RA 2135 - Aircrew Medical Requirements

Rationale

Operating Air Systems is both physically and mentally demanding. Without the correct level of fitness and aviation medicine training Aircrew will place themselves, the Air System and the public at increased risk. This Regulatory Article (RA) directs Aircrew to maintain the required level of fitness-to-fly and attend appropriate aviation medicine training.

Contents

2135(1): Aircrew Medical Employment Standard
2135(2): Fitness-to-Fly
2135(3): Pilot Operations - Upper Age Limit
2135(4): Flying After an Accident or In-Flight Medical Incident
2135(5): Aviation Medicine Training
2135(6): High G Training
2135(7): Temporary Medical Restrictions to Flying Duties

Regulation 2135(1)

Aircrew Medical Employment Standard

2135(1) Aviation Duty Holders (ADH) and Accountable Managers (Military Flying) (AM(MF)) shall publish orders that detail the Joint Medical Employment Standard (JMES)\(^1\) for all Aircrew and Supernumerary Crew\(^2\) of military registered Air Systems within their Area of Responsibility (AoR).

Acceptable Means of Compliance 2135(1)

Aircrew Medical Employment Standard

1. Aircrew should:
   a. Hold the required JMES detailed in ADH or AM(MF) orders;
   b. Complete an Initial Medical Examination (IME) in accordance with (iaw) Annex A;
   c. Conduct a Periodic Medical Examination (PME) iaw Annex A;
   d. Remain in date for PME if in a flying appointment;
   e. Comply with all medical limitations they have been awarded.
   f. Conduct electrocardiography (ECG) and enhanced cardiac screening as detailed in Air Publication (AP) 1269A\(^3\) Leaflet 4-02.

Guidance Material 2135(1)

Aircrew Medical Employment Standard

2. If ADH or AM(MF) have any doubt over the suitability of the required JMES for Aircrew within their AoR they may consult with their relevant medical authority:
   a. Consultant Advisor Aviation Medicine (CA Av Med) for Royal Navy/Army;
   b. SO1 Aviation Medicine (SO1 Avn Med) for Joint Helicopter Command;
   c. Command Flight Medical Officer (CFMO)\(^4\) for Royal Air Force (RAF) and Contractor Flying Approved Organization Scheme (CFAOS) organizations.

3. Aircrew in non-flying appointments can defer their PME iaw AP 1269A\(^3\) Leaflet 4-02.

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\(^1\) Minimum JMES for Remotely Piloted Air Systems (RPAS) Aircrew have already been determined and are detailed at Annex A.
\(^2\) Refer to RA 2340 - Supernumerary Crew and Passengers.
\(^3\) Refer to AP 1269A - Manual of Medical Fitness.
\(^4\) CFMO(RAF), RAF CAM, RAF Henlow, Bedfordshire, SG16 6DN. AIR38Gp-CAM-CFMO@mod.gov.uk
4. Aircrew medical fitness will be assessed at PME. The JMES achieved at PME will be entered in the individual’s flying logbook or records, signed by a Military Aviation Medical Examiner (MAME) and is valid until the last day of the month in which the next PME is due.

5. Defence Contractor Flying Organizations (DCFO) will have a designated MAME, details of whom are available from the CFMO(RAF).

6. DCFO may use dedicated Civil Aviation Medical Examiners (AME) in place of a MAME, where those Civil AME have been endorsed to do so by Deputy Assistant Chief of Staff Aviation Medicine, RAF Centre of Aviation Medicine (CAM).

7. Civilian Aircrew may seek advice from the CFMO(RAF) with any concerns regarding access to a MAME.

8. A Statement of Health (SoH) is for MAME use only and is designed to provide information to enable a full assessment of Aircrew fitness for their role. Full details of a SoH can be found in AP 1269A Leaflet 4-02 Annex C.

9. A Medical Attendant’s Report (MAR) is for MAME use only and is designed to provide information to enable a full assessment of Aircrew fitness for their role. Full details of a MAR can be found in AP 1269A Leaflet 4-02 Annex D.

10. Aircrew required to provide a MAR must, iaw AP 1269A ensure it is completed by their civilian medical practitioner, be available to the certifying MAME and be dated within 2 months of the PME due date.

11. The definitive medical guidelines and instructions for assessment of medical fitness standards are published in AP 1269A and may be augmented in single-Service orders and other documents.

## Fitness-to-Fly

### Regulation

**Regulation 2135(2)** Aircrew and Supernumerary Crew uncertain of their fitness-to-fly shall report to a MAME or a medical practitioner before flying.

### Acceptable Means of Compliance

**Acceptable Means of Compliance 2135(2)**

12. Supervisors and Authorizing Officers who have reason to doubt the medical fitness, including anthropometric fitness, of any Aircrew or Supernumerary Crew should seek the advice of a MAME.

13. All Aircrew and Supernumerary Crew should:

   a. Seek medical advice if they have any reason to doubt their fitness-to-fly, even for a relatively minor illness, since they have a duty to ensure their own safety and the safety of any crew or passengers.

   b. Seek medical advice if they have any reason to doubt their anthropometric fitness for the Air Systems they are required to operate.

   c. Contact a MAME prior to returning to flying duties if any advice has been sought from a medical practitioner who has no aviation medicine training.

   d. Report any period of non-fitness-to-fly to their command chain or, for DCFO, the Flight Operations post-holder.

14. MOs should ensure that the command chain is informed of any change in medical fitness affecting the flying status of their Aircrew or Supernumerary Crew.

15. Flight Operations post-holders should ensure that a mechanism exists to notify them of any change in medical fitness affecting the flying status of their Aircrew or Supernumerary Crew.

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* A MAME is a Medical Officer (MO) authorized by the relevant Service medical authority.
* Via CFMO(RAF).
**Fitness-to-Fly**

16. Aircrew and Supernumerary Crew may declare, without medical advice, that they are not fit-to-fly.

17. Strenuous or prolonged physical exercise may adversely affect individual ability to withstand the stress of flight, including G tolerance.

**Pilot Operations - Upper Age Limit**

2135(3) Pilots **shall not** operate an Air System once they attain the age of 65 unless the Air System is fitted with dual controls and is operated with a second pilot who has not yet attained the age of 65. Furthermore, the second pilot **shall** hold the appropriate qualification and JMES to act as pilot in command.

**Acceptable Means of Compliance 2135(3)**

18. ADH and AM(MF) **should** stipulate in orders the minimum JMES, qualifications and flying currency to be held by the second pilot. The second pilot **should** be capable of undertaking all the manoeuvres, roles or exercises that the sortie has been authorized for.

**Guidance Material 2135(3)**


**Pilot Operations - Upper Age Limit**

21. ADH and AM(MF) **should** consider the guidance in AP 1269A Leaflet 4-02 Annex I for the management of Aircrew and Supernumerary Crew following an aircraft accident or incident.

**Flying After an Accident or In-Flight Medical Incident**

2135(4) After being involved in a flying accident or in-flight medical incident, Aircrew and Supernumerary Crew **shall not** operate an Air System without appropriate medical approval.

**Acceptable Means of Compliance 2135(4)**

20. A MAME **should** issue medical approval prior to any return to flying duties for Aircrew or Supernumerary Crew involved in a flying accident or in-flight medical incident.

21. ADH and AM(MF) **should** consider the guidance in AP 1269A Leaflet 4-02 Annex I for the management of Aircrew and Supernumerary Crew following an aircraft accident or incident.

**Guidance Material 2135(4)**

22. AP 1269 Leaflet 12-06 provides detailed information on handling specific types of in-flight medical incidents.

**Aviation Medicine Training**

2135(5) ADH and AM(MF) **shall** publish orders that detail the aviation medicine training requirements within their AoR.

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7 Refer to AP 1269 - Medical Management and Administration.
8 Including inter alia: hypoxia; contamination of oxygen supply; fumes in the cockpit; spatial disorientation; G-Induced Loss of Consciousness (G-LOC).
Aviation Medicine Training

23. ADH and AM(MF) should determine appropriate initial and refresher aviation medicine training requirements in conjunction with RAF CAM.9

24. As a minimum, ADH and AM(MF) orders should detail:
   
   a. The initial and refresher aviation medicine training requirements within their AoR.
   
   b. That all Aircrew complete initial aviation medicine training prior to basic flying training.
   
   c. That all Aircrew engaged on flying duties receive refresher aviation medicine training at intervals not exceeding 5 years.
   
   d. The procedures to be followed when a dispensation or extension to aviation medicine training requirements is deemed necessary.

   (1) The relevant medical authority should be consulted prior to any dispensation or extension to aviation medicine training requirements.

Guidance Material

2135(5)

Aviation Medicine Training

25. Further guidance on aviation medicine training can be found in AAMedP-1.210 which contains appropriate syllabi for initial and refresher training by aircraft type.

High G Training

2135(6) ADH and AM(MF) shall publish orders that detail the High G training requirements within their AoR.

Acceptable Means of Compliance

2135(6)

High G Training

26. ADH and AM(MF) should determine initial and refresher High G training requirements in conjunction with RAF CAM.9

27. High G training should be conducted using a centrifuge appropriate to the aircraft being flown.

   a. After centrifuge exposure Aircrew should not return to flying duties until 6 hours after exposure and free of all residual symptoms11.

28. As a minimum, ADH and AM(MF) orders should detail:

   a. That all Aircrew whose employment exposes them to High G environments complete High G training.

   b. The initial and refresher High G training requirements within their AoR.

   c. That refresher High G training is required following a 3-year absence from the High G environment and before returning to high performance flying.

   d. That all Aircrew engaged on flying duties of high performance aircraft receive refresher High G training at intervals not exceeding 5 years.

   e. The procedures to be followed for individuals who do not complete High G training to the required standard.

   f. The procedures to be followed when a dispensation or extension to High G training requirements is deemed necessary.

   (1) RAF CAM should be consulted prior to any dispensation or extension to High G training requirements.

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9 OC AMW Training Section, RAF CAM, RAF Henlow, Bedfordshire, SG16 6DN. AIR38Gp-CAM-AMW-OCAMWTS@mod.gov.uk.

10 Refer to AAMedP-1.2 - Aeromedical Training of Flight Personnel. AAMedP-1.2 is available from the NATO Standardization Office (NSO) public website.

11 If in doubt, refer to Regulation 2135(2) - Fitness-To-Fly.
High G Training

29. Centrifuge exposure may adversely affect Aircrew due to the physical strain of High G and sensory disturbance induced by centrifuge manoeuvres.

30. Further guidance on High G training can be found in AAMedP-1.1312.

Temporary Medical Restrictions to Flying Duties

2135(7) Aircrew and Supernumerary Crew shall comply with any restrictions placed upon them following exposure to conditions affecting their fitness-to-fly.

Temporary Medical Restrictions to Flying Duties

31. Aircrew and Supernumerary Crew should not:
   a. Take any prescription medicine, drugs, tablets or remedies before flying unless prescribed or approved by a MAME.
   b. Use any over-the-counter medicines, drugs, tablets or remedies within 24 hours of reporting for flying duties unless approved by a MAME, as the effect on an individual’s fitness-to-fly may not be immediately apparent.
   c. Use any dietary supplements, homeopathic remedies or alternative medicines unless approved by a MAME.
   d. Fly until 48 hours have elapsed following a general, spinal or epidural anaesthetic, or for 12 hours after a local or regional (dental) anaesthetic, unless the period is extended in consultation with a MAME.
   e. Fly until 12 hours have elapsed following acupuncture treatment.
   f. Fly until 36 hours have elapsed after donating blood.
   g. Fly until 24 hours have elapsed following the application of mydriatic eye drops or agents.

32. Aircrew and Supernumerary Crew should ascertain from a MAME the duration of any flying restrictions following inoculations or vaccinations as most inoculations and vaccinations will restrict flying for at least 12 hours.

33. Aircrew and Supernumerary Crew should consult a MAME prior to undergoing treatment for any of the following:
   a. Elective surgery;
   b. Corneal refractive surgery for visual correction;
   c. Routine immunisation;
   d. Hypnotherapy;
   e. Acupuncture;
   f. Complementary and alternative medicine.

34. Personnel should not fly or undergo low-pressure chamber experience:
   a. Within 12 hours of swimming/diving using compressed-air breathing apparatus (aqualung equipment), or within 24 hours if a depth of 10m has been exceeded (an exception can be made if 100% oxygen-only has been breathed throughout the dive after which immediate flying is permissible) or;
   b. Within 12 hours of experiencing hyperbaric pressures13.

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12 Refer to AAMedP-1.13 - Minimum Requirements for Physiological Training of Aircrew in High “G” Environment. AAMedP-1.13 is available from the NSO public website.
13 Such as cabin pressure testing. This does not apply to patients or attendants undertaking long treatment for decompression illness, refer to BRd 2806(4) - Therapeutic and Medical Management of Diving.
### Acceptable Means of Compliance 2135(7)

35. Personnel **should not** fly or undergo low-pressure chamber experience within 24 hours of Short Term Air Supply System training, except when all the following apply:
   
   a. The time of immersion is less than 20 minutes.
   b. The depth of immersion has not exceeded 3 metres.
   c. There is an interval of 4 hours between the end of training and commencing flying.
   d. The cabin pressure altitude will not be above 8000 ft.

36. Personnel **should not** fly at a cabin altitude above FL100 within 12 hours of exposure in a low-pressure chamber.

37. Following exposure to any chemical warfare training agents, Aircrew and Supernumerary Crew **should not**:
   
   a. Return to flying duties until all physical and psychological effects produced by the agent have cleared.
   b. Return to flying duties for a minimum period of 12 hours following exposure to CS gas.
   c. Fly in any clothing or equipment that remains contaminated by the training.

38. Following exposure to any chemical warfare training agent, Passengers **should not** fly in any clothing or equipment that remains contaminated by the training.

39. Aircrew and Supernumerary Crew who have engaged in boxing (including sparring, but not including non-contact training) **should not** fly for 48 hours after a bout. Furthermore, they **should** be examined by a MAME before resuming flying duties.

### Guidance Material 2135(7)

**Temporary Medical Restrictions to Flying Duties**

40. Some techniques used by complementary or alternative medical practitioners are not currently subject to the same controls as conventional medicine and may not be evidence based. Complementary or alternative medicine cannot be guaranteed to be free from detrimental side-effects.
### ANNEX A

#### Table 1. Medical Examiners Required for the Award of IME

<table>
<thead>
<tr>
<th>Aircrew of Manned Aircraft</th>
<th>Aircrew of RPAS (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IME</strong></td>
<td>Recruitment and Selection Department of Occupational Medicine (R&amp;S DOM) (2)</td>
</tr>
<tr>
<td><strong>Class</strong></td>
<td><strong>Class</strong></td>
</tr>
<tr>
<td><strong>II</strong></td>
<td><strong>III</strong></td>
</tr>
</tbody>
</table>

#### Table 2. Medical Examiners Required for the Award of PME for Aircrew of Manned Aircraft

<table>
<thead>
<tr>
<th>PME</th>
<th>Regular (3) Military Aircrew: UK; NATO (4); Australia (Aus); New Zealand (NZ)</th>
<th>Civilian or Other Military Aircrew</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ejection Seat</td>
<td>MAME (supported by a MAR and a SoH)</td>
</tr>
<tr>
<td></td>
<td>Non-Ejection Seat</td>
<td>MAME (supported by a MAR and a SoH) or EASA Class 1 (supported by a MAR and a SoH, presented to a MAME)</td>
</tr>
</tbody>
</table>

#### Table 3. Minimum JMES and Medical Examiners Required for the Award of PME for RPAS Aircrew

<table>
<thead>
<tr>
<th>RPAS Class</th>
<th>JMES</th>
<th>PME</th>
<th>Medical Employment Standard (6)</th>
<th>PME</th>
</tr>
</thead>
<tbody>
<tr>
<td>I(a), I(b), I(b) Mil</td>
<td>A-4</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>I(c)</td>
<td>A-4</td>
<td>5-yearly level 3 medical conducted by a MAME</td>
<td>Meet the medical standards required for DVLA Gp1 Licence (7)(8)</td>
<td>5-yearly confirmation that the individual continues to meet the medical standards for DVLA Gp1 Licence (8)(9)</td>
</tr>
<tr>
<td>I(d)</td>
<td>A-4</td>
<td>5-yearly level 4 medical conducted by a MAME</td>
<td>Meet the medical standards required for DVLA Gp2 Licence (7)(8)</td>
<td>5-yearly confirmation that the individual continues to meet the medical standards for DVLA Gp2 Licence (8)(9)</td>
</tr>
<tr>
<td>II</td>
<td>A-4</td>
<td>Annual level 4 medical conducted by a MAME</td>
<td>EASA Class 2 or European Class 3 (10)</td>
<td>Annual presentation of civilian medical licence (supported by MAR and SoH) to a MAME (11)</td>
</tr>
<tr>
<td>III</td>
<td>A-3 (11)</td>
<td>EASA Class 1 or European Class 3 (10)</td>
<td>EASA Class 1 or European Class 3 (10)</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

1. IME not required for Class I(a), I(b), I(b) Mil. For other Class I, individuals should present DVLA Gp1 (for Class I(c)) or DVLA Gp2 (for Class I(d)) to relevant ADH / AM(MF) (see also note 7).
2. R&S DOM, Adastral Hall, PO Box 1000, RAFC Cranwell, Sleaford, Lincs NG34 8GZ. For the RN: R&S DOM undertake the IME (under contract), the initial flying medical category is awarded by the Head Aviation Medicine (RN) after reviewing the IME conducted by R&S DOM.
3. As defined by section 374 of the Armed Forces Act 2006; in the context of this RA this also includes Full Time Reserve Service Aircrew.
4. Refer to STANAG 3526 - Interchangeability of NATO Aircrew Medical Categories. STANAG 3526 is available from the NSO public website.
5. When NATO, Aus or NZ Aircrew choose to have PME performed by their home nation, they should present certification of medical fitness to a UK MAME for update of their UK medical records.
6. Alternatively, civilian Aircrew are deemed to meet the minimum requirements for a class of RPAS if they have the military Aircrew JMES (from a MAME led PME) for that class of RPAS.
7. Where the individual does not hold the DVLA licence they should obtain a letter from their medical practitioner stating the individual would meet the required medical standards for that licence.
8. Any individual who has, or develops, a notifiable medical condition (as detailed by the DVLA\textsuperscript{14}) that means that they would no longer meet the medical standards required for the relevant DVLA licence should seek advice from a MAME prior to conducting flying duties.

9. ADH and AM(MF) should detail in orders how the individual is to confirm they continue to meet the medical standards required for the relevant DVLA licence.

10. Refer to EASA Medical Requirements for Air Traffic Controllers.

11. If the individual does not maintain a manned aircraft certification, at IME or annual PME the MedLim 2003 - ‘Fit RPAS flying duties only’ should be awarded.

\textsuperscript{14} At the time of publication, notifiable medical conditions include: diabetes or taking insulin; syncope (fainting); heart conditions (including atrial fibrillation and pacemakers); sleep apnoea; epilepsy; strokes; glaucoma. Refer to the DVLA website for the list of current notifiable medical conditions.