RA 2335 - Flying Displays and Flypasts

Rationale

Military involvement in Flying Displays, Display Flying, Role Demonstrations and Flypasts play an important role in Defence engagement in the UK and abroad. These events also allow Heads of Establishment (HoE) to engage with the families and friends of serving military personnel, and Commanders to engage with their local communities.

Flying Displays, Display Flying, Role Demonstrations and Flypasts can involve Air Systems operating in close proximity to gatherings of people; this activity involves an increase in Risk to Life (RtL) over normal operating and if not managed effectively this risk could become intolerable.

This Regulatory Article (RA) regulates all UK military registered Air Systems (when conducting Display Flying, Role Demonstrations and Flypasts (Mil) worldwide) and foreign military registered Air Systems (when conducting Display Flying, Role Demonstrations and Flypasts (Mil) in the UK); additionally, it regulates all Flying Displays conducted at, or over MOD-Occupied Property. It ensures that appropriate individuals are made responsible for all facets of planning, preparing, managing and conducting Flying Displays, Display Flying, Role Demonstrations and Flypasts to ensure RtL remains As Low As Reasonably Practicable (ALARP)¹ and Tolerable.

Contents

Definitions Relevant to this RA

2335(1): Flying Display Organization and Management
2335(2): Display Flying, Role Demonstrations and Flypasts (Mil)
2335(3): Separation Distances, Minima and Restrictions

Definitions

Applicability of this RA. This RA applies to the following:
1. The HoE, Event Organizers (EO) and Flying Display Directors (FDD)
2. All personnel involved in conducting Display Flying, Role Demonstrations or Flypasts (Mil)
3. All personnel involved in conducting Display Flying or Flypasts
4. All foreign military registered Air Systems when conducting Display Flying, Role Demonstrations and Flypasts in the UK.

Civil Aviation Authority (CAA) Flying Display Permission. The CAA may grant permission for a Flying Display in accordance with the Air Navigation Order (ANO) and Civil Aviation Publication (CAP) 403 through either an Article 86 Permission or a Private Flying Display Permission; throughout this RA these are referred to as a CAA Flying Display Permission.

Display Flying. Any flying activity designed to demonstrate an Air System’s performance beyond that normally carried out during routine operations and training, whether or not it is performed in front of the public.

Display Authorisation (DA). A Public Display Authority or civilian equivalent foreign military Display Authority is required (except during Display Flying work-up training as per RA 2335(2)).

Flying Display. Any event at which Display Flying is deliberately performed for the purpose of providing an exhibition or entertainment.

Role Demonstration. Any flying activity designed to demonstrate an Air System’s performance commensurate with that normally carried out during routine operations and training.

¹ Refer to RA 1210 - Ownership and Management of Operating Risk (Risk to Life)
² This includes all military registered Remotely Piloted Air Systems (RPAS) unless exempted from the MRP under RA 1600 - Remotely Piloted Air Systems.
6. **Flypast (Mil)**. A Flypast (Mil) involves Air Systems flying, either singly or in formation, over or past a gathering of spectators along a pre-planned route without manoeuvring, other than when necessary for safe and accurate navigation. Accordingly, they will not include aerobatic manoeuvres.

7. **Display Sequence**. The Display Sequence is a complete list of all the individual manoeuvres, in chronological order, that are intended to be demonstrated by a Participant during a Flying Display.

8. **MOD-Occupied Property**. An aerodrome in the occupation of the MOD or of any visiting force or any other premises in the occupation or under the control of the MOD.

9. **Congested Areas**. Any area in relation to a city, town or settlement which is substantially used for residential, industrial, commercial or recreational purposes.

10. **Participant**. An airborne performer (or any person directly involved in the conduct of a performance) conducting Display Flying, Role Demonstrations or Flypasts.

11. **Secondary Spectator**. A person viewing a Flying Display from a location which has not been specifically designated for spectators by the EO or FDD.

12. **Display Flying Supervisor**. A Suitably Qualified and Experienced Person (SQEP) selected by the Aviation Duty Holder (ADH) or Accountable Manager (Military Flying) (AM(MF)) to supervise Display Flying Aircrew during their work-up period and throughout the display season.

13. **Display Area**. The Display Area is the ground area footprint of the airspace within which displaying Air Systems may be manoeuvred at a height below the following, (subject to the limits of the Flying Display Permission (if applicable), any further restrictions imposed by the FDD, and the Participants PDA or DA):

   a. Military Air Systems:
      (1) 500’ Minimum Separation Distance (MSD) for aerobatic manoeuvres.
      (2) 250’ MSD for non-aerobatic manoeuvres.

   b. Civilian Air Systems:
      (1) SERA.5005(f)(1) and SERA.5005(f)(2).

All flight outside the Display Area must comply with sub paras (a) and (b) above.

14. **Display Item**. A single, formation or group of Air Systems, flying as one single display ‘act’ throughout.

15. **High and Low Energy Air Systems**. Display Flying is considered High Energy if it contains Air Systems with a Max Take Off Mass of >1200kg or display at >150 Knots Indicated Air Speed (KIAS); all other Display Flying is considered Low Energy.

**Regulation 2335(1)**

**Flying Display Organization and Management**

2335(1) All Flying Displays shall be managed, organized and delivered in order to reduce the RtL to at least ALARP and Tolerable.

**Acceptable Means of Compliance 2335(1)**

**Flying Display Organization and Management**

16. **Applicability of this Regulation**. RA 2335(1) should apply to the HoE, EO and FDD of all Flying Displays held over MOD-Occupied Property and events over

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3 That is any Air System on a Military Aircraft Register.
4 Refer to the ANO 2016 Article 86 Para 15 (a).
5 Visiting Force is any visiting foreign military in this context.
6 Refer to Schedule 1 of the ANO 2016.
7 Civilian registered aircraft limitations and minima are detailed in CAP 403.
The MAA has the final say on the Tier of event which may be different to that anticipated by the HoE, EO and FDD. Refer to RA 2335 Compliant Means of Acceptable Issue 9 (1) - MAA Regulatory Processes Dis HoE, EO and FDD Permission is in place conduct Flypasts (Mil) or over in Display Notification)

17. **HoE.** The HoE should be accountable for managing, organizing and delivering a Flying Display where the RIL is at least ALARP and Tolerable. Where an event is held over non MOD-Occupied Property and/or there is no HoE, the EO should accept ► accountability for the event. If the EO is unable or unwilling to accept accountability the event should not have military registered ► Air Systems ◄ participating.

18. **Appointing ► Flying ◄ Display Executives.** The HoE should appoint suitable ► Flying Display Executives ◄ as follows:
   a. **EO.** The post of EO should be held by a suitably experienced ► person. ◄
   b. **FDD.** The post of FDD ► (and Deputy FDD, when required) ◄ should be held by a ► SQEP who should not be a Participant at the Flying Display. ► Additionally, the FDD should:
      1. Hold a valid FDD accreditation for the Tier of Flying Display being held, in accordance with para 23, 43 and 44;
      2. Be current for the Tier of Flying Display being held, in accordance with para 23 and 46;
      3. Have primacy over the EO in all matters concerning Air Safety. ◄

19. **Boundaries of Responsibility.** HoE should ensure that Terms of Reference (ToR) bound the ► responsibilities of the EO and FDD.

20. **ADH or AM(MF) Responsibilities.** ADH and AM(MF) should retain responsibility for the safe operation of Air Systems in their Area of Responsibility (AoR) at Flying Displays and when conducting Role Demonstrations and Flypasts (Mil).

21. **Authority to conduct Flying Displays.** Authority to conduct a Flying Display over MOD-Occupied Property should be given by the HoE ► and the MAA informed at least 42 days in advance of the event using [RA 2335 Form 1 (Flying Display Notification)] Administrative arrangements for such events should be detailed in orders or instructions.

22. **Events over non MOD-Occupied Property in the UK.** Where an event is held over non MOD-Occupied Property, military registered Air Systems should only conduct Flypasts (Mil) or Role Demonstrations, unless ► a CAA Flying Display ◄ Permission is in place.
   a. **Flying Displays over non MOD-Occupied Property in the UK with military registered Air Systems only.** Such events are MAA regulated and the CAA will not issue ► a Flying Display ◄ Permission; in these circumstances Participant’s ADH/AM(MF) should (providing they assess the activity is appropriate, ALARP and Tolerable) apply to the MAA for a waiver to para ► 22 in accordance with MAA03 ◄ having:
      1. Ensured that the EO understands and accepts accountability for the event in lieu of a HoE as per para ► 17; ◄
      2. Ensured the FDD understands that this RA applies to the event and he complies with its requirements fully;
      3. ► Confirmed that ◄ the event is suitable for their ► Air Systems ◄ to conduct Display Flying ► ◄;

23. **Flying Display Categorization.** The following ► criteria ◄ should be used by HoE, EO and FDD ◄ in conjunction with Table 1 ◄ to categorize Flying Displays into Tiers; FDDs should be ► accredited ◄ to at least the same Tier as that of the ► Flying Display ◄.

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8 Refer to MAA03 - MAA Regulatory Processes.
9 The MAA has the final say on the Tier of event which may be different to that anticipated by the HoE, EO and FDD.
Acceptable Means of Compliance

(1)

a. **High/Low Energy.** As per para 15. ◄

b. **Complexity.** HoE, EO and FDD should consider the following when making the judgement on whether an event is High or Low complexity:

   1. **Airspace.** Consider the complexity of the airspace surrounding the display venue, including proximity to controlled airspace or areas with specific limitations that may affect the type of Air System displaying.

   2. **Geography.** Consider the hazards posed by the terrain along with crowd and event layout.

   3. **Congested Areas.** Consider the proximity, density and size of built up and Congested Areas.

   4. **Secondary Spectators and Third Parties.** Consider the likelihood and controllability of spectators gathering outside the designated crowd area(s) and any effect the display might have on members of the public in the vicinity. Consider the proximity of major roads, railway lines and local infrastructure and how busy they are likely to be during the event. ◄

   5. **Display Length.** Consider the effect of the Flying Display window on deconfliction issues.

   6. **Display Team Size.** Consider the number and type of Air Systems in a display team with respect to the size and nature of the display venue. ◄

   7. **Event Type.** Consider the type of event and how flying activity is integrated; is the Flying Display the focus of the event or just an additional attraction?

### Table 1. Flying Display Tiers

<table>
<thead>
<tr>
<th>No of Items⑩</th>
<th>Low Complexity</th>
<th>High Complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low Energy</td>
<td>High Energy</td>
</tr>
<tr>
<td>1</td>
<td>Tier 1</td>
<td>Tier 1</td>
</tr>
<tr>
<td>2-3</td>
<td>Tier 1</td>
<td>Tier 2</td>
</tr>
<tr>
<td>4-7</td>
<td>Tier 1</td>
<td>Tier 2</td>
</tr>
<tr>
<td>8-12</td>
<td>Tier 2</td>
<td>Tier 2</td>
</tr>
<tr>
<td>13+</td>
<td>Tier 3</td>
<td>Tier 3</td>
</tr>
</tbody>
</table>

Note:

Any Flying Display with a High Energy display team of 2 or more Air Systems should be categorized as a minimum Tier 2.

**Responsibilities of the ▶EO, FDD and Flying Control Committee (FCC)◄**

24. **Display Area.** The FDD should be responsible for designating a Display Area. Details of ▶obstacles, hazards, ◄structures occupied by non-essential personnel and any anticipated areas of ▶Secondary Spectators◄ within the Display Area should be annotated on a map which is ▶promulgated to all ◄Participants.

25. **EO.** The EO ◄should be responsible for all matters pertaining to the wider planning and execution of ▶the event◄. The EO should:

   a. Be responsible for ▶the ◄production of an event Risk Assessment on behalf of the HoE; ▶◄

   b. Ensure that appropriate insurance arrangements are in place for all participating Air Systems, whether ▶participating as a ◄Static Display, Flypast ▶◄, Role Demonstration or ▶conducting ◄Display Flying.

26. **FDD.** The FDD should be responsible for:

⑩ A display team is a single item.
<table>
<thead>
<tr>
<th>Acceptable Means of Compliance 2335(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ▶Hazard identification and the subsequent assessment, application of control measures and mitigations of the risks associated with the Flying Display elements of an event;</td>
</tr>
<tr>
<td>b. ▶Production and promulgating of a Flying Display Risk Assessment to all Participants at the earliest opportunity;</td>
</tr>
<tr>
<td>c. ▶The coordination, control and safety of all flying activities ▶conducted as ▶part of a Flying Display;</td>
</tr>
<tr>
<td>d. ▶Monitoring flying discipline ▶during a Flying Display;</td>
</tr>
<tr>
<td>e. ▶The scrutiny of all Participants’ PDA, ▶DA, letter of exemption from regulatory compliance or national equivalent(s);</td>
</tr>
<tr>
<td>f. ▶The briefing (including ▶the production of written Display ▶Pilots’ notes) and debriefing of ▶Participants;</td>
</tr>
<tr>
<td>g. ▶Control of the Flying Display programme and cancellation or modification of the programme in the case of adverse weather or other conditions that directly affect the ▶Flying Display;</td>
</tr>
<tr>
<td>h. ▶The appointment ▶and management of a FCC, ▶if applicable (see para 32);</td>
</tr>
<tr>
<td>i. ▶Ensuring appropriate orders for the Flying Display are in place, including orders for incident and post-crash management;</td>
</tr>
<tr>
<td>j. ▶Coordinating the completion ▶and submission ▶of RA 2335 Form 2 (Foreign Mil Application) and RA 2335 Form 3 (Foreign Mil Validation) and seeking approval from the MAA for foreign military registered Air System involvement at their event;</td>
</tr>
<tr>
<td>k. ▶Event occurrence reporting;</td>
</tr>
<tr>
<td>l. ▶The validation of foreign display Participants as required (see para 28);</td>
</tr>
<tr>
<td>m. ▶Ensuring that the Local Authority Safety Advisory Group (SAG) ▶is ▶involved in the planning from the earliest opportunity possible.</td>
</tr>
</tbody>
</table>

27. **Foreign military registered Air System Flying Display Participants**

   ▶the ▶FDD should ensure that:

   a. ▶Foreign military registered Air Systems are approved to ▶conduct Display Flying ▶by the MAA;

   b. ▶A completed RA 2335 Form 2 (Foreign Mil Application) is submitted to the MAA [DSA-MAA-Display@mod.gov.uk] at least 42 days ▶in advance of the event;

   c. ▶The Participant submits the planned (zero wind speed) ground track of their Display Sequence overlaid on imagery (or suitable scale mapping) of the display venue to the FDD as soon as possible. The FDD should use this to confirm the Participant complies with this ▶RA and incorporate ▶the Display Item ▶into their Risk Assessment, if required.

   d. ▶

28. **Validation of foreign military registered Flying Display Participants.** ▶If required by the MAA, the FDD or the EO, the validation of such Participants ▶should be ▶conducted ▶by the FDD, a member of the FCC or another SQEP individual observing the ▶Display Sequence ▶on behalf of the FDD.

   a. ▶Validation during a Flying Display. Validation of a ▶Participant should not take place during the Flying Display for which the validation is intended.

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11 ▶For further guidance see paras 54-57.
29. **Notification of Flying Displays.** The FDD should:

   a. Request Restricted Airspace (Temporary) (RA(T)) in accordance with CAP 403\(^{12}\) using CAA Form [DAP1920D (Flying Displays)] or [DAP1920F (Flypasts)].

   b. **Validation Reporting.** The FDD should ➤complete and submit** [RA 2335 Form 3 (Foreign Mil Validation)] to the MAA prior to the event. For further guidance see para ➤56. ➥

30. **Post Event Feedback.** All FDD should provide written feedback to the MAA using the joint CAA/MAA FDD Post Event Feedback Form [RA 2335 Form 4 (Post Event Feedback)] within ➤7 ➣ days of the event.

   ▶Secondary Spectators◄ and Third Parties at Flying Displays

31. EO/FDD should take all reasonable steps to minimize the risk to ▶Secondary Spectators◄ and third parties. Particular consideration should be given to the following:

   a. **Congested Areas.** EO should put in place and record appropriate mitigation to reduce the risk to ➤personnel within◄ Congested Areas;

   b. **Roads and Railways.** EO should put in place and record appropriate mitigation to reduce the risk to third parties on busy roads and railways surrounding ➤a display◄ venue;

   c. **Secondary Spectators.** EO should identify ➤areas likely to be occupied by Secondary Spectators◄ take all reasonable steps to prevent Secondary Spectators gathering in high risk areas and record the mitigation taken. Prevention will not always be possible; in this case ▶EO◄ should take all reasonable steps to inform Secondary ▶Spectators◄ of the risk to them.

   d. **Curtailing a Flying Display due to ▶Secondary Spectators◄ or Third Parties.** The presence of ▶Secondary Spectators◄ or third parties may not automatically require a Flying Display to be curtailed or abandoned; an EO/FDD should use their judgement to assess the risk against the mitigations taken above and satisfy themselves that all reasonable steps ▶to minimize RTL◄ have been taken.

**Management of Flying Displays**

32. **FCC.** A FCC should be appointed by the FDD for Flying Displays where there are 4 or more ▶Display Items and the FDD should issue the FCC with appropriate ToR. The FCC should:$^6$

   a. ➤ Assist the FDD ➤with ◄ the safe execution of the Flying Display;

   b. ➤ Assist the FDD ➤to monitor the standard and Flying Display related discipline of Participants;$^6$

   c. ➤ Assist the FDD in the validation of any display Participants, ➤if required;

   d. Provide the FDD with specialist knowledge regarding Display Items;

   e. Provide the FDD with SOEP opinion in the case of any regulatory infringements or concerns regarding flying discipline;

   f. Advise the FDD on restrictions or additional limitations if required;

   g. Monitor the conduct of all display Participants for regulatory compliance;

   h. Intervene or stop, on the grounds of safety, any display Participant or, in extreme cases where the FDD cannot be consulted, the whole Flying Display;

   i. Be available throughout the period of the Flying Display.

33. **Arrivals and Departures at Flying Display venues.** All arrivals and departures at display venues should be conducted in accordance with the aerodrome procedures

\(^{12}\) The establishment of a RA(T) requires the issue of a statutory instrument by the Department for Transport and as such should be notified a minimum of 120 days in advance of the event. Applications should be sent to the CAA Airspace Regulation department at: ARops@caa.co.uk
and the extant regulations. Pilots of Air Systems **should not** use the privileges of their PDA or DA during arrivals or departures unless explicitly authorised by both the FDD and the aerodrome’s Air Traffic Control Supervisor; such approvals **should** be limited to pre-arranged Display Flying practises or when the arrival or departure is conducted as part of the Display Sequence during the Flying Display itself.

34. **Ground Markings.** Full use **should** be made of existing ground features such as runways, supplemented as necessary by other visual means including Day-Glo markers (preferably with vertical extent) and lighting. Markers **should** be fixed firmly to minimize the effect of downwash. The following ground markings **should** be provided:

a. **Main Display Line.** In accordance with RA 2335(3) the main display line would normally be 230m from the crowd line and parallel to it. The FDD may elect not to mark the main display line if there is a suitable and easily recognisable physical feature, at least the minimum required distance from the crowd line and in the correct orientation;

(1) **FDDs should** be cognisant of recognisable and/or compelling features that may be a distraction to Participants when considering the requirement to mark the main display line, eg a non-parallel taxiway or runway.

b. **Display Datum.** The display datum is the point on which individual displays are based and is normally the centre point of the crowd. The FDD may elect not to mark the display datum if there is a suitable and easily recognisable physical feature.

35. **Control of Explosives.** Use of explosives for simulated ground-bursts, smoke or other special effects **should** be strictly controlled by a competent person appointed by the EO. Debris from such effects **should not** impinge on Air Systems, spectators or the runway/taxiways and the scale of any effects **should** be known prior to the event. Briefings for ground officials and **Participants should** draw attention to the hazardous nature of such devices. Furthermore, Participants **should** be appropriately authorized **to conduct** such activity.

36. **Civilian Registered Air Systems at Flying Displays over MOD-Occupied Property.** FDD **should** ensure that pilots flying civilian registered Air Systems:

a. **Hold a valid DA or letter of exemption in accordance with CAP 403, or a national equivalent as evidence of their competence to conduct Display Flying, even if conducting a Flypast;**

(1) **If a civilian pilot does not hold a valid DA then they should not be permitted to utilize a SERA.5005(l) exemption as per para 61.**

b. **Notify the FDD of their intended Display Sequence at least 24 hours in advance;**

(1) **This should include the measures the Participant would take if they needed to diverge from the intended Display Sequence (for example due to wind effects), and confirm that the intended Display Sequence complies with the airspace restrictions (local avoids, the anticipated location of Secondary Spectators and third parties) derived from the event Risk Assessment.**

c. **Demonstrate that the intended manoeuvres comply with the conditions placed on their Air System’s Certificate of Airworthiness or Permit to Fly;**

d. **Do not breach the minima permitted by their DA or national equivalent;**

e. **Comply with the separation minima within RA 2335(3).**

37. **CAA Exemptions.** A FDD at a MAA regulated event **should not** accept a CAA exemption for a Participant flying a civilian registered Air System (where that exemption would allow the Participant to breach any part of this). If the FDD thinks the CAA exemption is appropriate for their event, the HoE **should** apply for a waiver in accordance with MAA03.
38. **Commercial Passenger or Transport Air System Displays Over MOD-Occupied Property.** An FDD **should not** allow Commercial Air Systems to conduct Display Flying, Role Demonstrations or Flypasts over MOD-Occupied Property without first seeking the advice of the CAA via [GA@CAA.co.uk](mailto:GA@CAA.co.uk).

39. **Minimum Height for Participants Flying Civil Registered Air Systems.** The Participant DA specifies the minimum heights to which the holder may display, and FDDs **should consider permitting** to operate to those minima with the approval of the HoE.

40. **Lateral Separation Distances for Civilian Participants.** The minimum lateral separation distances as specified at para 85 **should** apply in all cases.

41. (1) **Standard Warning and Stop Calls.** If the FDD and/or FCC perceive minima are being encroached, **or breached or have safety concerns that require** the cessation of a Participants Display **Sequence**, the following Standard Warning Calls and responses **should** be used:

   **Table 2.** **Standard Warning and Stop Calls**

<table>
<thead>
<tr>
<th>FDD/FCC Warning Call</th>
<th>Pilot Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>'(Callsign) Too Low'</td>
<td>‘Roger (Callsign)’</td>
</tr>
<tr>
<td>'(Callsign) Too Close'</td>
<td>‘Roger (Callsign)’</td>
</tr>
<tr>
<td>FDD/FCC Terminate Call</td>
<td>Pilot Response</td>
</tr>
<tr>
<td>'(Callsign) Terminate’</td>
<td>‘Wilco (Callsign)’</td>
</tr>
<tr>
<td>FDD/FCC Stop Call</td>
<td>Pilot Response</td>
</tr>
<tr>
<td>'(Callsign) Stop Stop Stop Stop Stop'</td>
<td>‘Wilco (Callsign)’</td>
</tr>
</tbody>
</table>

   a. **Too Low Call.** A ‘Too Low’ Call **should** be made at an appropriate time if the FDD/FCC assess that an Air System has descended below the pilot’s PDA or DA minima or the minima in place for the Flying Display.

   b. **Too Close Call.** A ‘Too Close’ **should** be made at an appropriate time if the FDD/FCC assess that an Air System has breached the minimum lateral separation distance appropriate to that Display Item.

   c. **Terminate Call.** A ‘Terminate Call’ **should** be used when a Participant is required to stop Display Flying for a reason other than their fitness or competence (eg intruder aircraft, birds, etc). A ‘Terminate Call’ can also be used by a Participant to notify their intention to halt a display if deemed necessary for any reason. At the discretion of both the FDD and the Participant, the display may be resumed if safe to do so.

   d. **Stop Call.** A ‘Stop Call’ **should** be made if the FDD **and/or** FCC **have a safety concern related to a Participants fitness or competence;** additionally, a ‘Stop Call’ **should** be made if a third Warning Call is required. Once a Stop Call has been made, the Participant **should not** be allowed to recommence their display.

   e. Where an event has a Participant with a non-radio capable Air System, a fully briefed procedure **should** be established to enable communication of Standard Warning and Stop Calls.

   f. For Stop Calls, once the Flying Display is complete (or earlier if safe and practicable) the FDD **should:**

      1. Confirm Participants understand they have been stopped and explain why;

      2. Where the Participant is flying a civilian registered Air System, inform the CAA General Aviation Unit as soon as reasonably practical on 01293 573919;

      3. Submit a Defence Aviation Safety Occurrence Report (DASOR) or Mandatory Occurrence Report (MOR);
Acceptable Means of Compliance 2335(1)

RA 2335 Form 4 (Post Event Feedback Form)

Further details of the actions to be taken by a military Participant are at para ▶75. ◄

Guidance Material 2335(1)

Flying Display Organization and Management

42. **Categorization of an Event as a Flying Display.** HoE may consider an event that only has Flypasts or Role Demonstrations to be categorized as a Flying Display if they consider it necessary. Reasons for this may include:

a. The complicated nature of an event (such as very unusual mixed formations);

b. Large gatherings of people;

c. Complex geography or airspace limitations.

FDD ▶◮ Accreditation

43. **FDD Accreditation Course.** The CAA/MAA will conduct a joint FDD Accreditation Course in order to accredit FDDs in the UK. ◄

a. **Military Applicants.** The MAA will only approve SQEP military applicants to ▶attend the FDD Accreditation ◄ Course; as such military applicants must state their case for being a suitable FDD on their application and it must be endorsed by the relevant HoE or ADH/AM(MF).

**Note:**

Military applicants will only be accepted when their qualification is primarily for military purposes. Serving military personnel who are not required to act as an FDD for military purposes may apply ▶for accreditation ◄ through the CAA.

b. ▶FDD Tier Accreditation.** A joint CAA/MAA panel will be convened after FDD Accreditation Courses to review each applicant’s performance during the course. This panel will consider the experience, qualifications, interaction during the course and results of exams before accrediting to Tier 1, 2 or 3.

c. ‘Mil’ and ‘Civ’ Accreditation. The panel will also consider, based on the experience of the individual and the knowledge displayed during the FDD Accreditation Course, whether they will be accredited as a ‘Mil’, ‘Civ’ or ‘Mil/Civ’ FDD.

(1) **Mil.** The individual is only permitted to be FDD/Deputy FDD at Flying Displays regulated by the MAA in accordance with RA 2335.

(2) **Civ.** The individual is only permitted to be FDD/Deputy FDD at Flying Displays regulated by the CAA in accordance with CAP 403.

(3) **Mil/Civ.** The individual is permitted to be FDD/Deputy FDD at either MAA or CAA regulated Flying Displays. The individual may be accredited to a different Tier for each category, dependent on SQEP. ◄

44. **Validity.** An FDD’s accreditation will remain valid for a period of 3 years subject to their ongoing ▶suitability (SQEP) ◄ for the role*13 *. ◄

45. **Deputy FDD.** An appropriately accredited FDD may act as Deputy FDD to provide resilience for an event. This individual(s) must be annotated as a Deputy FDD on the RA 2335 Form 1, or application for CAA Flying Display Permission. ◄

46. **Currency.** To maintain currency the FDD must act as a FDD within the appropriate Tier ▶of event ◄ at least once every two years. However if, for example, a Tier 3 FDD only acts as FDD for a Tier 1 ▶or Tier 2 ◄ Flying Display within the currency period, the Tier 3 privileges will be forfeited ▶and those of the lower Tier will be maintained.

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13 ▶Successful completion of a FDD Accreditation Course is required every 3 years to maintain accreditation. ◄

14 That is a FDD who is accredited for the Tier of ▶Flying Display ◄ at which they are Deputising.
47. Currency may also be reset by acting as a Deputy FDD provided that:
   a. They are annotated on the RA 2335 Form 1 or application for CAA Flying Display Permission;
   b. They take an active part in the planning and execution of the Flying Display;
   c. They are in attendance for the duration of the Flying Display;
   d. The nature and extent of Deputy FDD participation, and the intent to reset their currency, is annotated by the primary FDD on the FDD Post Event Feedback Form.

48. Shadow FDD. Tier 1 or Tier 2 accredited FDD may shadow the FDD for a higher-Tier event in order to develop and build on experience. This shadow role can be used to improve the level of competence or with a view to upgrading to a higher Tier in the future. The primary FDD must record the level of participation of the Shadow FDD in the Post Event Feedback Form which will enable the CAA/MAA to properly assess the level of experience of the individual if an upgrade is requested.
   a. Unless the primary FDD is an accredited mentor, they must not comment on the ability or performance of the Shadow FDD but limit their comments to their participation level (ie the level of their involvement in the planning and/or execution of the Flying Display).
   b. If the primary FDD is a mentor, the Shadow FDD must ensure that their participation in the planning and/or execution of the Flying Display is appropriately logged and countersigned by the primary FDD so that any experience gained can be demonstrated at the time of application or upgrade.

49. Upgrading. To upgrade to a higher FDD Tier or from Mil or Civ to Mil/Civ, FDDs will re-apply to the CAA and/or MAA demonstrating that they have gained the necessary competence and experience for the higher Tier.

50. Revocation. If an FDD underperforms, an investigation will be undertaken by the MAA in accordance with the Defence Aviation Flowchart Analysis of Investigation Results (DA FAIR) system in accordance with the MAA Manual of Air Safety. After the investigation, the following actions are available to the CAA/MAA:
   a. No action.
   b. Downgrade Tier.
   c. Further training.
   d. Suspension.
   e. Complete revocation.

51. SQEP Recording. The CAA will administer a combined military/civilian FDD list that will be available to HoE and EO. This list will detail an individual qualification (ie which Tier FDD they are) and will record the Flying Displays they have directed. The MAA is responsible for administering military personnel on the combined list and will also ensure the correct competency is recorded on Joint Personnel Administration.

Management of a Flying Display

52. FCC. The FCC will consist of suitably experienced personnel appropriate for the Tier of Flying Display and will be issued with ToR from the FDD. The FCC may include the FDD, who may act as Chairman of the Committee, and additional members who have the requisite expertise of Display Flying and/or Flying Display organization/conduct. Chairmanship of the FCC may also be delegated.

15 The CAA also uses the Flowchart Analysis of Investigation Results (FAIR) System which is detailed in CAP 403.
53. **Boundaries of Responsibility.** When HoE are considering the ToRs for the EO and FDD, there are a number of responsibilities that they may wish to allocate. These include, but are not limited to:

a. The location of car parks.
b. The location and number of spectator enclosures.
c. Air System parking and marshalling areas.
d. Air System refuelling areas.
e. Emergency vehicle access and egress points.
f. Emergency control centre location and set up.
g. Ownership of the event Risk Register.

**Foreign Military Registered Air Systems Participating at UK Flying Displays**

54. **Responsibilities of the MAA.** On behalf of the MOD, the MAA maintains oversight of all foreign military registered Air Systems participating at UK Flying Displays. The MAA ensures the Participant is SQEP, suitably approved at a national level and the proposed Display Sequence complies with this RA using the documentation supplied by the FDD.

55. **Responsibilities of the FDD.** The FDD is responsible for ensuring that the Participant is suitable for their event and can comply with this RA, CAP 403, the CAA Flying Display Permission (if issued) and any restrictions derived from their event Risk Assessment. Further details are contained in RA 2335 Form 2 (Foreign Mil Application).

56. **Validation.** The MAA and/or the FDD can mandate the validation of any display Participant. When the MAA mandates validation, then that validation may take place at any display venue within the same display season and where a Participant has more than one authorized Display Sequence, then validation of any one of the Display Sequences is accepted by the MAA as sufficiently appropriate to validate all Display Sequences. All validations will be conducted by SQEP.

   a. **Guidance on Requirement for Validation.** The MAA is likely to require validation where an individual Participant is new, they have not displayed in the UK before, or for any formation team with greater than 4 Air Systems. This is guidance only and the MAA may require validation of any foreign military Participant.

57. **Foreign Flypast (Mil).** Foreign military registered Air Systems conducting a Flypast (Mil) over MOD-Occupied Property do not require formal MAA approval; however, the relevant sections of RA 2335 Form 2 (Foreign Mil Application) must be submitted 42 days in advance of the event to notify the MAA of the activity.

**Public Safety**

58. **Safety and Risk Assessment.** Guidance on managing and recording risk is contained within RA 121 for events over MOD-Occupied Property and civil events with Flypasts (Mil) only.

59. **Minimum Public Safety Considerations.** Specific minimum requirements for public safety are:

   a. Spectator areas (defined as designated spectator enclosures and associated car parks) must be clearly delineated by barriers. The forward boundary of the spectator area, beyond which the Display Sequence is carried out, is referred to within this RA as the ‘crowd line’. At venues where the spectator area also defines sides, the crowd line is, for the purpose of an Air System maintaining the correct lateral clearances, to be considered to run along the front and down the sides of the spectator area.

   b. Adequate markings will be set up in the Display Area to enable Participants to maintain appropriate separation from the spectator areas. Details of ground markings and separation distances are given in RA 2335(3), para 60 and 85.
c. Air System approach and departure routes to the Display Area will be chosen to avoid over flight of the spectator areas. These routes will minimize risk for adjacent ►Congested ◄ Areas.

d. Air System parking areas will be out of bounds to spectators when engines are running or Air Systems are taxing.

e. Suitable routes for emergency vehicles will be established, clearly marked, and kept free from obstruction at all times.

f. Hazardous Materials. Civilian Participants can advise FDD on specific hazards relating to their Air Systems. EO/FDD can check the hazardous materials of military registered Air Systems on the MOD Aircraft Crash Hazards Document Set (ACHaz) (MOD computer system users only).

60. Supplementary Markings. FDD may provide additional markings to assist ►Participants ◄ to identify appropriate minimum distances from the crowd line for various aspects of their Display ►Sequence ◄, where these are different from the normal 230m minimum. If used, FDD must ensure that Participants are fully briefed on their position and meaning.

61. Civil Participants Operating Minima. The CAA has granted the MOD an annual clearance for civilian Participants holding a ►DA ◄ or ►letter of exemption ◄ to operate below the minima stated in SERA.5005(f)(2), during a Flying Display at nominated MOD-Occupied Properties. This clearance is obtained annually and held by the MAA.

62. Participation of non-Release To Service (RTS) UK Military Registered Air Systems. Participation of non-RTS UK military registered Air Systems at Flying Displays, Role Demonstrations or Flypasts (Mil) requires the ►approval ◄ of the ADH or AM(MF). ►Such activity must conform with the Air System Military Permit to Fly or Contractor Flight Limitations Document. The MAA must be informed of such activity by contacting DSA-MAA-Display@mod.gov.uk ◄.

63. CAP 403 - Flying Displays and Special Events: Safety and Administrative Requirements and Guidance. CAP 403 provides additional guidance to EO and FDD for the safety planning of a Flying Display, including working with Local Authorities, Emergency Services, Highways Authorities, Safety Advisory Groups and wider Health and Safety Executive requirements.

Display Flying, Role Demonstrations and Flypasts (Mil)

2335(2) ADH and AM(MF) shall ensure that personnel involved in conducting Display Flying, Role Demonstrations and Flypasts (Mil) are competent and appropriately trained, approved, authorized and supervised.

64. Applicability of this Regulation. RA 2335(2) should apply to all personnel involved in conducting Display Flying, Role Demonstrations and Flypasts (Mil) in military registered Air Systems. Additionally, at all times, the most restrictive limitations of this ►RA ◄ or the following should be applied:

a. STANAG 3533/AFSP-5 if applicable.

b. Orders issued by the ADH or AM(MF) for Air Systems in their AoR conducting Display Flying, Role Demonstrations or Flypasts (Mil).

c. Orders issued by the HoE, EO or FDD for a specific event.

d. CAP 403 where ►a CAA Flying Display ◄ Permission exists for a ►display ◄ venue. Whilst the ►CAA Flying Display ◄ Permission will be time bounded ► durch ◄, any Participants flying military registered Air Systems on the same day must apply the limitations of the ►CAA Flying Display ◄ Permission and CAP 403 regardless of what time they conduct their flying activity.

e. PDA ►or DA. ◄
65. **Display Flying Aircrew.**
   a. ADH or AM(MF) should ensure that the aircrew selected to conduct Display Flying are suitably qualified and experienced in both airborne and ground-based aspects of Display Flying.
   b. Where Display Flying Aircrew are responsible for conducting Risk Assessments, they should be appropriately trained and/or supported.
   c. Display Flying Aircrew should hold a valid PDA ► or DA ◀ prior to conducting Display Flying at a Flying Display.

66. **Display Flying Supervisor.** ADH or AM(MF) should nominate a SQEP Display Flying Supervisor.

67. **Display Flying Support Personnel.** ADH or AM(MF) should allocate sufficient support personnel and/or resource to allow aircrew selected for Display Flying to safely and effectively conduct activity throughout the season.

68. **Practice Display Flying.** ADH or AM(MF) should assure themselves that practice Display Flying is conducted in such a way and at such a location as to ► ensure that RTL to Participants, Secondary Spectators and third parties is ALARP and Tolerable. ◀

69. **Practice Display Flying Minimum Height.** The ADH or AM(MF) should promulgate orders stipulating who can approve Display Flying Aircrew to a lower height; this should not be delegated below Sqn Cdr. That individual is responsible for signing the ► aircrew’s ◀ training folder16.

70. **Pre-Season Display Flying Work-up and PDA.** Pre-season display practices should be personally authorized by the Display ► Flying ◀ Supervisor. The following points are relevant to the Display Flying Work-up:
   a. The Work-up should be of a progressive nature leading, in stages, down to final approved display heights, and initially conducted only over their own airfield unless the ADH or AM(MF) directs otherwise.
   b. Consideration should be given to the use of appropriate simulators for initial practices.
   c. The previous season’s Display Pilot should be used ► in an advisory/monitoring capacity ▼ during practice and validation.
   d. Each practice Display Flying sortie should be monitored by the Display ► Flying ◀ Supervisor. If the Display ► Flying ◀ Supervisor is on the ground, he should be in a suitable position to ensure he is not a distraction to the Display Flying Aircrew.
   e. A record of Display Flying practices detailing weather, runway, etc. should be kept in the ► aircrew’s ◀ training folder.
   f. The Display Flying Aircrew and ► the Display Sequence ◀ should be approved by the ADH or AM(MF) using [RA 2335 Form 5 (PDA)] as the mechanism to signify that final approval has been granted.
   g. The PDA should be made available to FDD.
   h. All practice Display Flying sorties should, where practicable, be video recorded.

71. **Ground Knowledge.** ADH and AM(MF) should ensure that, in parallel to the airborne work-up in para ►70, ▼ aircrew and support personnel selected for Display Flying are appropriately trained ► ▼ in the relevant non-flying aspects of Display Flying, such as Fatigue, Supervision and relevant regulatory knowledge (ie RA 2335, ► the ANO and CAP 403). ◀

16 Or electronic equivalent.
72. **Deviations from PDA.** Deviations from the clearances or permitted modifications to the Display Sequence, as detailed on the approved PDA Form, should not be permitted without authorization by the ADH or AM(MF). If a FDD is unable to accept the Participant’s approved Display Sequence the Participant should not perform.

73. **Role Demonstrations.** Role Demonstrations do not necessarily require a PDA, but ADH and AM(MF) should approve Role Demonstration manoeuvres. ADH and AM(MF) orders should detail the following:
   a. The approval mechanism, clearance procedures and authorization process for Role Demonstrations.
   b. Safety management procedures, limitations and restrictions.
   c. Competence/SQEP requirements of the aircrew in the air and on the ground.

74. **Flypasts (Mil).** Flypasts (Mil) do not constitute Display Flying so do not normally require a PDA. However, ADH and AM(MF) should have orders detailing appropriate limitations specific to the Air Systems in their AoR.

75. **Stop Calls.** Where the FDD/FCC has issued a ‘Stop Call’ due to a breach of minima or limits, or other safety concerns surrounding the Participants fitness or competence, the Participant:
   a. Should not conduct further Display Flying until they have permission from their ADH or AM(MF).
   b. Should submit a DASOR as soon as practicable.

76. **Warning Calls.** ADH and AM(MF) should issue orders which state the actions to be taken by Display Flyincrew after a Warning Call has been issued to them.

77. **Display Venues.** ADH and AM(MF) should take all reasonable measures to assure themselves that display venues at which their Air Systems perform are suitable, safe and appropriate for the Air System and Display Sequence. This should include being satisfied that:
   a. The EO and FDD are suitably qualified and/or experienced in accordance with RA 2335(1).
   b. RL attributable to Display Flying, Role Demonstrations or Flypasts (Mil) remains at least ALARP and Tolerable including having reviewed the FDDs briefing material and event Risk Assessment.

78. **Guidance Material 2335(2)**

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**Display Flying, Role Demonstrations and Flypasts (Mil)**

79. **Applicability of RA 2335 or CAP 403.** The following tables show Flying Display Participants which regulations (relevant to Flying Displays) apply and therefore what flying activity is permitted.

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**Table 3. Events over MOD-Occupied Property**

<table>
<thead>
<tr>
<th>MOD-Occupied Property</th>
<th>Mil Reg Air Systems</th>
<th>Civ Reg Air Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flying Display</td>
<td>Other Event</td>
<td>Flying Display</td>
</tr>
<tr>
<td>Permitted Activity</td>
<td>Role Demonstrations Flypast (Mil) (iaw para 87)</td>
<td>Role Demonstrations Flypast (Mil) (iaw para 88)</td>
</tr>
<tr>
<td>Regulation (most restrictive of)</td>
<td>RA 2335</td>
<td>RA 2335</td>
</tr>
</tbody>
</table>
Table 4. Events over non MOD-Occupied Property in the UK

<table>
<thead>
<tr>
<th>Permitted Activity</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display Flying Role Demonstrations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display Flying Flypast</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role Demonstrations Flypast (Mil)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iaw para ►87◄)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>RA 2335</td>
<td>RA 2335</td>
</tr>
<tr>
<td></td>
<td>CAP 403</td>
<td>As per the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ANO/SERA</td>
</tr>
</tbody>
</table>

Note:

For Flying Displays outside the UK, military registered Air Systems must comply with the most restrictive of RA 2335 and relevant national regulations.

80. Parachuting\(^{17}\). When participating at a Flying Display, MOD approved parachute display teams will be deemed to be on duty. ►Parachute display◄ teams will be in possession of a valid Parachuting Permission and exemption certificate issued by the CAA, and the parachute display must be conducted in accordance with ADH or AM(MF) orders. ►Parachute display◄ team leaders will be responsible for parachuting and flying operations carried out by that display team, the provision of a qualified Drop Zone Safety Officer\(^{18}\), and ensuring adequate liaison and co-ordination with the FDD ►◄.  

81. Role Demonstrations or Flypast (Mil) being Categorized as Display Flying. ADH or AM(MF) may, if they deem appropriate, categorize Role Demonstrations or Flypast (Mil) as Display Flying.

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82. Overflight of Spectators. All Participants should avoid overflight of ►spectator areas and known Secondary Spectators◄ at a Flying Display.

83. Inside the Display Area. ►Participants ◄ should not perform aerobatic manoeuvres above any structures occupied by non-essential personnel or known ►Secondary Spectators◄ within the Display Area. Additionally, any non-aerobatic overflight of the above during a Display Sequence should not be less than 500’ ►MSD◄.

84. Outside the Display Area. Display Aircrew should adhere to a MSD of 250’ for non-aerobatic manoeuvres and 500’ for aerobatic manoeuvres ►outside the Display Area◄\(^{19}\).

85. Lateral Separation. The following minimum lateral separation distances should apply to all military registered Air Systems at all Flying Displays and civilian Air Systems at Flying Displays over MOD-Occupied Property. Where a FDD, ►Participant or their◄ operating authority considers that a greater separation is required for any specific Air System or manoeuvre, that minimum should be identified and complied with.

\(^{17}\) While parachuting itself does not constitute a display Participant under RA 2335, this para is included for the assistance of the EO and FDD.

\(^{18}\) Drop Zone Safety Officers are not required to conduct FDD Accreditation.

\(^{19}\) This limitation applies from when the aircraft commences its run in for its Display Sequence, Role Demonstration or Flypast (Mil) to when it has completed its Display Sequence, Role Demonstration or Flypast (Mil).
a. **Ground Operations.** During all ground operations, including refuelling, servicing and at any time when engines or rotors are running, a minimum separation of 15m should be maintained between spectator areas and the nearest point of the Air System concerned. This limit applies to Air System taxiing or air-taxiing, except when such taxiing is away from a marked taxiway and without the assistance of a marshaller, when the minimum separation is increased to 65m.

b. **In-Use Runways.** The minimum separation between the nearer edge of any runway used for conventional Fixed Wing take-off and landings (including 'touch and go' and ►'low approach'◄) and the crowd-line should be 100m. However, for light Air Systems with a MTOM of ≤1200 kg, and a take-off and landing speed of less than 100 KIAS, this separation may be decreased to 65m. Other than for emergencies, a runway should only be used for non-standard take-off or landing (defined as one not practised as a Standard Operating Procedure for that Air System), if its edge is at least 230m from the crowd at all points.

c. **In Flight.** The normal minimum separation between the crowd line and Air System displaying in flight, including Rotary Wing displays that involve aerobatics, should be 230m. However, the following additional minima apply for specific circumstances:

1. **High Speed Air System.** Where the displaying Air System is at a speed in excess of 300 KIAS, and has a velocity vector towards a spectator area, the minimum separation should be increased to 450m.

2. **Low Energy Air System.** For low energy Air Systems, as defined in para ►15,◄ the minimum separation should be 150m.

3. **Rotary Wing.** For normal take-off and landing, and during transitional manoeuvres, the minimum separation should be 65m. For other stages of non-aerobatic flight, or at any time when an underslung load is carried, the minimum separation should be 100m.

4. **Vertical and Short Take Off and Landing (VSTOL) Air Systems (Incl V-22).** For vertical take-off and landing, and during non-wing borne flight at low speed, the minimum separation should be 150m. By the time conventional wing borne flight is achieved, the Air System should be at the normal minimum separation of 230m.

5. **Balloons.** At displays where balloons operate, FDD should follow the guidance in CAP 403.

6. **Airships.** Airships are operated as lighter-than-air Air Systems, and as such should be subject to regulations applying to Fixed Wing Air Systems.


8. **Class (1)(a) Remotely Piloted Air Systems (RPAS)**. Class (1)(a) RPAS should not be operated in a manner that presents undue risk or hazard to any person, vessel, structure, vehicle or infrastructure.

d. **Dual Spectator Areas.** In the case of ►Flying Displays◄ at airfields/locations where spectator areas are on both sides of the display axis, the minimum distances between the display line/runway and the spectator areas, specified above, should apply on both sides of the display line/runway ►◄.

86. **Minimum Heights at a Flying Display.** ADH and AM(MF) should specify minimum heights for Display Flying, Role Demonstrations and Flypast (Mil) flown by their aircrew, dependent upon the Air System type, aircrew experience and location of aircrew experience and location of aircraft operation.

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20 Refer to RA 1600(1) and RA 1600(2).
the event. However, they should not be less than the MSD\textsuperscript{21} specified in the tables below:

### Table 5. Minimum Heights Part 1

<table>
<thead>
<tr>
<th>MSD (Feet) as part of PDA Display Sequence at a Flying Display</th>
<th>Fixed Wing</th>
<th>Rotary Wing</th>
<th>Fixed Wing Formation</th>
<th>Rotary Wing Formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level Flight ≤89° Angle of Bank (AOB)</td>
<td>100</td>
<td>100</td>
<td>300</td>
<td>100</td>
</tr>
<tr>
<td>Aerobatic Manoeuvres, Inverted Flight and Link Manoeuvres</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Any other Manoeuvres</td>
<td>300</td>
<td>100</td>
<td>300</td>
<td>100</td>
</tr>
</tbody>
</table>

a. **Post Level Flight ≤89° AOB Manoeuvre.** Having completed a Level Flight pass below 300’ MSD, up to 60° AOB should be used to achieve the appropriate MSD.

b. **Link Manoeuvres\textsuperscript{22}**. Minima as per Table 5 unless positioning for a non-aerobatic profile or landing. ►Participants◄ should be certain of capturing the minimum height (min 300’) during the recovery from an aerobatic manoeuvre before continuing descent to level flight minima as per Table 5.

c. **Rotary Wing and VSTOL Air Systems.** Rotary Wing and VSTOL Air Systems may operate below the MSD in Table 5 during hovering and transition manoeuvres.

d. **Manoeuvre After Take-Off.** Once safely airborne and not below 50’ MSD throughout the manoeuvre, the ►Participant◄ may commence a turn away from the crowd line to capture the appropriate display line. AOB up to 60° should be used and a positive climbing vector should be maintained throughout the manoeuvre. The ►Participant◄ should achieve the following criteria:

1. **On crossing the appropriate display line (if runway is inside it).** Be at or above 100’ MSD.

2. **By 180° displaced from the take-off direction.** Be at or above 300’ MSD.

### Table 6. Minimum Heights Part 2

<table>
<thead>
<tr>
<th>MSD (Feet) when NOT part of a PDA Display Sequence at a Flying Display</th>
<th>Fixed Wing</th>
<th>Rotary Wing</th>
<th>Fixed Wing Formation</th>
<th>Rotary Wing Formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level Flight ≤20° AOB</td>
<td>100</td>
<td>50</td>
<td>500</td>
<td>250</td>
</tr>
<tr>
<td>Any other manoeuvres in accordance with all other extant Regulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

87. **Minimum Heights at any other event.** ADH and AM(MF) should specify minimum heights for Role Demonstrations and Flypasts (Mil) not conducted as part of a Flying Display. These heights should be dependent upon the Air System type,

\textsuperscript{21} Where the Flying Display is outside the UK, the most restrictive of this Regulation and any applicable local/national orders must be complied with.

\textsuperscript{22} A link manoeuvre is where one aerobatic manoeuvre is followed by another, or is linked by non-aerobatic manoeuvres.
Acceptable Means of Compliance 2335(3)

aircrew experience and location of event. However, they should not be less than the MSD specified in the table below:

Table 7. Minimum Heights Part 3

<table>
<thead>
<tr>
<th>MSD (Feet) at any other Event</th>
<th>Fixed Wing</th>
<th>Rotary Wing</th>
<th>Fixed Wing Formation</th>
<th>Rotary Wing Formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level Flight ≤20° AOB</td>
<td>250</td>
<td>100</td>
<td>500</td>
<td>250</td>
</tr>
</tbody>
</table>

Any other manoeuvres in accordance with all other extant Regulation

88. Congested Areas. Role Demonstrations or Flypasts (Mil) below 2000’ MSD over Congested Areas (as detailed in the UKMLFH) should be conducted in accordance with RA 2330 and the UKMLFH, including seeking permission from ACAS [ACAS-PSO@mod.gov.uk] when required.

89. ADH or AM(MF) Approval for Congested Areas. Display Flying, Role Demonstrations and Flypasts (Mil) over Congested Areas should be approved by the Air System ADH or AM(MF) in advance.

90. Weather Minima. The ADH or AM(MF) should stipulate the minimum weather conditions for Display Flying, Role Demonstration and Flypasts (Mil) by Air Systems in their AOR.

a. The following table should be the absolute minimum weather conditions for Participants that hold a valid PDA or DA when operating at a Flying Display (or during PDA work-up law RA 2335(2)); the Visual Meteorological Conditions (VMC) minima in RA 230723 apply at all other times:

Table 8. Weather Minima.

<table>
<thead>
<tr>
<th>Type of aircraft</th>
<th>Type of display</th>
<th>Weather minima</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSTOL24, Rotary Wing and other aircraft with a stalling speed below 50 KIAS</td>
<td>Flypasts, and Role Demonstrations</td>
<td>Solo aircraft 500 feet 1500 metres</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Formations 500 feet 3000 metres</td>
</tr>
<tr>
<td></td>
<td>Aerobatic Display Flying</td>
<td>Solo aircraft 800 feet 3000 metres</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Formations 1000 feet 5 km</td>
</tr>
<tr>
<td>All other Air Systems</td>
<td>Flypasts, non-aerobatic Display Flying and ‘flat’ Aerobatic Display Flying25 and Role Demonstrations</td>
<td>Solo aircraft 500 feet 5 km</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Formations 1000 feet 5 km</td>
</tr>
<tr>
<td></td>
<td>Aerobatic Display Flying</td>
<td>Solo aircraft 1000 feet 5 km</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Piston Formations 1000 feet 5 km</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jet / turboprop Formations 1500 feet 5 km</td>
</tr>
</tbody>
</table>

Notes:

(i) A ‘flat aerobatic display’ should be formally approved as part of the Participant’s PDA; use of the lower 1000 ft cloud base minima should

23 Refer to RA2307 - Rules of the Air.

24 This only applies to VSTOL aircraft operating in VSTOL mode.
be subject to a Risk Assessment which is to be approved by the ADH or AM(MF) and accepted by the MAA. ◄

(ii) Subject to FDD approval, Air Systems unable to display because of low cloud base may fly an instrument approach to land, touch-and-go or low approach, limited basic manoeuvres and circuits. 200’ minimum vertical separation from the prevailing cloud base is to be maintained and the visibility is not to be less than ►5 km. ◄

91. **Performance Limitations.**
   a. **Speed.** An absolute true limit of Mach 0.90 or 600 KTAS (whichever is reached first) should not be exceeded in flight.
   b. **Multi-Engine Fixed Wing Air Systems.** Multi-Engine Fixed Wing Air Systems should not fly below the speed at which it is still possible to climb away, without change of configuration, if any one engine fails.

92. **Other Restrictions When Conducting Display Flying, Role Demonstrations or Flypasts (Mil):**
   a. **Control of Engines.** Engines should not be deliberately shut down or feathered in flight; symmetrical thrust should be maintained at all times. In the event of an engine failure or unintended shutdown, the Display Sequence should be terminated.
   b. **Armament.** Live weapons should not be carried at Flying Displays and all weapons circuit-breakers and switches should be in the ‘safe’ condition (except for flares and pyrotechnics when approved under the conditions at sub-para e).
   c. **Rotary Wing and VSTOL Air Systems.** Rotary Wing and VSTOL Air Systems should not be flown in such proximity to buildings or Air Systems on the ground as to cause a possible hazard from downwash. If conducting underslung load activity, due consideration should be given to the load becoming unstable or detached.
   d. **Parachute Demonstration/Display.** During the whole period scheduled for parachuting, all flying activity within the descent airspace and Drop Zone, except that which is necessary for dispatching parachutists, should cease. ►The ◄ engines of Fixed Wing Air Systems ◄ should be shut down ◄ and Rotary Wing aircraft rotors should not be turning ◄ until the last parachutist has landed.
   e. **Use of Flares and Pyrotechnics.** The use of flares and pyrotechnics from the air during a Flying Display should be subject to a specific Risk Assessment and final approval by the ADH or AM(MF) of the participating Air System, the HoE, the EO and the FDD. Flares, signal cartridges and Verey pistol smoke cartridges, should only be fired from such a height and position that prevents any remnants of the device landing among spectators, near taxiing or static Air Systems, supporting personnel or ground equipment.

**Separation Distances, Minima and Restrictions**

93. **CAA Acceptance of PDA.** Civilian FDD and EO for UK Flying Displays may accept the PDA of military registered Air Systems as proof that they are competent and current in all required facets of Display Flying, as detailed in CAP 403.