Aircrew **should** read these Rules of the Air in conjunction with the Air Traffic Management (ATM) 3000 series Regulations and the UK AIP.

40. **ATC Systems**. Unless alternative ATM / ATC arrangements have been agreed, Aircraft Commanders **should** conform to the civil national ATM / ATC Systems of all countries over which they fly.

41. **Notification of Arrival and Departure**. The Aircraft Commander **should** notify the Airfield controlling authority of any intention to arrive or depart. Additionally, the Aircraft Commander **should** notify any change of intended destination or any estimated delay in arrival of 45 minutes or more.

42. **Flight Plans**. Flight plans **should** be submitted iaw the UK AIP ENR 1.10 (Flight Planning) and CAP 694 chap 4[12].

43. **Prohibited and Restricted Areas**. Without the prior permission of the controlling authority for the area, Aircraft **should not** enter UK Prohibited and Restricted Areas as defined in chap 5 of the Manual of Military Air Traffic Management including:

[11] Refer to ICAO Doc 9554 – Manual concerning safety measures relating to military activities potentially hazardous to civil aircraft operations (www.icao.int).
[12] Refer to CAP 694 – The UK Flight Planning Guide.

Acceptable Means of Compliance 2307(1)

a. National Prohibited and Restricted Areas;

b. Military Prohibited and Restricted Areas;

c. Provost Marshal Prohibited and Restricted Areas.

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

45. **Restricted Airspace (Temporary)**. Non-participating Aircraft **should not** enter temporary airspace reservations promulgated by Notice to Aviation (NOTAM) within the specified dimensions.

46. **High Intensity Radio Transmission Area (HIRTA)**. Aircraft **should** adhere to HIRTA restrictions detailed in their approved flight release and limitations document[13]. HIRTA Air System susceptibility can also be found at the No 1 Aeronautical Information Documents Unit Intranet and specific HIRTA restrictions are contained in section 2 and 3 of the UKMLFHB.

Flight Rules and Flight Conditions

47. Flights **should** be conducted either under Instrument Flight Rules (IFR), VFR or Special Visual Flight Rules (SVFR) as appropriate. VMC and IMC refer to the weather conditions encountered during flight. These terms are used to denote actual weather conditions, as distinct from the flight rules under which the flight is being conducted. VMC exist when the weather permits flight iaw the VFR; IMC exist when weather conditions are below the minima for VFR flight.

48. An Aircraft Commander electing to change the conduct of a flight from IFR to VFR **should** notify the appropriate ATS unit specifically that the IFR flight is cancelled.

Visual Flight Rules

49. **UK**. Within the UK, under VFR, pilots **should** maintain safe separation from other traffic. To operate under VFR, the extant environmental conditions **should** meet the VMC minima specified in Table 1, below.

Table 1. UK VMC Minima for VFR Flight.

Altitude Band	Airspace Class	Flight Visibility	Distance from Cloud
At and above ►FL 100◄	A (1) B C ►◄ D E F G	8 km	1500 m horizontally 1000 ft vertically
Below ►FL 100◄ and above 3000 ft AMSL, or above 1000 ft above terrain, whichever is the higher	A (1) B C ►◄ D E F G	5 km (3)	1500 m horizontally 1000 ft vertically
At and below 3000 ft AMSL, or 1000 ft above terrain, whichever is the higher	A (1) B C ►◄ D (6) E	5 km (3)	1500 m horizontally 1000 ft vertically
At and below 3000 ft AMSL, or 1000 ft above terrain, whichever is the higher	F G	5 km (4)	1500 m horizontally 1000 ft vertically or clear of cloud and with the surface in sight (5)

Notes:

1. The VMC minima in Class A airspace are included for guidance to pilots and do not imply acceptance of VFR flights in Class A airspace.
2. ►◄
3. The minimum flight visibility at speeds greater than 250 kts **should** be 8 km.
4. Minimum flight visibility outside Controlled Airspace.

[13] Refer to RA 1300 – Release To Service; RA 1305 – Military Permit To Fly (In-Service), (Special Case Flying) and (Single Task) and RA 5880 – Military Permit To Fly (Development) (MRP Part 21 Subpart P).

Acceptable Means of Compliance 2307(1)

a. **Day.** At 140 kts or less the minimum flight visibility for all Aircraft may be reduced to 1500 m if manoeuvred at a speed that will give adequate opportunity to observe other traffic or any Obstacles in time to avoid collision. Helicopters **should** only be permitted to operate in less than 1500 m flight visibility if manoeuvred at a speed that will give adequate opportunity to observe other traffic or any Obstacles in time to avoid collision.

b. **Night.** At 140 kts or less the minimum flight visibility for helicopters only **should** be 3 km except where Systems are specifically certified to offer suitable performance for safe flight below 3 km visibility and a reduction of normal minima is approved by the ADH. In these circumstances appropriate training, equipment and imperative **should** be demonstrated. Visibility **should not** be lower than 1500 m over land or 1000 m over sea. All such activity **should** include additional supervision.

5. Distance from cloud.

a. At speeds greater than 250 kts the minimum horizontal clearance from cloud **should** be 1500 m.

b. At speeds greater than 140 kts in the UK Military Low Flying System the minimum vertical distance from cloud **should** be 500 ft.

6. **Class D VFR Operations**. A VFR flight in airspace class D is *also* deemed to have complied with Table 1 if the Aircraft is flown:

a. During the day;

b. At an indicated airspeed of 140 kts or less to give adequate opportunity to observe other traffic or any Obstacles in time to avoid collision; and

c. Remaining clear of cloud, with the surface in sight and:

i. For Aircraft other than helicopters, with a flight visibility of at least 5 km;

ii. For helicopters, with a flight visibility of at least 1500 m.

50. **Outside the UK**. Outside the UK, pilots **should** normally comply with the VFR of the country over which they are flying, unless UK criteria are more restrictive, in which case UK criteria **should** be followed.

51. **Flight Visibility**. For the purposes of an Aircraft taking off from, or approaching to land at, an Aerodrome within Class B, C, or D airspace, the visibility, if any, communicated to the handling pilot by the appropriate ATC unit **should** be taken to be the extant flight visibility.

52. **Class D VFR Operations**. Except when a special VFR clearance is obtained from an ATC unit, VFR flights **should not** take off or land at an Aerodrome within a control zone, or enter the ATZ or Aerodrome Traffic circuit when the reported meteorological conditions at that Aerodrome are below the following minima:

a. The ceiling is less than 450 m (1500 ft); or

b. The ►reported[14]◄ visibility is less than 5 km.

53. For fixed wing and helicopter flights wishing to operate under VFR to or from an Aerodrome or enter the ATZ or Aerodrome Traffic circuit in class D airspace, the ►reported◄ visibility►[14]◄ **should** be used.

54. **VFR Flight Plans**. Pilots intending to fly in Class B, C or D airspace **should** complete a Flight Plan and obtain an ATC Clearance prior to entry to the airspace.

55. **Continuous Watch**. When flying within Class A, B, C, D and IFR in E airspace, pilots **should** maintain a continuous watch on the notified radio frequency and comply with any instructions given by the appropriate ATC unit.

[14] ►Reported visibility is the visibility reported by the Airfield meteorological office and is available from ATC.◄

Acceptable Means of Compliance 2307(1)

56. Exceptions to the rules for the VFR Flight Plan and Continuous Watch rules above **should** only be as follows:

a. Gliders that: are flying during daylight hours; and are operating within Controlled Airspace designed and detailed in the AIP or NOTAM issued for this exception; and, which maintain 1500 m horizontal and 1000 ft vertical clearance from cloud; and possess flight visibility of at least 8 km.

b. Powered Aircraft which do not possess radio equipment and that: are flying during daylight hours; and are operating within Controlled Airspace designed and detailed in the AIP or NOTAM for this exception; and, which maintain 1500 m horizontal and 1000 ft vertical clearance from cloud; and possess flight visibility of at least 5 km.

c. The above 2 types of Aircraft where permission has been granted by the appropriate ATC unit.

d. VFR Flight Plans **should not** be submitted for VFR flight in Class C airspace above FL 195 or along a Class C ATS route at any level.

IFR

57. **UK**. Within the UK, pilots **should** follow IFR as follows:

a. **Outside Controlled Airspace (CAS)**. ►◄ Pilots **should** select cruising levels as defined by the UK AIP►6◄, ►◄ unless they are flying in conformity with instructions from ATC, His Majesty's (HM) Ship or an Air Surveillance and Control System Unit.

►◄

b. **Inside CAS**. Inside CAS, the following conditions **should** be complied with when the flight is proceeding as General Air Traffic:

(1) A Flight Plan **should** be submitted to the appropriate ATC Centre (ATCC).

(2) Clearance for the flight **should** be obtained from the appropriate ATCC.

(3) A pilot **should** possess a valid instrument rating.

(4) The Air System **should** carry appropriate radio equipment operating on the notified radio frequencies.

(5) The Air System **should** carry radio-navigation equipment appropriate to the specific airspace requirements.

(6) The flight **should** be conducted iaw the ATC Clearance and instructions received.

58. **Outside the UK**. Outside the UK, IFR flights **should** be conducted iaw the applicable national procedures.

59. **IFR and Safety Altitude**. Under normal flying conditions the IFR do not allow flight below ►Safety Altitude◄ in IMC unless conforming with provisions listed at Deviations from Standard IFR (below). Additionally, military exercises might necessitate operations above the transition Altitude with flight profiles that do not conform to the standard IFR. Such exercises **should** conduct the appropriate liaison with the Airspace Utilisation Section (Civ: 0207 453 6599) and other Ministry of Defence (MOD) and civil airspace authorities and **should** take appropriate NOTAM and warning action once flight profiles have been agreed.

Applicability of VFR and IFR

60. **Flight Under IFR**. IFR flying **should** be conducted as follows:

a. Within the UK, flight under IFR is mandatory:

(1) In IMC.

(2) In Class A airspace, except where SVFR is permitted.

(3) In Class C airspace when VFR operations are not permitted.

Acceptable Means of Compliance 2307(1)

61. **Flight Under VFR**. With the exception of SVFR, a flight **should** only be conducted under VFR in circumstances that do not mandate IFR.

62. **SVFR**. SVFR flights may be authorized to operate within a control zone, subject to ATC Clearance. Except when permitted for helicopters in special cases such as, but not limited to, medical flights, Search and Rescue (SAR) Operations and fire-fighting the Aircraft Commander **should** ensure that:

a. Flight is conducted clear of cloud and with the surface in sight and;

b. The flight visibility is not less than 1500 m or, for helicopters, not less than 800 m and;

c. Speed is 140 kts IAS or less to give adequate opportunity to observe other traffic and any Obstacles in time to avoid a collision; and

d. Flight is conducted day only, unless otherwise permitted by ATC and;

e. Cloud ceiling is not less than 600 ft AGL.

Deviations from Standard IFR

63. Any UK Military Aircraft operating in IMC ►in Class G airspace,◄ **should** comply with published IFR procedures for the relevant UK FIR concerned except when:

a. In airspace detailed in the AIP or NOTAM for flight not iaw the IFR.

b. In a Danger Area which is notified as active and allocated to the Flying Unit.

c. In accordance with operation orders for specific exercises where allocated operating levels preclude flight at the appropriate IFR level - in the normal course the operational Sponsor for the exercise **should** ensure that any necessary NOTAM action is taken.

d. Flying in conformity with instructions by ATC, an HM Ship or an Air Defence unit (see note).

e. When conforming to Maritime Sortie Descent Rules (para ►65◄).

f. When conforming to Helicopter Instrument Practice Areas (para ►69◄).

►◄

Tactical Maritime and Non-Tactical Maritime Sorties

64. **Radar Service for Maritime Sorties**. A radar service in the context of Maritime Sorties is defined as ►a service◄ that can ensure safe separation from the coast and surface contacts. ►This can be provided to the Aircraft by an Air Traffic Service, or by the provision of an Air System's radar capability.◄ Orders and instructions for Air Systems equipped with suitable radar, **should** be issued by ADH / AM(MF) and detailed in the Air System Safety Case[15].

65. **Descent and Operations below ►Safety Altitude in◄ IMC outside CAS**. Aircraft operating in the maritime environment **should** only be Authorized to descend and operate below ►Safety Altitude◄ in IMC over the sea subject to compliance with the following conditions:

[15] Refer to RA 1205 – Air Systems Safety Cases.

Acceptable Means of Compliance 2307(1)

Table 2. Tactical Maritime Sorties.

Radar service available	Once 2 nm clear of the coast (5 nm for fixed wing Aircraft), and Heading away from land, Aircraft may descend below their Safety Altitude and continue down to the Authorized operating Altitude. Descent below 200 ft may only take place when visual with the surface, or with reference to a Serviceable radio / radar altimeter.
No radar service available	Once 5 nm clear of the coast, and Heading away from land, Aircraft may descend below their Safety Altitude and continue to 500 ft Minimum Separation Distance (MSD) with reference to a Serviceable barometric altimeter. If 5 nm separation from land cannot be maintained then the Aircraft **should** climb to ►at least[16]◄ Safety Altitude.

Table 3. Non-Tactical Maritime Sorties.

Radar service available	Once 2 nm clear of the coast (5 nm for fixed wing Aircraft), and Heading away from land, Aircraft may descend below their Safety Altitude and continue to 500 ft MSD. They may then remain in IMC at 500 ft MSD provided that they have been Authorized to do so and they remain greater than ►2◄ nm from the coast ►(5 nm for fixed wing Aircraft).◄ Flight below 500 ft MSD in IMC is only permitted when either: a. Specifically Authorized. b. Conducting a radar approach (including Helicopter Controlled Approach (HCA) / Ship Controlled Approach (SCA) / Emergency Low Visibility Approach (ELVA).
No radar service available	Once 5 nm clear of the coast, and Heading away from land, Aircraft may descend to 500 ft MSD in an attempt to gain VMC. If still IMC at this Height, then the Aircraft **should** climb to ►at least[16]◄ Safety Altitude. ►◄

Notes:

1. **Tactical maritime**. Sorties involving operations / training that are constrained in selection of operating levels / Altitudes by a need to achieve a specific sortie aim such as Anti-Submarine Warfare, Airborne Early Warning (AEW), Anti Surface Warfare, Maritime Counter Terrorism and Search and Rescue.

2. **Non-Tactical maritime**. Sorties that do not involve flight in a tactical profile such as Helicopter Delivery Service, Senior Officer Taxi, Navigation Exercise, embarkation etc.

3. Whenever possible and consistent with the Emissions Control (EMCON) policy in force, Air Systems operating IMC **should** be in receipt of a radar service.

4. Safety Altitude outside of 5 nm from the coast **should** be a minimum of 1000 ft AMSL.

66. Fixed wing Aircraft operating in the maritime environment, unless specifically Authorized for a Tactical Maritime Sortie iaw Table 2, **should** be Authorized to descend not lower than 500 ft MSD in IMC with reference to a barometric altimeter and 300 ft MSD with reference a Serviceable radio / radar altimeter. Descent below 300 ft MSD **should** be specifically Authorized, and the pilot **should** be visual with the surface, or on recovery, when use **should** be made of radar service to ensure safe separation from surface contacts.

67. Aircraft simulating missile-attack profiles for training present additional Risk because the flight profile converges on ►◄ Ships. These sorties **should** only be

[16] ►Refer to paragraph 29.◄

Acceptable Means of Compliance 2307(1)

Authorized to descend below ►Safety Altitude in◄ IMC subject to specific Approval by the ADH / AM(MF) additional criteria as follows:

a. The Air System being in receipt of a radar service from an ATC unit or under the control of a suitably qualified Air System Controller, ►Air Ops (Control) Weapons Controller◄, ATC Officer using Ship's warning or air control radar or under the control of an AEW Air System.

b. The descent is conducted 5 nm clear and Heading away from land.

c. A minimum of 750 ft AMSL for multiple Aircraft and 500 ft AMSL for single Aircraft.

68. Beyond Visual ►Line of Sight Uncrewed◄ Air System ►pilots◄ flying missile attack profiles ►converging on ships◄ in VMC but without reference to the surface **should** apply the criteria required for operating in IMC.

Helicopter Instrument Flying Practice Areas.

69. Helicopters engaged in instrument flying practice or test flights **should** only operate below ►Safety Altitude◄ in IMC subject to the following conditions:

a. The helicopter is in receipt of a Radar Service and the flight is conducted within a designated training area or area which is under the control of the unit providing the radar service, and the following restrictions apply:

(1) Over land, the lower limit is fixed at an Altitude / Height which will ensure 1000 ft terrain clearance or at 1500 ft AMSL if higher.

(2) Over the sea, helicopters **should** operate not lower than 500 ft ►MSD◄ providing that the helicopter ►remains◄ at least 2 nm clear of the coast and / or surface contacts when below Safety Altitude.

Safety Altitude

70. ADH / AM(MF) **should** issue orders concerning Safety Altitudes as necessary to ensure the safe navigation of Aircraft within their Area of Responsibility (AoR). In doing so, the following principles apply.

71. **En Route**. The Safety Altitude for a particular route or exercise area **should** be calculated by adding a minimum of 1000 ft to the Elevation (ie Height above mean sea level) of the highest Obstacle located, as a minimum, within 5 nm of the Aircraft position rounded up to the next 100 ft. If the flight is to take place over Mountainous Terrain[17] the increment will be increased to a minimum of 2000 ft. When severe turbulence is anticipated, consideration **should** be given to increasing the Safety Altitude further to compensate for the hazardous conditions that are likely to occur. Where areas of turbulence associated with mountain and lee waves are forecast or known to be present, a minimum in-flight clearance of 5000 ft is necessary above mountains which are up to 5000 ft in Height above the surrounding terrain. For higher mountains the clearance **should** be at least equal to their Height above the terrain.

Descent Below Safety Altitude

72. **Over Land**. Unless specifically Authorized, Aircraft Commanders or handling pilots **should not** descend below Safety Altitude, except when compelled to do so in an emergency, unless the handling pilot is in visual contact with the surface, is using a Serviceable terrain-following radar equipment or can let down by means of an approved radio or radar terminal approach procedure provided by Air System ATC units. Instructions for Air Systems equipped with terrain-following radar, both in IMC and at Night, **should** be issued by ADH / AM(MF).

73. **Offshore**. Unless specifically Authorized for a Maritime Sortie iaw Table 2 or Table 3 or unless special dispensation has been granted by the MOD, subject to any more stringent orders that ADH / AM(MF) may have imposed, when descending over the sea more than 5 nm from the coast, Aircraft **should** only descend below Safety Altitude in IMC to a minimum of 500 ft above Authorized MSD in an attempt to achieve VMC below cloud. If cloud is not cleared by 500 ft above authorized MSD, or VMC

[17] Refer to MAA02: ►MAA◄ Master Glossary. Mountainous Terrain is defined as an area of changing terrain profile where the changes of terrain elevation exceed 3000 ft (900 m) within a distance of 10 nm (18.5 km).

Acceptable Means of Compliance 2307(1)

cannot be achieved from this position, Aircraft **should** climb to ►at least[16]◄ Safety Altitude ►◄. Whenever possible, descents **should** be planned such that, if made in IMC, they will occur in areas clear of known airborne activity (for example, civil helicopter offshore operations) or where such activity can be determined and avoided.

Aircraft Lighting

74. **Navigation Lights**. Between sunset and sunrise, navigation lights **should** be displayed by Aircraft in flight, taxiing, being towed and whenever possible when being ground-run. At Night, in the event of a navigation light failure in flight, the Aircraft **should** be landed as soon as practicable unless authorized by the appropriate ATC unit to continue.

a. **Within the United Kingdom**. In exceptional circumstances, between sunset and sunrise, planned activity without navigation lights **should** only take place as follows:

(1) Within Segregated Airspace. This option **should** be used wherever and whenever practical; or,

(2) Air Systems **should** be in receipt of a radar service from an Area Radar Unit as follows:

(a) In accordance with the recurring Airspace Change Notice issued for the conduct of lights out activity in non-Segregated Airspace.

(b) All Aircraft **should** squawk Mode 3A with C and Mode S where fitted.

(c) In the event of transponder failure or the failure of the radar being used to provide the radar service, navigation lights **should** be turned on immediately; or,

(3) Under the terms of the UK AIP, which describes the procedures for the Notification and clearance of Unusual Aerial Activity; or,

(4) When low flying without lights in the UK Military Low Flying System, such flying **should** be conducted iaw the UKMLFHB.

b. **Outside the United Kingdom**. In accordance with appropriate national requirements. Clearances for such flights **should** be negotiated locally with the national authorities concerned.

75. **Anti-Collision Lights (Including High-Intensity Strobe Lights (HISLs))**. If any anti-collision lights fail during flight at Night the Aircraft **should** land as soon as it is safe to do so, unless authorized by the appropriate ATC unit to continue its flight. An Aircraft may continue to fly during the day in the event of a failure of an anti-collision light provided the light is repaired at the earliest practicable opportunity. When installed, anti-collision lights **should** be used as follows:

a. **During Flight**. Anti-collision lights **should** be selected on at all times when the Aircraft is being operated with the following exceptions:

(1) During exercises with Night Vision ►Devices◄ that might be adversely affected by high intensity lighting.

(2) When Aircraft are conducting aerial photographic operations and the anti-collision lights might cause unwanted reflection.

(3) During Night operations in the immediate vicinity of the flight-deck at sea.

(4) During Formation Flying, when anti-collision lights can be switched off at the discretion of the Formation Leader.

(5) At any other time when the Aircraft Commander determines that the safe operation of their or any other Aircraft is being jeopardized.

Acceptable Means of Compliance 2307(1)

b. **On the Ground**

(1) Fixed wing Aircraft anti-collision lights (not HISL) **should** normally be selected on for engine starting (except in an Aircraft Shelter) and while taxiing.

(2) Helicopter anti-collision lights **should** normally be selected on whenever the rotors are running or about to run.

(3) A pilot **should** be permitted to switch off or reduce the intensity of any flashing lights fitted to meet the requirements of (1) and (2) if they are likely to adversely affect the safe performance of duties or subject an outside observer to harmful dazzle. In such circumstances consideration **should** be given to the visibility of the Aircraft and any confusion which might be caused by deviation from standard procedure.

Aircraft Marshalling Signals and Airfield Ground Signals

76. Personnel involved in flying operations **should** remain proficient in the use and interpretation of Aircraft marshalling signals and Airfield ground signals. Aircraft marshalling signals for military operations are detailed in NATO Standardization Agreement (STANAG) 3117[18]. Military Airfield ground signals are detailed in the RA 3500 series[19]. ICAO Annex 2[20] details the marshalling signals and visual ground signals used at civilian Airfields. The details of STANAG 3117 are available to Defence Contractor Flying Organizations by request to the MAA.

Miscellaneous Rules of the Air

77. **Aerobatic Manoeuvres**. Unless necessary and specifically Authorized, Aerobatic Manoeuvres **should not** be performed: over the Congested Area of any city, town or settlement; or, within Controlled Airspace except with the consent of the appropriate ATC unit.

78. **Simulated Instrument Flying**. Simulated Instrument Flying (IF) where Authorized, **should** normally only be carried out in Aircraft fitted with dual controls and be supervised by a second pilot holding a valid Certificate of Qualification on Type (CQT).

79. ADH / AM(MF) orders **should** detail specific circumstances where a Safety lookout who is a Suitably Qualified and Experienced Person (SQEP) can be utilized for simulated IF instead of a second pilot holding a valid CQT. SQEP for Safety lookout is defined as qualified pilots, Observers or, as specified in ADH / AM(MF) orders, other personnel who have completed an appropriate Safety lookout training package. Simulated IF utilizing a SQEP Safety lookout **should not** include Unusual Positions or Practice Forced Landings.

80. For Aircraft where a second pilot holding a valid CQT or SQEP Safety lookout is not (or, in the case of single seat Aircraft, cannot be) carried, ADH / AM(MF) **should** issue orders and instructions detailing the approved specific circumstances for 'single-pilot' simulated IF, which will be conducted as follows:

a. Unusual Positions or Practise Forced Landings **should not** be practised.

b. Where possible, Segregated Airspace **should** be used.

c. An appropriate radar service **should** be used.

d. Supernumerary Crew, Supernumerary Support Crew and Passengers **should not** be carried.

81. **Test Flying Over Congested Areas**. Unless necessary and specifically Authorized, Test Flying **should not** be conducted over a Congested Area except to the extent that it is necessary to do so in order to take-off or land iaw normal aviation practice.

82. **Reporting Hazardous Conditions**. If an Aircraft Commander encounters hazardous conditions in the course of a flight, they **should** inform the appropriate ATC

[18] Refer to STANAG 3117 – Aircraft Marshalling Signals.
[19] Refer to RA 3500 Series: Aerodrome Design and Safeguarding.
[20] Refer to ICAO Annex 2 – Rules of the Air.

Acceptable Means of Compliance 2307(1)

unit of the particulars of such conditions that might be pertinent to the Safety of other Aircraft.

Guidance Material 2307(1)

Rules of the Air

Applicability of Rules of the Air

83. These Regulations reflect the Rules of the Air as applicable within the UK FIR and are based upon the UK ANO and any agreed military exemptions. For operations outside UK airspace, flights will be conducted iaw national procedures unless specific exemptions have been agreed.

84. For the avoidance of doubt, any reference to 'Competent Authority' within the wider SERA Regulations will mean the MAA in the first instance for any UK military registered Air System.

Avoidance of Collisions

85. **Right-Hand Traffic Rule**. The handling pilot of an Aircraft which is flying within the UK in sight of the ground and following a road, railway, canal or coastline, or any other landmarks, is recommended to keep such a line of landmarks on their left, except where promulgated locally or when acting upon instructions given by the appropriate ATC unit.

86. **Formations.** Civil Aircraft not subject to MAA Regulatory Publications (MRP) ►will◄ treat Aircraft in formation as single Aircraft for the purposes of (UK) SERA.3210(►c◄) Right-of-Way, and therefore not give way to formations. Military Formation Leaders are advised to assume that any Aircraft will follow (UK) SERA.3210(►c◄) Right-of-Way rules (which does not ►◄ mandate that Aircraft give way to formations) ►◄.

87. **Use of ACAS Equipment fitted with Resolution Advisory Mode**. The use of ACAS equipment in TA-only mode, or in standby / off mode, may be ordered where it would not be appropriate to use Resolution Advisory mode. These circumstances may include but are not restricted to: circuit flying; air intercept training; air to air refuelling; air combat training; Formation Flying; and high energy manoeuvring. ADH / AM(MF) will consider the impact of an Unserviceable ACAS on Air System operating procedures.

88. **Prohibition or Restriction of Military Flying Within the UK FIR and UIR**. When necessary, the MOD may prohibit, restrict or impose conditions on flights by UK Military Aircraft or Military Aircraft of any visiting force in any airspace within the United Kingdom FIR / UIR. Prohibitions, restrictions or conditions imposed by the MOD may apply either generally or in relation to a specific class of Air System. ►◄

89. '**Due Regard**'. Freedom of the high seas includes the right of Aircraft of all nations to use the airspace over the high seas iaw the international Law of the Sea Convention of 1958 and 1982 which state that the freedom of the high seas includes the right of Military Aircraft to use the airspace above those seas without the permission of the Coastal States for over-flight and related military operations. The sovereignty of a nation state extends beyond its land area to the outer limit of its territorial seas. The airspace beyond the territorial sea is considered international airspace, where permission of the coastal state is not required for over flight and related military operations. Where for reasons of military contingencies or routine Aircraft carrier operations or other training activities over the high seas, the principles of 'Due Regard' apply.

90. ►**VFR Minima for the Visual Circuit**. ADH / AM(MF) may stipulate the minimum meteorological conditions for the visual circuit in MATZs in their AoR.◄

91. **IFR Flight**. IFR flying may be conducted in VMC. Whenever possible, it is recommended that an appropriate radar service is used when operating under IFR, irrespective of meteorological conditions.

92. **Operational Pattern Flying**. Where an Aircraft is flying an operational pattern (eg on a Combat Air Patrol station or monitoring a Joint Engagement Zone barrier)

Guidance Material 2307(1)

and cannot maintain VMC, it will seldom be practicable to fly at appropriate cruising levels. In such cases, the Aircraft will be deprived of even the limited protection afforded by the semi-circular system. In these circumstances and when the EMCON policy permits, it is recommended that a radar service be sought wherever possible.

Airspace and Air Traffic Management – General

93. **International Categorization**. Airspace is subdivided into various classes and functional areas in order to meet national or international airspace management requirements. For the purposes of international Standardization, certain of these subdivisions are classified according to an ICAO system within which minimum ATS are specified. The 7 airspace classifications (Classes A to G) agreed within ICAO have been adopted by the UK and are described in the UK AIP.

94. **UK FIR and UIR**. UK airspace, including that over the surrounding waters, is divided into 2 FIR. Above each of these FIR is a UIR. These 4 regions are collectively termed the London and Scottish FIR / UIR. The London and Scottish FIR / UIR are divided vertically into the following bands:

a. **UIR**. Upper Airspace (UAS) from FL245 to FL660.

b. **FIR**. Lower Airspace (LAS) from surface level to below FL245.

Full details of airspace boundaries are detailed in the UK AIP and RAF FLIPs.

95. **Controlled Airspace (CAS)**. This is a generic term which is used to describe airspace which is 'notified' as such in the UK AIP; within this airspace, civil pilots and Military Aircraft Commanders are required to comply with ATC and other Regulations forming part of the UK ANO and Rules of the Air Regulations. In essence, CAS comprises different types of control zone and Control Area to which are assigned one of the ICAO Airspace Classifications A to E (classes F and G are reserved for 'uncontrolled' airspace). See UK AIP for a breakdown of UK airspace by class.

96. **Air Traffic Management**. In the UK, the system of ATC is based on a joint civil / military scheme in which the military aviation authorities observe such ICAO Regulations as have been accepted by the Civil Aviation Authority, provided they do not impair the operational freedom of Military Aircraft. UK flight information services, separation standards and procedures applicable to all classes of airspace are detailed in the ATM 3000 series and CAP 774[21].

97. ►◄

[21] Refer to CAP 774 – The UK Flight Information Services.

Intentionally Blank for Print Pagination