

CAP 1724

Flying Display Pilot Authorisation and Evaluation: Requirements and Guidance

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Contents

Contents.....	3
Revision History	8
Feedback.....	10
Terminology and Definitions	11
General Information	14
Introduction.....	14
Safety Management.....	15
Reporting.....	15
Chapter 1.....	17
General Rules and Limitations.....	17
Legal requirements	17
Long Term Permissions (LTP) for display practice.....	18
Airborne Flying Display Directors (AFDD)	18
Minimum rest	18
Close Formation (f).....	19
Formation briefings and walk throughs	20
Tailchase (t).....	21
Displaying multi-engine aircraft.....	22
Flight exceeding 250 KIAS.....	22
Use of Transponder.....	22
Crowd separation distances.....	23
Minimum heights during displays.....	23
Arrivals and departures	25
Pre-display notification to FDDs	25
Responsibilities to military organisers.....	26
STOP, TERMINATE and standard call procedures	26
The recording of Flying Display related activities	27
Chapter 2.....	28
The Display Authorisation Evaluator (DAE).....	28
Appointment as a DAE.....	28
Reappointment as a DAE	29
Roles and Responsibilities	30
DAE aerobatic, formation and tailchase approvals	30
The Evaluation Oversight Officer (EOO)	30
Review and Enforcement.....	31

Chapter 3.....	32
DAE standardisation	32
General	32
Standardisation	32
Chapter 4.....	33
Mentoring and initial assessment.....	33
General	33
Pre-evaluation mentoring	33
The initial assessment	33
Suitability	35
Failure to achieve the required standard	36
Chapter 5.....	37
Display Authorisation evaluation process.....	37
Display Authorisation Evaluation process.....	37
Documents check.....	37
Ground assessment and discussion	38
Pre-flight inspection.....	42
Flight demonstrations	42
Non-aerobatic flying displays.....	43
Spin training and departure awareness	43
Recommendation	44
Record keeping.....	44
Chapter 6.....	45
Display Authorisation - Aerobatic (a)	45
Fixed wing skill levels	45
Standard level (aS) aerobatics	45
Intermediate level (aI) aerobatics	46
Advanced level (aA) aerobatics.....	46
Unlimited level (aU) aerobatics	46
Fixed wing aerobatic skill level tables.....	47
Rotary wing skill levels	49
Standard level (aRS) evaluation criteria	49
Advanced level (aRA) evaluation criteria	49
Chapter 7.....	50
Display Authorisation - Formation (f)	50

Formation skill levels	50
Formation category evaluations	51
Close formation flying – up to 4 Aircraft	52
Close formation flying – unlimited aircraft.....	53
Close formation leading – up to 4 aircraft.....	54
Close formation leading – unlimited aircraft.....	55
 Chapter 8.....	 56
Display Authorisation - Tailchase (t)	56
Tailchase lead	57
Aerobatic tailchases.....	57
 Chapter 9.....	 58
Display Authorisation – Groups and Categories.....	58
Aircraft groups and categories	58
 Chapter 10.....	 60
The Display Authorisation - initial application and issue	60
DA initial application	60
Issue of the Display Authorisation.....	61
Tyro DA (TDA) privileges	62
 Chapter 11.....	 63
Display Authorisations - Validity, currency, renewals, upgrades, exemptions and enforcement	63
General	63
Behavioural and Attitudinal Fitness Assessment	63
Validity of a DA	63
Currency.....	64
Renewal.....	66
Renewal requirements	67
DA Renewal cycle.....	68
DA Upgrades.....	69
DA Exemptions	70
Enforcement.....	71
The suspension of a DA – what happens next?	72
 Chapter 12.....	 73

Safety culture, reporting and continuous mentoring.....	73
General	73
Generating a mentor – mentee relationship.....	73
Promotion of a positive safety culture	73
Safety reporting	74
What to do if safety is being breached	75
 Chapter 13.....	 76
Human Factors (HF) in Flying Displays.....	76
Background.....	76
Human Factors and the DA Evaluation	76
Flying Display HF course.....	78
HF in Flying Displays	79
 Appendix A	 80
Guidance for the completion of forms	80
General	80
Responsibilities	80
Forms and reporting	80
DA issue – Initial / renewal / upgrade	80
Charges	81
 Appendix B	 82
Timescales	82
Forms	82
Display Authorisation Evaluators	82
Display Pilots	82
 Appendix C	 83
DAE Evaluation Checklist.....	83
 Appendix D	 90
Insurance	90
 Appendix E	 91
The CAA, DAE Agreement.....	91
 Appendix F.....	 93

FAiR System	93
Appendix G	96
Useful Links	96

Revision History

Edition 1**February 2019**

Initial issue.

Edition 2**January 2020**

Amendments to this Edition of CAP 1724 are based on a review of the feedback received from the Flying Display community following publication of Edition 1.

Revised text in red underline.

There have been significant changes to the layout to make it easier to understand the categorisation of DAs and aerobatic, formation and tailchase skill levels. The General Rules and Limitations have been amended and moved from an Appendix to the main body of the CAP to make it clear that they are mandatory. There have been changes to the groups and categories of aircraft for DAs. Amendment of aerobatic skill levels, including the addition of an entry-level Limited Aerobatic skill level.

Edition 3**March 2021**

This edition incorporates feedback from the Flying Display community, mostly focussed on providing further clarity where required, and minor editorial changes. Amendments include clarification of DA requirements for a large formations with multiple elements, considerations for displaying multi engine aircraft, clarification of the manoeuvres to be declared on form SRG 1327, further guidance concerning the documents check carried out as part of a DA evaluation, display pilot considerations concerning the management of G-forces, considerations for variations to a display to be covered as part of a DA evaluation, clarification of the validity of initial issue DAs, the introduction of a DA Exemption process, further recommendations for Human Factors content of DA evaluations and minor amendments to the Appendix C checklist.

Edition 3, amendment 1**May 2021**

This amendment reflects changes to formation requirements in paragraph 1.12 and 1.13 only. No other changes introduced.

Edition 4**March 2022**

A review of the content of the CAP has been carried out and duplicated / unrequired content deleted. Other amendments include: a reminder to pilots concerning the mandatory use of transponders; a requirement that applicants for initial issue DA submit a C.V. to CAA GAU; DAEs now offered greater flexibility in the content of DA evaluations; time period for the retention of records added; the introduction of skill levels for rotary wing aircraft; the splitting of group H & G into individual groups; clarification of the DA requirements for pilots of sailplanes with engines (TMGs, SLSs, SLMGs, etc) and the removal of the requirement for newly qualified display pilots to attend a display symposium before being eligible for TDA status.

Edition 5**March 2023**

Amendments include: a change of CAP name; the use of the term “non-aerobatic” and “non-aerobatic Flying Display” in place of “flypast” where appropriate; category H ‘Multi engine jet aircraft’ split into H1 ‘Straight wing multi engine jet aircraft’ and H2 ‘Swept wing multi engine jet aircraft’; re-write of Chapter 6 Aerobatic Skill Levels and additional background / details of the Flying Display Human Factors course.

Edition 6**February 2024**

Amendments to this edition consist mostly of minor editorial changes and further clarification. Other amendments include: clarification of DA requirements for multi crew aircraft; briefing requirements for flights of aircraft following in loose trail; the inclusion of electric powered aircraft in DA categories; the removal of the maximum number of displays permitted under the TDA scheme; changes to the requirements for the submission of form SRG1303B; a requirement for DAEs to record details of any DA renewal evaluation ‘retakes’; the provision for DAEs to sign a DA Temporary Validation where an upgrade has been undertaken, and a revised Appendix C Evaluation Checklist.

Edition 7**March 2025**

Amendments include: the re-formatting of certain tables to comply with accessibility requirements, clarification that all references to 'pilot' in this CAP apply to 'pilot-in-command', introduction of the definition of 'stable flight', clarification of the conditions associated with the use of a CAA Long Term Permission for display practice, clarification that display pilots are to notify FDDs of the minimum lateral separation distance they intend to use for display, information / guidance for the introduction / use of the new initial DA pre-application notification form, the merging of turboprop and piston engine aircraft DA categories, changes to symposium attendance requirements, revised minimum aerobatic currency requirements for advanced and unlimited skill levels, amendments to the Appendix C checklist, DAE third party insurance coverage clarification and the creation of a new Appendix containing useful links as previously included throughout the CAP.

Changes and amendments

Changes and amendments in this CAP are underlined in red.

Feedback

The CAA seeks to continually improve its regulation and guidance and feedback from practitioners is essential to success. Any comments on or suggestions about CAP 1724 should be sent to ga@caa.co.uk with subject line 'CAP 1724 feedback'.

Terminology and Definitions

Throughout this CAP the following terms and definitions are used:

Term	Abbreviation	Definition
Aerobatic Manoeuvre		The definition of an aerobatic manoeuvre is defined in Schedule 1 of the Air Navigation Order (ANO).
Airborne Flying Display Director	AFDD	A Pilot holding a UK Display Authorisation (DA) participating in their own single item Flying Display who is responsible to the CAA for the safe conduct of that Flying Display ¹ .
Air Navigation Order	ANO	Air Navigation Order 2016 (as amended).
A-LOC	A-LOC	Almost loss of consciousness (or Acceleration-induced near-loss of consciousness)
Applicant		A person seeking the issue, renewal or upgrade of a CAA Permission, Exemption, approval or authorisation.
Confidential Human Factors Incident Reporting Programme	CHIRP	The UK Confidential Human Factors Incident Report Programme for Aviation.
Close Formation		Close Formation is defined as when an aircraft is flying in close proximity (usually within 50 metres) to another aircraft in such a manner as to require the following aircraft to take all external visual references solely from the lead aircraft.
Crowd Line		The line delineating the closest edge of any area, including Car Parks, accessible to Spectators with respect to the Display Area / line.
Display Area		The Display Area is the ground area footprint of the airspace within which displaying aircraft may be manoeuvred at a height below that imposed by SERA.5005(f)(1), SERA.5005(f)(2), subject to the limits of the flying display permission, any further restrictions imposed by the FDD, and the pilot's DA / Military Public Display Authority (PDA).
Display Authorisation	DA	A national document detailing the groups and categories of aircraft in which a pilot is authorised to display, together with any limitations and other specific endorsements.
Display Authorisation Evaluator	DAE	A person authorised by the CAA to conduct evaluations for the award of a Display Authorisation.
Display Item		A single, formation or group of aircraft, flying as one single display 'act' throughout.

¹ The EO and the AFDD might in some cases be the same person.

Term	Abbreviation	Definition
Display Line or Display Axis		A line defining the track and distance along which displaying aircraft may operate.
Display Pilot ²		A pilot who holds a Display Authorisation (DA) or exemption, issued by their National Aviation Authority, or an appropriate military Public Display Authority (PDA), or military exemption, which allows them to take part in a Flying Display.
Display Routine		A series of linked manoeuvres to be performed during a Flying Display.
Evaluation Oversight Officer	EOO	The CAA Flight Standards Officer (FSO) responsible for the management of the DAE and DA process.
Fédération Aéronautique Internationale	FAI	The world air sports federation.
Flying Control Committee	FCC	A group of suitably experienced persons assembled to assist the FDD in safety management of a Flying Display.
Flying Display		Any flying activity deliberately performed for the purpose of providing an exhibition or entertainment at an event that has been advertised and is open to the public.
Flying Display Director	FDD	The person responsible to the CAA for the safe conduct of a Flying Display ³ .
Flypast		An aircraft flying, either singly or in formation, past a gathering of Spectators along a pre-planned route without manoeuvring, other than when necessary for safe and accurate navigation. Accordingly, this will not include Aerobatic Manoeuvres. A Flypast is considered to consist of one single pass unless otherwise specified on the appropriate Permission.
G-LOC	G-LOC	G-induced loss of consciousness (or Acceleration-induced loss of consciousness)
Military Aviation Authority	MAA	The military authority responsible for the regulation of military-registered air systems, and military flying displays.
Minimum Aerobatic Height		The minimum height above which the aircraft must be capable of complete recovery from an aerobatic manoeuvre. This will be the most restrictive of: • The minimum aerobatic height specified in the Permission; • The minimum aerobatic height quoted on relevant pilot's DA (in relation to the aircraft category being flown); or • The minimum aerobatic height imposed by the FDD.
Minimum Multi-Engine Display Speed(s)	MMEDS	For the purposes of this CAP, MMEDS is defined as a speed at which, in the event of the sudden failure of the critical engine during any part of a display, it is possible to maintain control and establish a safe flight path.

² For multi crew aircraft, it is the 'pilot-in-command' to which the term 'pilot' refers to throughout this CAP.

³ The Event Organiser and FDD might in some cases be the same person.

Term	Abbreviation	Definition
Minimum Separation Distance	MSD	The minimum separation, in all directions, between any part of an aircraft in flight and the ground, water or any obstacle.
Non-Aerobatic Flying Display		A Non-Aerobatic Flying Display is defined for these purposes as a display made up of manoeuvres which do not require the pilot to exercise the privileges of an Aerobatic DA; where aerobatic manoeuvres are as defined in Schedule 1 of the ANO.
Participant		A Flying Display or Special Event performer, or any person directly involved in the conduct of a Flying Display performance.
Permission		The document issued by the CAA permitting the proposed flying activity to take place.
Private Flying Display		Any flying activity deliberately performed for the purpose of providing an exhibition or entertainment at a private event requiring a Permission to operate contrary to the requirements of SERA.5005(f). (See also 'Flying Display' ⁴)
Regulatory Article 2335	RA2335	Regulation detailing the requirements for Flying Displays held over MOD Occupied Property and events over non-MOD Occupied Property where the only participants are military registered aircraft.
Separation Distance		The lateral distance between the displaying aircraft and Crowd Line.
Special Event		Any flying activity, other than a Flying Display or Private Flying Display, deliberately performed requiring a Permission to operate contrary to the requirements of the ANO, the Rules of the Air or SERA. Special Events include Funeral Flypasts, the dropping of articles and can include film work or any other unusual activity ⁵ .
Spectator		A person attending a Flying Display specifically to witness the event.
<u>Stable flight</u>		<u>Refers to an aircraft maintaining a predictable and controlled state.</u>
Swept Wing Jet		Any jet aircraft the CAA classifies as 'Swept' including, but not limited to, those where the wing leading edge is at an angle of 30 degrees or more from the perpendicular to the longitudinal axis ⁶ .
Tailchase		A Tailchase is defined as one or more aircraft following a leader through a series of manoeuvres.
Tyro Display Authorisation	TDA	An authorisation available to a newly qualified display pilots subject to the conditions detailed in CAP1724.

⁴ Where reference in this CAP is made to a 'Flying Display' the content applies also to a 'Private Flying Display'.

⁵ Special Event Permissions do not include aerobatics, unless otherwise stated

⁶ Classification of a particular aircraft type is the responsibility of the CAA.

General Information

Introduction

Flying Displays demand the highest level of skill and precision from pilots who often fly a variety manoeuvres at energy levels and proximity to people that is outside normal aviation practice. Because of this, Display Pilots must approach display flying with the appropriate attitude and have the knowledge, skill and experience to mitigate the relevant risks. This publication sets down the required standards and provides guidance on best practice to ensure that pilots participating in Flying Displays can demonstrate the correct attitude, acquire the necessary knowledge and skills, and continue to maintain such attitudes and skills over time.

As the Competent Authority for the UK, the CAA is responsible for issuing Display Authorisations (DA) in accordance with Article 86 of the ANO. The CAA authorises Suitably Qualified and Experienced Personnel (SQEP) to act as DAEs who use the processes in this document to mentor and evaluate display pilots. Each evaluation will, by necessity, be a subjective assessment of the individual concerned, both in terms of fitness (attitudes and behaviours) and competence (practical skills and abilities). The CAA provides oversight of this process to ensure that the necessary standards are maintained.

Unless otherwise stated, nothing in this publication is intended to conflict with the ANO or other legislation, which, for the avoidance of doubt, **must** be regarded as overriding. Furthermore, compliance with this publication does not, by itself indemnify any person or persons against liability for an accident or serious incident occurring.

Whilst every effort is made to ensure that all information is correct at the time of publication, the CAA reserves the right to amend this document as required to accommodate changes to the law, to correct errors and omissions or to reflect changes in national policy and best practice.

Throughout this document the following editorial practices and definitions **shall** apply:

- **‘Shall / Shall not’** and **‘Must / Must not’** are used to indicate a mandatory requirement.
- **‘Expect’**, **‘Should’** and **‘Should not’** are used to indicate strong obligation.
- **‘May’** is used to indicate discretion.
- **‘Applicant’** is used to indicate a person who is seeking the issue, renewal or upgrade of a DA.

This document **should** be read in conjunction with CAP 403: Flying Displays and Special Events: Safety and Administrative Requirements and Guidance.

Please address any queries or comments on this document to the CAA GA Unit.

Safety Management

At Flying Displays, DA holders are responsible for ensuring that they comply with the Rules of the Air and the ANO, the conditions of their licence(s) and Display Authorisation, the conditions of a Flying Display Permission issued by the CAA, the limitations and conditions attached to an aircraft's Certificate of Airworthiness or Permit to Fly and the relevant limitations of this CAP, and CAP 403. They will be accountable to the CAA for a failure to comply with any of the applicable regulations or conditions. Pilots are reminded that it is an offence under the ANO to recklessly or negligently endanger any person, property or aircraft.

The responsibilities of the FDD, FCC and EO at Flying Displays are detailed within CAP 403.

Reporting

Open and honest reporting is an important part of an effective flight safety system; this allows all those involved in Flying Displays to learn from others' incidents in order to prevent accidents in the future. The CAA welcomes open reporting from all involved in Flying Displays such that they can be shared with others. Furthermore, reporting to the CAA allows the Authority to focus its regulation and support efforts

into the areas that will make the greatest difference; if the Authority doesn't know about an issue it will not be able to do anything about it.

Any observation, incident or issue **should** be reported, no matter how small and insignificant it may seem, and can cover aspects such as Human Factors (HF), concerns over performance, near misses, things that might have led to an incident or accident had they been left or not caught, etc. Although Flying Display Directors (FDDs) **must** submit form SRG1305 / Form 4, the joint CAA / MAA 'Flying Display Director Post Display Feedback Form', the same form may be used by anyone wishing to report an issue in the interests of Flying Display safety. All reports will be treated confidentially and all personal information will be removed during any follow up to protect the reporter. Additionally, occurrence reports may be submitted using the CAA aviation reporting portal.

Subject to exercising discretion in relation to the confidentiality of the individual(s) involved, participants, organisers and supervisors are also encouraged to report any incidents or examples of errors of a HF nature that occur during a display to CHIRP who have a dedicated Flying Display reporting stream designed to promulgate to the wider community any lessons learned that could be of benefit to others.

Further information concerning other reporting options available can be found on the CAA website ([refer to Appendix G](#)).

Chapter 1

General Rules and Limitations

Legal requirements

- 1.1. All pilots of civilian registered aircraft flying in the UK are required, by UK law, to comply with the ANO and the associated Rules of the Air / National regulations including the Standardised European Rules of the Air (SERA). Failure to comply **may** be a criminal offence and can result in suspension of licence privileges and criminal prosecution.
- 1.2. Pilots have specific responsibilities with regard to their participation in Flying Displays in the UK. The ANO⁷ states that any pilot flying at a Flying Display **must**:
 - a) Ensure that the FDD has the required Permission for the event
 - b) Ensure that they are capable of complying with the conditions of the Flying Display Permission
 - c) Hold an appropriate, valid Display Authorisation^{8, 9}
- 1.3. Pilots must comply with an aircraft's Certificate of Airworthiness or Permit to Fly at all times. More restrictive limits contained within such documents take precedence over any CAA Permission issued for a Flying Display or Special Event.
- 1.4. Pilots **shall** ensure that any Permissions required by the ANO, Rules of the Air Regulations and SERA, are in place before carrying out practice flights at any location.

⁷ Article 86(2), The Air Navigation Order 2016 refers.

⁸ In exceptional circumstances, the CAA **may** issue an Exemption to the requirement to hold a DA.

⁹ For multi crew aircraft, the Pilot-in-Command (Captain) shall be the Pilot Flying and DA holder.

Long Term Permissions (LTP) for display practice

- 1.5. Where a long term CAA Permission for display practice is in effect, pilots **must** ensure they understand the precise nature of the permitted activity and any conditions contained in that Permission prior to flying.
- 1.6. A LTP for display practice **may** be used by pilots to practice within the privileges and scope of a valid DA.
- 1.7. Use of a LTP for display practice requires the authorisation of the Permission holder.
- 1.8. Pilots seeking an initial issue DA, or an upgrade to an existing DA, **shall** only use the LTP for display practice following an appropriate briefing and authorisation from their DAE.
- 1.9. No persons other than minimum crew, as detailed in the aircraft Certificate of Airworthiness or Permit to Fly (or equivalent), are permitted onboard a civilian registered aircraft during any flight made pursuant to a LTP except for the carriage of their DAE when conducting DA training or evaluation.
- 1.10. DAEs **shall** record details of each flight authorised by them made pursuant to a LTP.

Airborne Flying Display Directors (AFDD)

- 1.11. Provided a pilot holds a DA and a valid AFDD / FDD accreditation, and the appropriate behavioural and attitudinal assessment has been completed satisfactorily, Display Pilots **may** act as AFDDs at Flying Displays consisting of up to 3 single AFDD Display Items per day at the location of the event.
- 1.12. Further details of AFDD accreditation can be found in CAP 403.

Minimum rest

- 1.13. Prior to the beginning of any day containing Flying Display activity, display pilots **should** have a minimum period of 11 hours continuous rest, of which 8 continuous hours are available for sleep. Pilots returning to the

UK having crossed multiple time zones **should** consider appropriate acclimatisation to ensure they are suitably rested.

Close Formation (f)

- 1.14. A close formation leader is responsible for all aspects of their formation of aircraft. This includes, but is not limited to:
- a) Briefing and walk through of the planned display routine or flypast
 - b) Safety, including procedures for joining, breaking and escape
 - c) Terrain clearance
 - d) Positioning and handling
 - e) Ensuring each formation member has the appropriate formation skill level on their DA
 - f) Establishing to their satisfaction that for each formation member, their recent practice (or experience) in close formation is adequate
- 1.15. It is highly recommended that all formation teams / scenarios develop and adopt their own SOPs covering all aspects of normal operation and escape / emergency procedures.
- 1.16. The size of the planned close formation dictates the DA requirements of all participants. All formation members **must** have a valid DA for the required number of aircraft in the formation.
- 1.17. Where a formation is planned with multiple elements, pilots **may** participate subject to the following limitations:
- a) The overall formation leader **must** hold an Unlimited Numbers Formation Leader DA
 - b) Individual formation element leaders **must** hold an Unlimited Numbers Formation Leader DA
 - c) All other formation members **must** hold, as a minimum, a formation member DA for not less than the number of aircraft in the element
- 1.18. Where a formation is planned with multiple elements, where each element can depart / break-out of formation without affecting the remaining elements, pilots **may** participate subject to the following limitations:

- a) The overall formation leader **must** hold an Unlimited Numbers Formation Leader DA
- b) Individual formation element leaders **must** hold, as a minimum, a formation leader DA for not less than the number of aircraft in the element
- c) All other formation members **must** hold, as a minimum, a formation member DA for not less than the number of aircraft in the element
- d) The elements **must** be flown with sufficient separation between each element to enable each element leader to clearly define their own flight path and, if necessary, for them to disengage their element from the formation without endangering other aircraft

Formation briefings and walk throughs

- 1.19. A formation leader is responsible in ensuring a thorough formation briefing is given and **must** ensure sufficient time is available to conduct one.
- 1.20. All formations at Flying Displays **must** be briefed prior to flying¹⁰ and the brief **should** include a walkthrough. The following **must** be briefed as a minimum:
 - a) Overview - Leader establishes the skill level and recent formation experience of formation members, gives an overview of the intended display, and confirms that members have the required competence
 - b) The formation positions of each pilot and aircraft
 - c) SUTTO – start-up procedures, taxi order and spacing, line-up positioning, takeoff formation and stream interval as appropriate
 - d) Formation join-up
 - e) Formation changes
 - f) Formation spacing
 - g) Formation non-aerobatic / aerobatic minimum height(s) (the most restrictive of the entire formation)¹¹

¹⁰ Where possible, formation leaders should circulate pertinent pilots notes prior to their formation briefing.

¹¹ For formations (including display teams) consisting of pilots who hold differing DA minimas, leaders must adopt the highest individual minima for the whole formation whilst flying in formation. Recognising that formation members may be stepped down the leader **must** fly at a height which permits the lowest aircraft to remain above the required minimum height.

- h) Formation minimum separation distance from the crowd (the most restrictive of the entire formation and how the leader will ensure that formation members do not infringe the applicable minima)
- i) Display components such as aerobatic elements, splitting into sub formations, separation, tailchase elements (aerobatic and non-aerobatic), timings, and situational awareness calls
- j) Display site topography and hazards
- k) Recovery / landing sequence
- l) Loser plan (including formation leadership)
- m) Break-out, unsighted, loss of situational awareness (SA)
- n) Emergencies – power loss, systems failures, shepherding, radio failure
- o) Actions in the event of a STOP or Terminate call
- p) Questions – Leader to confirm that members have understood the brief and are prepared to proceed. If the formation leader is not content with the ability, currency or competence of any of the pilots in the formation, then the leader **should not** allow that pilot to take part in the formation

1.21. Following the formation detail, the formation leader **should** conduct a post flight debrief to identify any safety issues and lessons learnt.

Tailchase (t)

- 1.22. During a tailchase, each aircraft in turn will generally follow the leader's flight path but retain a high degree of individual decision making over the exact path taken using the principles of lead and lag. Separation distances between aircraft usually vary from 50 to 200 metres.
- 1.23. Mock combat or dog-fight displays, whilst not necessarily following the definition of a Tailchase, do require many of the same skills such as assessment of closing speed and angle off. Consequently, these types of display are to be treated as tailchases from the DA point of view.
- 1.24. A flight of individual aircraft in loose trail (>200 metres separation) with manoeuvres restricted to gentle turns is not a tailchase and a formation /

tailchase DA is not required. Any scenario involving one or more 'flights' of aircraft following in loose trail **must** be briefed by the holder of a formation lead and / or tailchase lead DA.

- 1.25. Tailchases are restricted to a maximum element size of 4 aircraft. However, more than one element may participate in a tailchase with the leader of the rear element(s) deciding the specific flight path for their element under the overall direction of the main leader. Where more than one element is involved in the tailchase, each element leader **must** hold a DA which specifically authorises the pilot to lead tailchasing and additionally, the overall formation leader **must** hold an authorisation for Unlimited Formation Leading on their DA.

Displaying multi-engine aircraft

- 1.26. Deliberate asymmetric flight **must not** be conducted as part of a display routine at UK Flying Displays.
- 1.27. So as to not impose additional hazard to persons on the ground in the event of an engine failure, multi-engine aircraft **must not** be flown below the MMEDS established for the display being flown.
- 1.28. DAEs **must** ensure that during initial evaluation or renewal, pilots of multi-engine types have planned escapes manoeuvres for asymmetric emergencies during their display planning.

Flight exceeding 250 KIAS

- 1.29. Operators of aircraft that intend to exceed the maximum speed limit of 250 KIAS when flying below Flight Level 100 **must** apply for a specific approval from the CAA GA Unit to allow alleviation from the SERA speed limitations. Applications for such approvals **should** be made by selecting the Flying Display and Special Event or Unusual Aerial Activity application form link at Appendix G.

Use of Transponder

- 1.30. Pilots operating transponder equipped aircraft are reminded of the mandatory requirement for the equipment to be turned on in flight to

provide a level of conspicuity¹². Display aircraft (whether displaying or practising) **should** transmit the published conspicuity code (squawk) of 7004, unless otherwise directed.

Crowd separation distances

- 1.31. **General.** The minimum lateral Separation Distances between display aircraft and the crowd line are detailed in CAP 403. The following paragraphs provide additional guidance.
- a) **On-crowd wind.** During any display, pilots **should** be aware of, and make due allowance for, an on-crowd wind component.
- b) **Getting it wrong.** If a pilot misjudges their separation from the crowd, e.g. if the wind is stronger than anticipated, they **should** make an early decision to abort / escape if safe to do so. However, the safe flight of the aircraft **must** be prioritised over crossing the display line as it is better to end up 'Too Close' than risk a departure from controlled flight (or an aircraft overstress) in an attempt to avoid a 'line bust'.
- c) **Taxiing.** CAP 403 states the absolute minimum distance for taxiing aircraft, however, pilots **must** consider the effect of propeller slipstream, rotor downwash, jet efflux from their aircraft and ensure they taxi at a suitable distance from spectators so as not to cause an unsafe situation. This is particularly relevant to rotary aircraft, which may need to hover-taxi. Consideration must also be given to the surface condition and any on-crowd wind.

Minimum heights during displays

- 1.32. All aerobatic manoeuvres **must** be flown such that the aircraft can be fully recovered above the minimum aerobatic height as per the pilots DA, FDD limitation or CAA Permission (whichever is higher).
- 1.33. The aerobatic minimum height for Category G1, G2, H1 and H2 aircraft **must not** be lower than 500' AGL / ASL.

¹² Use of transponders for formations **shall** be briefed by the formation leader.

- 1.34. For pilots operating to different aerobatic and non-aerobatic minimum display heights, whether as part of their DA or the event requirements, the following also apply¹³:
- a) Where one Aerobatic Manoeuvre is linked directly to another, the aircraft **must** remain above minimum aerobatic height throughout the transition.
 - b) Where a mixture of aerobatic and non-aerobatic manoeuvres are flown, blending is permitted as follows:
 - i) Once certain of being able to recover by minimum aerobatic height, where the next manoeuvre is non-aerobatic, a gentle straight descent to minimum non-aerobatic height is permitted providing the aircraft remains at a pitch angle of 30 degrees or less (in practice, the descent will be shallow and flown at much less than 30 degrees). The minimum non-aerobatic height **must not** be used as the target minimum for recovery from aerobatic manoeuvres.
 - ii) A straight climb from minimum non-aerobatic height into an aerobatic manoeuvre is permitted providing the aircraft remains at a pitch angle of 30 degrees or less until passing minimum aerobatic display height.
- 1.35. When applying for, renewing or upgrading a DA, pilots **must** demonstrate an understanding of the requirement to:
- a) Establish entry parameters for all aerobatic manoeuvres, including the speed adjustment required when entering from a climb to aerobatic minimum height (e.g. from non-aerobatic minimum height)
 - b) Achieve aerobatic gate parameters at all critical junctures of a manoeuvre, such as the apex of a loop before committing to 'pulling through the vertical' to continue the manoeuvre
 - c) Ensure that complete recovery is possible above minimum aerobatic height

¹³ This paragraph does not apply to non-aerobatic flying displays.

- d) Plan and, where possible, practise escape manoeuvres for those occasions when gate parameters are not achieved
- e) Remain above minimum aerobatic height when directly linking aerobatic manoeuvres

Arrivals and departures

- 1.36. All arrivals and departures **must** be in accordance with the aerodrome procedures, command orders (for military Flying Displays) and relevant regulation. Pilots **must not** use the privileges of their DA / PDA during arrivals or departures unless arriving into a pre-organised display slot. Modifying arrivals or departures in an attempt to provide 'spectacle' introduces additional hazards and must not be carried out. Pilots of civilian aircraft who do not hold a valid DA are not permitted to use the Military Long Term SERA 5005(f)(2) Permission over MOD Occupied Property.

Pre-display notification to FDDs

- 1.37. A certified declaration as contained at form SRG1327 is considered to be an acceptable minimum level of documentation for civilian pilots to provide to the FDD and **should** be submitted to the FDD no later than 7 days prior to the Flying Display¹⁴.
- 1.38. Form SRG1327 is divided into two parts, part 1 containing pilot specific information¹⁵ and part 2 concerning aircraft details. To provide a degree of flexibility and offer the option of the use of alternative aircraft to cover eventualities such as unserviceability, a pilot may submit a form SRG1327 Part 2 for multiple aircraft to a FDD.
- 1.39. In addition to the mandatory requirement to inform the FDD of hazardous materials contained on or within the display aircraft, pilots **should** consider points that first responders need to know in the event of an incident. It **may** be deemed beneficial to provide additional information

¹⁴ FDDs **may** choose to use their own alternative method when carrying out their documents check.

¹⁵ The FDD **must not** permit any person to act as pilot of an aircraft which participates in a Flying Display unless such person holds an appropriate pilot display authorisation. A copy of the pilot's DA **should** be submitted to the FDD along with the form SRG1327.

regarding such things as break-in locations, canopy / cockpit access, seat belt release, etc, in the form of a First Responders Guide to better support the response to an emergency.

- 1.40. Any pilot intending to fly aerobatic manoeuvres **must** notify the FDD, in advance, of the routine / sequence / repertoire of manoeuvres that they intend to perform¹⁶ by entering the required detail on their form SRG1327 (a ribbon diagram is the preferred method). It is acknowledged that pilots **may** need to adapt their aerobatic display routine appropriately to local conditions on the day of the display. Pilots **should** discuss any aspect of the local conditions that might affect their display routine with the FDD.
- 1.41. Display pilots **must** notify the FDD of the lateral separation distance they intend to use prior to the display; form SRG1327 **may** be used.

Responsibilities to military organisers

- 1.42. Under military flying regulations (RA2335), military organisers are required to review the DA of participating civilian pilots as evidence of display competency and limitations.

STOP, TERMINATE and standard call procedures

- 1.43. Display Pilots **must** be fully conversant with the 'STOP', 'TERMINATE' and standard calls along with the 'STOP call and Safety Breach Reporting and Procedures' sections contained in CAP 403.
- 1.44. Where a 'STOP' call is issued, display pilot(s) will be subject to an immediate provisional suspension of their DA pending the outcome of an investigation by the CAA. If the 'STOP' is called due to an issue associated with a formation or tailchase, all of the pilots involved will be subject to the provisional suspension of their DAs¹⁷. The pilot(s) **must not** exercise the privileges of their Display Authorisation until the CAA

¹⁶ This allows the FDD to identify any concerns specific to their event in advance and allows the FDD and FCC to identify early any concerns that may arise during a display.

¹⁷ In the case of large formations or tailchases of greater than 4 aircraft, this will apply to the relevant element only.

withdraws the provisional suspension or the outcome of further regulatory enforcement action is known¹⁸.

- 1.45. FDDs and pilots **should** note that a STOP call, by itself, is not a presumption of 'guilt' for a pilot. The provisional suspension is issued in order that any safety issues can be highlighted as quickly as possible and will remain in place for the duration of the subsequent CAA investigation. This investigation begins immediately the STOP call is reported to the CAA and will be kept to the minimum time possible, the length of the investigation will depend on the nature of the STOP call and the provision of supporting information and therefore can be of variable length.
- 1.46. The FDD and pilot **should** consider whether, following a TERMINATE call, it is safe to recommence the display. It is advisable to consider 'what ifs' such as this prior to commencing the display.

The recording of Flying Display related activities

- 1.47. DA holders **should** record all DA renewals, upgrades and displays (both actual and practise) along with all associated skill levels (i.e. aerobatic / formation) in their log books to provide:
- a) Documented evidence of compliance with currency requirements
 - b) DAEs with reference material for consideration when assessing evaluation requirements
 - c) Evidence and supplementary information when applying for DA renewals and upgrades

¹⁸ See ANO, Article 253 'Powers and Penalties'.

Chapter 2

The Display Authorisation Evaluator (DAE)

Appointment as a DAE

- 2.1. To be nominated as a DAE an individual **must** first be recommended by either a member of the CAA Flying Display regulation team or an organisation associated with a particular display discipline. Members of the Flying Display community may nominate candidates for CAA consideration. The sponsor **must** have personal knowledge of the individual's work, standards and integrity.
- 2.2. Appointment as a DAE is conditional on CAA assessment of current competence, experience and fitness and normally includes the minimum requirements detailed below. The candidate:
- a) **Must** hold a valid pilot's licence with a minimum of 1,000 hours as pilot-in-command or equivalent experience acceptable to the CAA
 - b) **Should** have held a Display Authorisation (DA) for three years
 - c) **Should** be an active Display Pilot
 - d) **Should** have civilian and / or military flying instructional experience¹⁹
- 2.3. The appointment process includes an assessment of the potential DAE's:
- a) Current competency in display flying
 - b) Ability to act as a role model
 - c) Knowledge of display flying and Flying Display regulation
 - d) Knowledge of DA approval, renewal and upgrade processes
 - e) Experience of mentoring and knowledge of ongoing responsibilities in relation to Display Pilot monitoring
 - f) Knowledge of display flying HF
 - g) Knowledge of CAP 1724, CAP 403, the ANO and SERA
 - h) Ability to write useful and meaningful assessment reports
 - i) Ability to maintain personal records of Evaluations and Mentoring

¹⁹ A CRI rating by itself is insufficient for this purpose.

- j) Willingness to engage with both the CAA and the Military Aviation Authority (MAA) to assist in continually improving Flying Display regulation and the safety of the sector
- 2.4. Prospective DAE candidates are required to submit an Application for Fitness Assessment for a Flying Display Role (form SRG 1303B) to the CAA during the appointment process to inform the fitness assessment and confirm suitability for the role.
- 2.5. DAEs are required to sign the CAA / DAE Agreement (found at Appendix E) upon appointment.
- 2.6. DAEs are appointed for a 3 year period.
- 2.7. The CAA organises one DAE seminar each year where current issues relating to DAs and display flying are discussed. Where possible, DAEs **should** attend annually, but **must** attend at least one in every 3 year period.
- 2.8. A DAE certificate will be issued on appointment by the CAA.

Reappointment as a DAE

- 2.9. Following a 3 year appointment period, DAEs **may** be reappointed having:
 - a) Satisfactorily passed a further fitness assessment following submission of a form SRG 1303B
 - b) Attended at least 1 DAE seminar meeting in the previous 3 year appointment period
 - c) Continued to satisfy the DAE appointment criteria set out above
 - d) Supported the CAA in improving regulation and the safety of the sector
- 2.10. Towards the end of a three year appointment period, an observation visit from the CAA **should** be arranged at a mutually convenient time. DAEs **may** then be reappointed following a satisfactory observation visit²⁰.

²⁰ DAEs **may** be reappointed for a further three year period following any 'mid-term' observation visit carried out for purposes such as the upgrade of DAE authorisations.

Roles and Responsibilities

2.11. The roles of a DAE are as follows:

- a) To set examples of best practice for members of the display community
- b) To conduct evaluations of display pilots in accordance with this CAP
- c) To encourage reporting of all incidents and occurrences to the CAA
- d) To actively monitor display pilot standards²¹

2.12. When conducting DA evaluations, DAEs operate on behalf of the CAA. As such they **shall** discharge their duties accordingly. DAEs are responsible to the CAA for:

- a) Conducting assessments of display pilots in accordance with CAA requirements
- b) Accurately reporting on the assessments of display pilots using form SRG 1300
- c) Ensuring that the display pilots they mentor and assess maintain a high standard of professionalism and safety
- d) Keeping a personal record of all evaluations and mentoring carried out on behalf of the CAA
- e) To actively improve the safety of the sector

DAE aerobatic, formation and tailchase approvals

2.13. Only appropriately approved DAEs may recommend an applicant for the inclusion or upgrade of an aerobatic, formation or tailchase authorisation.

The Evaluation Oversight Officer (EOO)

2.14. The CAA EOO manages the DA and DAE process and is the DAE's first point of contact within the CAA. The EOO is charged with:

- a) Assisting prospective display pilots to find a DAE in their required discipline and geographical area

²¹ Where a DAE perceives a lapse in safety standards he **shall** bring the matter to the attention of the Display Pilot and, if no improvement is noted, the CAA EOO. If any lapses are observed at a Flying Display, the FDD **should** be informed, followed by the CAA EOO.

- b) Conducting periodic DAE Observation visits
- c) The management of the DAE and DA system on behalf of the CAA
- d) The organisation of DAE seminars

Review and Enforcement

- 2.15. DAE performance will be subject to ongoing review. If it becomes necessary to remove an evaluator from the list of DAEs due to inactivity, the CAA will give notification in writing explaining the reason for such termination.
- 2.16. In the event a DAE is found to be underperforming, the CAA **may** provisionally suspend a DAE appointment. The DAE will be contacted without delay.
- 2.17. The CAA will convene a review board and an investigation will be undertaken in accordance with the Flowchart Analysis of Investigation Results (FAiR) System at Appendix F.
- 2.18. Once the investigation is complete, a decision will be made as to whether any further action is required. Potential outcomes include: reinstatement; reinstatement following a satisfactory observation visit; downgrading categories and skill levels; further training; suspension or revocation²².
- 2.19. A DAE will be offered the right of review in circumstances where enforcement action follows an investigation. A request for a review **must** be made to the CAA within 14 days of receipt of written notification²³.

²² In accordance with the ANO, Article 253 'Revocation, suspension and variation of certificates, licences and other documents'.

²³ In accordance with Regulation 6 of The Civil Aviation Authority Regulations 1991.

Chapter 3

DAE standardisation

General

- 3.1. Although the manner in which one DAE will conduct an evaluation may differ from another, it is the frame of mind and professional approach required for display flying that needs to be conveyed to the display pilot. Accordingly, whilst there will be some differences in practice, the CAA will endeavour to provide standardisation, continuous improvement and the sharing of best practice through periodic CAA visits and DAE seminars.

Standardisation

- 3.2. In order to attain a degree of standardisation for all evaluations, DAEs **should** follow the requirements set out in this CAP and in particular use the checklist provided at Appendix C. Due to varying backgrounds, experience and approach of individual DAEs, it is accepted that a wholly consistent approach may not be achieved for each evaluation.

Chapter 4

Mentoring and initial assessment

General

- 4.1. A pilot who wishes to apply for a DA **should** establish contact with a DAE who holds a current authorisation (pertinent to the skill(s) and categories(s) the potential display pilot wishes to be evaluated in) and agree to be mentored by that DAE²⁴. Once agreed, the DAE **should** satisfy themselves of the applicant's suitability to undertake Display Flying.

Pre-evaluation mentoring

- 4.2. The aim of pre-evaluation mentoring is for the DAE to establish the applicant's motivation and commitment and for the applicant to understand what is required of them. Human Factors play a large part in the initial assessment and this early rapport forms the basis for follow-on mentorship, guidance and support that the DAE **should** provide to the pilot and underpins the safety of UK display flying. Pre-evaluation mentoring also provides an opportunity for the DAE to support the applicant during their application process.

The initial assessment

- 4.3. An initial assessment **should** be conducted, ideally as a face to face meeting between the DAE mentor and the applicant. A detailed explanation of what is required of a DA holder **should** be given by the DAE. The following areas **must** be considered by the DAE:
- a) **Experience.** Inspect the applicant's logbook to determine total flying experience, any previous display, aerobatic or other relevant experience, total time on both the display aircraft type and display

²⁴ A list of DAEs can be found on the CAA website. Note that this list is not exhaustive and contains only the names of those whose consent has been received by the CAA for the purpose.

aircraft category²⁵. The following **should** be used as a guide when considering the minimum level of experience required before a DA application can be considered:

- i) Pilots of aircraft with piston engines of 800hp or greater, 2730kg mass or greater, jet powered, helicopter or gyroplane - a minimum of 500 hours total time, of which not less than 300 hours **should** be as pilot-in-command
- ii) Pilots of fixed-wing aircraft that do not fall within the categories in i) above - a minimum of 200 hours total time, of which not less than 100 hours **should** be as pilot-in-command
- iii) Pilots of microlight aircraft - a total of 100 hours flying of which not less than 50 hours **must** be as pilot-in-command of a microlight aircraft
- iv) Pilots of gliders - a total of 100 hours flying of which not less than 50 hours **must** be as pilot-in-command of a glider
- v) Pilots of powered parachute, paramotors, powered hang gliders, hang gliders or paragliders - a total of 50 hours flying of which not less than 25 hours **must** be as pilot-in-command of a powered parachute, powered paraglider, powered hang glider, hang glider or paraglider as appropriate
- b) **Documentation.** Check the applicant's pilot licence, medical certificate²⁶ and Certificate of Renewal (as applicable).
- c) **Motivation.** The DAE **should** use open questioning to establish the motivation of the potential applicant for display flying in order to judge whether the applicant is suitable. The principle being that pilots **must** show a desire to proficiently display the aircraft and not themselves (or to show off) by taking unnecessary risks.

²⁵ Consideration **should** be given as to how recent the majority of the flying hours relating to the specific aircraft type / group / category have been accrued.

²⁶ Display Authorisation for pilots of all registered aircraft are only valid if the pilot holds either a UK or EU medical certificate issued by an Aeromedical Examiner or an International Civil Aviation Organization medical certificate that is of an equivalent or higher standard.

- d) **Commitment and training.** The DAE and applicant **should** agree what will be necessary to achieve the required standard for DA evaluation, including a realistic timeframe to do so. This may involve a significant commitment from the applicant in terms of time, training and financial outlay and **should not** be underestimated.

4.4. In order to further assess and understand the applicant's flying ability, DAEs are encouraged to fly with candidates. Assessment flights for this purpose need not necessarily be carried out in the proposed aircraft type for display (if single seat for example).

Suitability

4.5. When considering applicant suitability, there are generally five grounds for the CAA deciding that an applicant is not suitable and would therefore not be issued with a DA:

- a) A lack of appropriate behaviours and attitudes
- b) Insufficient experience
- c) Inadequate or insufficient training
- d) A lack of flying ability
- e) A previous investigative or enforcement history with the CAA or other National Aviation Authority (NAA)

4.6. **Lacking appropriate behaviours and attitudes.** Where a lack of appropriate attitudes or behaviours is identified, an assessment **should** be made as to how the shortfall may be addressed. The applicant **should** be notified promptly by the DAE that the recommendation to the CAA for the issue of a DA may not be possible. This **should** be accomplished early on in the process to allow the applicant an opportunity to correct any failings and not left until the day of the test. A recommendation to the CAA for the award of a DA **should** only be made once the applicant has addressed any issues identified. If this situation does arise the CAA can assist in supporting the DAE with the decision.

4.7. **Insufficient experience.** If an applicant does not possess the requisite experience as per para 4.3 (a), they will not normally be issued with a DA. If the DAE feels that despite the lack of experience it is appropriate for the

applicant to be issued a DA, they **must** provide comprehensive details of a proposal to the CAA. It **should** be noted that in this case, a DA will only be issued in exceptional circumstances.

- 4.8. **Inadequate or insufficient training.** If an applicant has entered into DA training but has failed to commit fully to the agreed training programme, the DAE **should not** consider the applicant for a DA evaluation. Instead, the applicant **should** be encouraged to undertake further training to address the shortfall. If the candidate subsequently fails to commit, consideration **should** be given to terminating their training.
- 4.9. **Lack of ability.** Despite enthusiasm, a positive attitude, experience and training, some pilots will not possess the skills and ability required to safely participate in display flying. In this case, the DAE **should** terminate the applicant's training and inform the CAA – 'it is OK to say no'.
- 4.10. **Previous investigative or enforcement history with the CAA or other NAA.** Investigations, prosecutions, enforcement or other regulatory action will be taken into consideration when applying for a DA.
- 4.11. Once satisfied that the applicant is suitable for training, the DAE **should** ensure that the applicant submits a completed Initial DA pre-application notification form, a C.V. detailing flying qualifications and experience, and a completed form SRG 1303B to the CAA.
- 4.12. DAEs **should** note that ultimately the CAA will issue a DA based on a recommendation from a DAE and therefore, if any doubt exists as to the suitability of an applicant, the CAA **should** be contacted.

Failure to achieve the required standard

- 4.13. If, following the initial assessment, a DAE considers an applicant to be unsuitable for the grant of an initial issue DA, the DAE **shall** ensure that the details are emailed to the CAA GAU, clearly indicating the situation, stating the shortfalls and any recommended remedial actions. If this occurs, the applicant **should** contact the CAA prior to arranging any further training or evaluation.

Chapter 5

Display Authorisation evaluation process

Display Authorisation Evaluation process

- 5.1. All DA evaluations **must** consist of the following main areas:
- a) Documents check
 - b) Oral evaluation
 - c) Pre-flight brief and inspection
 - d) Flight demonstration
 - e) Post flight de-brief
 - f) Recommendation and submission of SRG 1300 within 14 days

Documents check

- 5.2. DAEs **should** ensure that the flight they are evaluating is conducted in accordance with the necessary legal requirements by ensuring that pilot and aircraft documentation is valid. This could be achieved by examining copies of all the relevant pilot, airworthiness and insurance documents (preferably in advance to maximise the time on the day of the evaluation) or, by way of a form SRG1327 and the pilot's declarations therein.
- 5.3. Furnishing the DAE with a form SRG 1327 reduces the workload of both display pilot and DAE in supplying and reviewing the complete documentation set. It gives the pilot practice at completing the form and provides an opportunity for the DAE to assess the accuracy of the information entered and to offer guidance where required.
- 5.4. DAEs **should** check that a valid Permission for display practice is in place²⁷ for the location of the intended evaluation flight and obtain the approval of the Permission holder for its use, as appropriate.

²⁷ unless the DAE, and display pilot, are prepared to accept the associated risks involved with the flight being carried out without Permission and strictly iaw SERA and / or ORS 4 No. 1496 and with the agreement of airfield managers / land owners / etc.

Ground assessment and discussion

- 5.5. The aim of the ground assessment is to establish that the applicant has a solid understanding of the operation and limitations of the aircraft to be flown along with an assessment of the applicant's attitude and motivation. This discussion **should** be used as an opportunity to share experience and knowledge.
- 5.6. Discussion topics, at the DAEs discretion, **may** include:
- a) aircraft Certificate of Airworthiness or Permit to Fly limitations, airframe weight, balance and loading limitations, engine operating limitations, 'G' load restrictions and any other limitations applicable to the demonstration aircraft²⁸
 - b) personal motivation, philosophy and reason for the applicant's wish to obtain / upgrade / renew a DA
 - c) the display that the applicant intends to demonstrate including the following topics:
 - i) the logic of the routine
 - ii) energy management
 - iii) the planning of the manoeuvres in relation to aircraft limitations
 - iv) the planning of the manoeuvres in relation to G management, particularly the considerations that have been made to ensure the G onset rate is kept at a level where warning signs of grey out give sufficient time to either offload and / or execute an escape manoeuvre where applicable. Planning of manoeuvres should have sufficient contingency to allow for offloading G if vision becomes impaired
 - v) ensure that pilots holding DAs covering multi-engine types have made adequate preparation for asymmetric difficulties during their display planning. This may be achieved by the pilot

²⁸ Such conditions always take precedence over any CAA Permission issued for Flying Displays and Special Events

establishing MMEDSs to be used whenever high power is in use (or is about to be used) regardless of the aircraft configuration or point in the display, along with appropriate escape manoeuvres to avoid endangering persons on the ground²⁹.

- vi) the effects of density altitude
- vii) the effects of surface and upper winds and how to adjust the display to compensate for external factors
- d) variations to the intended routine. Consider asking the candidate to carry out a second, non-aerobatic sequence, once their normal routine is complete (with a suitable pause to re-orientate as necessary) with an unplanned constraint such as a simulated lower cloud base or blocked road or pop-up avoid. The unplanned presentation should be simple and used to check that the candidate has sufficient spare capacity to safely adapt to an unforeseen constraint. This could also be used as a consideration as a possible course of action following a Terminate call where it may be inappropriate or not possible to recommence a practiced routine. Although Terminate calls are rare, having possibly had the cadence and energy management of a practiced routine disrupted, a pre-planned idea of possible continuation options **should** be discussed with candidates.
- e) the importance of conducting a display briefing whether the applicant is displaying as a singleton or leading a formation
- f) the importance of a walk through as preparation for a singleton or formation display or flypast
- g) the understanding of the need to:
 - i) establish entry parameters for all aerobatic manoeuvres, including the speed adjustment required when entering from a

²⁹ When establishing the MMEDS, the startle effect **should** be taken into consideration. It is likely that the minimum speed will be significantly above the usual single engine speeds found in flight manuals in order to provide adequate margin for recognition, reaction and recovery.

- climb to aerobatic minimum height (e.g. from non-aerobatic minimum height)
- ii) achieve aerobatic gate parameters at all critical junctures of a manoeuvre, such as the apex of a loop before committing to ‘pulling through the vertical’
- iii) ensure that complete recovery occurs above minimum aerobatic height
- iv) plan and practise escape manoeuvres for those occasions when gate parameters are not achieved
- v) remain above minimum aerobatic height when directly linking aerobatic manoeuvres
- h) emergency planning for:
 - i) engine or system failures
 - ii) changes in the weather during the display
- i) the understanding of the symptoms, and recovery from, inadvertent departure from controlled flight. The applicant **must** be fully aware of the characteristics of the aircraft to be flown in the demonstration and know the risks associated with flying at the limits of the flight envelope
- j) the understanding of the following restrictions that apply when flying with a minimum aerobatic height higher than minimum non-aerobatic height:
 - i) when climbing from minimum non-aerobatic height into an aerobatic manoeuvre, the pilot must fly straight and at no more than 30 degrees pitch angle until passing minimum aerobatic height
 - ii) when certain of being able to recover from an aerobatic manoeuvre by minimum aerobatic height and the next manoeuvres are non-aerobatic, that it is permitted to fly a straight descent at no more than 30 degrees pitch angle when

descending through minimum aerobatic height to minimum non-aerobatic height³⁰

- k) a pilot's responsibilities during a Flying Display briefing and on receipt of any written brief
- l) the understanding of any skill levels held by the pilot (formation / aerobatic) other than those being evaluated
- m) aircraft emergency egress and abandonment drills
- n) human performance and its limitations relating to display flying, including G-LOC and A-LOC avoidance planning and recovery tactics, factors that may influence G tolerance, stressors such as anxiety, pressure or physiological limitations, cognitive biases, cumulative fatigue, mental attitude and personal limitations.
- o) acceptable profiles for arrivals and departures at Flying Displays
- p) the applicant's knowledge and understanding of applicable regulation, such as, but not limited to:
 - i) This CAP
 - ii) CAP 403
 - iii) Rules of the Air Regulations
 - iv) SERA, with particular reference to SERA.5005
 - v) The ANO with particular reference to Articles 7, 11, 86, 240 and 241
- q) applicable limitations such as:
 - i) those contained on the holder's DA
 - ii) the minimum lateral separation distances between display aircraft the crowd line
 - iii) minimum heights specified or referred to in any Permission granted by the CAA which override the holder's DA minima

³⁰ In practice, the descent will be shallow and flown at much less than 30 degrees.

Pre-flight inspection

- 5.7. During the briefing session, the DAE **may** discuss the standard pre-flight inspection but **should** take the opportunity to remind the applicant of any display specific pre-flight inspection items.

Flight demonstrations

- 5.8. At the discretion of the DAE, applicants who are demonstrating aerobatic manoeuvres for the first time **may** be required to conduct an initial flight at a safe height (commonly above 1000 feet AGL / ASL) before demonstrating at a lower height as may have been requested by the applicant. For low level display evaluations, a Permission to operate contrary to the requirements of SERA.5005(f) may be required.
- 5.9. The DAE **should** be satisfied that the applicant is operating well within their personal competence, capacity and experience level, in a safe and controlled manner and with strict adherence to limits.
- 5.10. Evaluation criteria **must** include³¹:
- a) Correct accomplishment and orderly execution of planned manoeuvres
 - b) Airspeed and height control
 - c) Energy management
 - d) Ability to conform to Display Area and lateral separation minima requirements
 - e) Ability to compensate for the effects of wind
 - f) Ability to adjust display routine to accommodate unplanned issues
 - g) Ability to execute a planned series of manoeuvres
 - h) Ability to handle emergencies during a Flying Display routine
 - i) Ability to perform escape manoeuvres when gate parameters are not achieved
 - j) Maintenance of slot times and duration

³¹ Items f), h) and i) **should** be covered verbally and demonstrated where possible.

- 5.11. For all evaluation flight demonstrations the DAE **must** formally de-brief the pilot afterwards³² and **should** cover any variation of planned display due to weather conditions. The discussion **should** also include a check on how the pilot would have varied the display to accommodate other unplanned issues that may arise. The written details of the de-brief **shall** be included on form SRG 1300.
- 5.12. Evaluation flight demonstrations for the initial issue or renewal of a DA cannot be assessed solely whilst the applicant is following any other aircraft. DA evaluations involving formation **must** also include a solo or formation lead demonstration.

Non-aerobatic flying displays

- 5.13. Non-aerobatic flying displays that involve dynamic manoeuvring, including reversals, can appear to be benign, however displays such as these **must** be flown with caution. Such manoeuvring **should** be specifically briefed in detail by the DAE preceding a DA evaluation.

Spin training and departure awareness

- 5.14. An initial application for a DA that includes aerobatics **must** include evidence that the applicant has received appropriate spin training.
- 5.15. Additionally, applications for the renewal or upgrade of an aerobatic DA **must** be able to demonstrate that they are current on spin entry and recovery techniques, preferably on the aircraft type flown during evaluation (if permitted), by logbook evidence and / or demonstration. DAEs **shall** indicate that these conditions have been satisfied when completing form SRG 1300.
- 5.16. If the DAE is not satisfied that the applicant is sufficiently aware of, or current in, the recognition and recovery from unusual attitudes³³ the

³² It is recommended that DAEs consider the use of a Dictaphone to record observations to enable constant monitoring.

³³ Unusual attitudes can include, but are not limited to: nose high / low speed, nose low / spiral dive and inadvertent entries to tailslides.

recommendation **must** be restricted to non-aerobatic flying displays (with a specific ‘wingover’ exclusion) until such time as the applicant has received additional training.

Recommendation

- 5.17. Following successful evaluation, the DAE will provide a recommendation for issue / renewal / upgrade using form SRG 1300 which **shall** be submitted, by the applicant, to the CAA GA Unit³⁴ for approval. The contents will be processed, the DAE’s comments / recommendations reviewed and the CAA’s records updated accordingly. Subject to satisfactorily completing the procedure, a new DA will be issued.
- 5.18. Any recommendations for the inclusion of specific authorisations covering capabilities outside of the scope of the defined flying disciplines in the following chapters **should** be specifically included in the recommendation.

Record keeping

- 5.19. DAE’s **shall** keep detailed records of all evaluations and **must** be able to produce such records when requested by the CAA. The method and quality of record keeping will be subject to inspection during evaluations observed by the CAA. Records **should** be kept for a minimum of a 3 year rolling period.
- 5.20. DAE’s **should** produce and use checklists for reference during evaluations. For standardisation, the checklist found at Appendix C **should** be used. These checklists will subsequently form an integral part of the records to be kept and it is important to ensure that the topics required by this CAP (as applicable) are included in each evaluation.

³⁴ Any completed paperwork **must** be received by the CAA no later than 14 days from the date of the evaluation with at least 28 days allowed for the processing of correctly completed and submitted forms.

Chapter 6

Display Authorisation - Aerobatic (a)

- 6.1. In order to perform aerobatic manoeuvres during a Flying Display, the pilot **must** hold a DA or DA Exemption that has been appropriately endorsed, either with one of the skill levels set out below or individual evaluated manoeuvres. Manoeuvres from more advanced aerobatic skill levels **may** be included as “add-ons” and endorsed on DAs subject to satisfactory DAE recommendation, “aA plus Lomcevak” for example.
- 6.2. Evaluations for the issue or upgrade of an aerobatic DA **should** cover the basic physiological principles of exposure to G force and the effects of increased G, the factors that increase or decrease the risk of G-related impairment or incapacitation, the fact that a pilot’s G tolerance can vary and that alteration of consciousness can affect any pilot undertaking aerobatic manoeuvres. There **should** be awareness of both anticipated levels of G associated with each manoeuvre and suitable anti G straining manoeuvres. Pilots **should** be made aware that visual or other premonitory symptoms may not necessarily occur with rapid onset high G and G-LOC may occur without warning.

Fixed wing skill levels

Standard level (aS) aerobatics

- 6.3. The permitted manoeuvres for aS aerobatic authorisations are as follows:
- a) **Spins.** Erect Spins of one turn
 - b) **Stall turns.** Stall turns
 - c) **Loops and eights.** Inside circular loops, loops with roll off the top, ‘Cuban 8s’
 - d) **Rolls.** Single aileron rolls and barrel rolls

Intermediate level (al) aerobatics

6.4. The permitted manoeuvres for al aerobatic authorisations include those for aS above and the following:

- a) **Spins.** Erect spins of up to two turns
- b) **Stall turns.** Stall turns with rolls in the vertical
- c) **Loops and eights.** Inside half loops, reverse Cuban 8s, square loops.
- d) **Rolls.** Slow rolls, hesitation rolls, positive flick rolls. Rolls can be inserted in other figures
- e) **Inverted flight.** Sustained inverted flight

Advanced level (aA) aerobatics

6.5. The permitted manoeuvres for aA aerobatic authorisations include those for al above and the following:

- a) **Spins.** Inverted spins with entry and exit in normal or inverted flight
- b) **Stall turns.** Stall turns with inverted entry and exit
- c) **Loops and eights.** Outside half loops, outside loops and outside horizontal eights with inverted entry and exit, diamond and eight-sided loops.
- d) **Rolls.** Multiple continuous rolls, multiple flick / snap rolls (positive and negative), rolling turns

Unlimited level (aU) aerobatics

6.6. All pilots applying for an upgrade to unlimited level aerobatics **must** have passed through advanced level first.

6.7. The permitted manoeuvres for unlimited level aerobatic authorisations are as follows:

- a) By definition, there are no restrictions on aerobatic figures, including gyroscopic figures which a pilot flying Unlimited category aerobatics may perform

- b) Applicants **must** be current with flat erect spinning, flat inverted spinning, knife edge spinning and cross over spinning all of which **should** be recovered onto specific headings

Although based on FAI skill levels, these aerobatic DA skill levels have been adjusted to reflect the normal display aerobatic environment and are therefore not to be confused with FAI skill levels.

Fixed wing aerobatic skill level tables

- 6.8. The following table illustrates evaluation criteria and permitted manoeuvres by skill level.

Erect Spins of one turn	aS	al	aA
Stall turns	aS	al	aA
Inside circular loops	aS	al	aA
Loops with roll off the top	aS	al	aA
Cuban 8	aS	al	aA
Single aileron roll	aS	al	aA
Single barrel roll	aS	al	aA
Erect spins of up to 2 turns		al	aA
Stall turns with rolls in the vertical climb and / or dive		al	aA
Inside half loops		al	aA
Reverse Cuban 8		al	aA
Square loops		al	aA
Slow rolls		al	aA
Hesitation rolls		al	aA
Positive flick roll		al	aA
Sustained inverted flight		al	aA
Inverted spins with entry and exit in normal or inverted flight			aA
Stall turns with inverted entry and exit			aA
Outside half loops with inverted entry and exit			aA
Outside loops with inverted entry and exit			aA
Outside horizontal eights with inverted entry and exit			aA
Diamond and eight-sided loops			aA
Multiple continuous rolls			aA
Multiple flick / snap rolls, +ve and -ve			aA
Rolling turns			aA

6.9. The following tables illustrate the skill levels required to perform the listed manoeuvres.

a) Spins

Erect Spins of one turn	aS	al	aA
Erect spins of up to 2 turns		al	aA
Normal & inverted spins, entry / exit in normal or inverted flight			aA

b) Stall turns

Stall turns	aS	al	aA
Stall turns with rolls in the vertical climb and / or dive		al	aA
Stall turns with inverted entry and exit			aA

c) Loops and eights

Inside circular loops	aS	al	aA
Loops with roll off the top	aS	al	aA
Cuban 8s	aS	al	aA
Inside half loops		al	aA
Reverse Cuban 8s		al	aA
Square loops		al	aA
Outside half loops with inverted entry and exit			aA
Outside loops with inverted entry and exit			aA
Outside horizontal eights with inverted entry and exit			aA
Diamond and eight-sided loops			aA

d) Rolls

Single aileron roll	aS	al	aA
Single barrel roll	aS	al	aA
Slow rolls		al	aA
Hesitation rolls		al	aA
Positive flick roll		al	aA
Multiple continuous rolls			aA
Multiple flick / snap rolls, +ve and -ve			aA
Rolling turns			aA

e) Inverted flight

Sustained inverted flight		al	aA
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Rotary wing skill levels

Standard level (aRS) evaluation criteria

- 6.10. The permitted manoeuvres for standard level rotary wing authorisations are as follows:
- a) A maximum of 60° bank and 45° nose up / down
 - b) Hover manoeuvres

Advanced level (aRA) evaluation criteria

- 6.11. The permitted manoeuvres for advanced level rotary wing authorisations are as follows:
- a) Any Manoeuvre within the certified envelope of the display aircraft

Chapter 7

Display Authorisation - Formation (f)

Formation skill levels

7.1. In order to take part in any close formation flying at a Flying Display the pilot **must** hold a DA, or DA Exemption with the appropriate close formation annotation. The following table details the formation skill levels and associated limits:

Skill Level	Abbreviation	No of aircraft	Description and limitations
Basic	fB 2	Max 2	Formation manoeuvring must be smooth and progressive with slow changes in pitch and roll. Bank and pitch angles must not exceed 30°.
	fB 4	Max 4	
	fB U	Unlimited	
Intermediate	fl 2	Max 2	Formation manoeuvring must remain smooth and progressive and can entail increased pitch and roll rates. Bank and pitch angles must not exceed 60°.
	fl 4	Max 4	
	fl U	Unlimited	
Advanced	fA 2	Max 2	Formation manoeuvring is unlimited and includes formation aerobatics.
	fA 4	Max 4	
	fA U	Unlimited	

Formation category evaluations

- 7.2. DAEs **shall** satisfy themselves that the DA applicant has completed a period of formation training prior to being assessed for a formation DA. As a minimum, this **should** include a check of the applicant's logbook and consideration of the applicant's formation currency.
- 7.3. The recommended level of formation authorisation **should** be dependent on the previous formation experience level of the applicant, the extent and level of the training carried out, and the applicant's performance during the evaluation. The applicant **must** demonstrate sound situational awareness and adherence to SOP's during the evaluation³⁵.
- 7.4. Before any unlimited formation authorisation is recommended, the applicant **must** have extensive previous formation experience or **must** have demonstrated a consistently high standard of ability over a number of display seasons at a lower level of authorisation.
- 7.5. A formation evaluation (whether initial or upgrade) **must** include a flight evaluation and **must** include the elements in the following paragraphs.
- 7.6. Where possible the DAE **should** fly with the applicant (either in the same aircraft or as a formation member) to further assess and understand the applicant's capability during either work-up or evaluation.
- 7.7. During a formation evaluation flight, the DAE can conduct the evaluation from the ground, fly as the formation leader³⁶ or, if the applicant's aircraft is suitably equipped, with the applicant.
- 7.8. It is recommended that initial formation manoeuvring be carried out at medium altitude to confirm the applicant's ability before conducting manoeuvring at display height. However, before a recommendation is made, representative manoeuvring **must** be carried out at display height.

³⁵ The DAE **shall** ensure that applicants for formation DA endorsements are familiar with routine formation radio calls and visual signals such as those to be used in the case of communications failure, etc.

³⁶ If assessing close line astern, flying as formation leader is not a valid option for the DAE. It may be considered more suitable to fly as a formation member (e.g. as number 3 with the applicant flying as number 2) so the applicant can be observed flying in this position.

- 7.9. Having completed an assessment, the DAE **should** make a recommendation using form SRG 1300. The recommendation **must** include a breakdown of the applicant's previous formation training / experience and workup prior to evaluation.

Close formation flying – up to 4 Aircraft

- 7.10. Before a DAE recommends an applicant for a 'Close Formation flying with up to 4 aircraft' authorisation³⁷, the applicant **must** show a clear understanding of the basic principles of formation flying including:
- a) Formation briefing and walk through requirements
 - b) The principles of safely joining into Close Formation
 - c) The safe escape manoeuvre if the join-up is incorrect
 - d) The break from Close Formation and the rejoin
 - e) The effects of inertia.
 - f) Assessment of closing speed
 - g) Throttle handling³⁸
 - h) Clear definition of the position cues for the three basic formation positions: echelon starboard, echelon port and line astern, in relation to the aircraft being flown in the evaluation
 - i) Procedures for moving safely from one formation position to another
 - j) The executive commands for changing formation
 - k) The safety aspects and routine of changing formation when more than two aircraft are involved
 - l) The need for regular monitoring of aircraft parameters, particularly engine temperatures, pressures and fuel contents, and the timing of these airmanship checks
 - m) Aircraft emergency procedures and handling when in formation
 - n) The actions in the event of losing sight of the lead aircraft and / or other aircraft used for formation reference

³⁷ Subject to an applicant's experience, a DAE **may** consider formation with '2 aircraft' more appropriate than 'up to 4 aircraft' and the recommendation **should** be made accordingly.

³⁸ If appropriate, the differences between jet and piston engine handling and response **must** be understood by the applicant.

- 7.11. The flight **should** consist of at least two aircraft and **should** cover the following minimum requirements:
- a) A formation brief, including walk-through, as required by this CAP
 - b) An echelon pairs take-off (if appropriate)
 - c) Basic formation manoeuvres³⁹
 - d) Change of formation position in straight and level flight and moderate banked turns, appropriate to the level of approval sought
 - e) Practice break outs and rejoins from both echelon positions in straight and level flight and moderate banked turns
 - f) Emergency break outs during manoeuvres
 - g) Confirmation that the applicant is carrying out airmanship checks (fuel calls, etc)
 - h) A Close Formation visual run in and break into the visual circuit (if appropriate)
 - i) A thorough formation debrief to identify any areas for improvement which the leader or formation members may have identified

Close formation flying – unlimited aircraft

- 7.12. Before a DAE recommends an applicant for an 'Unlimited formation member' authorisation, in addition to the basic principles of formation flying listed above, the applicant **must** be able to demonstrate an in-depth knowledge of the skill and discipline required for formation flying supported by extensive evidence of formation flying experience⁴⁰.

³⁹ Within the constraints of the aircraft limitations and performance, the manoeuvres **should** include straight and level, climbing, descending and turning at both high and low speeds / power settings in echelon, line astern and line abreast as appropriate.

⁴⁰ Holding a formation lead DA for up to four aircraft would be one way of fulfilling this requirement.

Close formation leading – up to 4 aircraft

7.13. Before a DAE recommends an applicant for a 'Close Formation leading with up to 4 aircraft' authorisation⁴¹ the applicant **must** be able to demonstrate the following:

- a) Adequate experience of flying as a formation member in addition to suitable training in formation leading
- b) A detailed knowledge of the formation briefing requirements laid out in this CAP
- c) A detailed understanding of the requirements and recommendations specific to formation flying set out in this CAP
- d) A high level of awareness of their responsibilities as a leader specifically in relation to:
 - i) the need to fly smoothly and with consideration for the other formation members
 - ii) the use of power and the power margins the leader needs to allow for other formation members, particularly when manoeuvring and where the formation contains more than one aircraft type
 - iii) terrain clearance, lookout and positioning relative to the display line for all formation members
 - iv) ensuring that the lateral separation minima are maintained with respect to the aircraft nearest the crowd line
 - v) the actions to be taken in the event that one or more wingmen lose sight of the leader and / or other formation members
 - vi) height with regard to ensuring that the lowest member of a formation can comply with the required minimum display height
 - vii) actions in the event of an emergency

⁴¹ An application for a formation leading authorisation will not be considered unless the applicant already holds, or is recommended for, a formation member authorisation.

- e) The applicant **must** brief and lead a formation with the DAE acting, ideally, as the applicant's wingman or flying in the applicant's aircraft. The briefing **must** cover all required aspects, particularly safety precautions, in a logical manner and include a walkthrough of the planned display routine or flypast
- f) The in-flight portion of the evaluation **must** include an assessment of the applicant's leading abilities in all normal and display related manoeuvres including, if appropriate, formation aerobatics
- g) The applicant **must** demonstrate the ability to clearly communicate by radio and hand signals to formation members

Close formation leading – unlimited aircraft

- 7.14. Before a DAE recommends an applicant for an 'Unlimited formation lead' authorisation the applicant **must** be fully conversant with and demonstrate an in-depth knowledge of the skill and discipline required for formation flying supported by extensive evidence of formation flying and formation leading with up to four aircraft. The DAE **should** also take into consideration the content of SOPs used and the quality and thoroughness of the applicant's briefings before recommendation to the CAA.

Chapter 8

Display Authorisation - Tailchase (t)

Tailchasing with up to 4 (t4) aircraft

- 8.1. An application for tailchase authorisation will not be considered unless the applicant already holds, or is recommended for, a formation member authorisation.
- 8.2. The manoeuvres conducted during tailchases must be in accordance with the most restrictive DA in the tailchase.
- 8.3. Before a DAE recommends an applicant for a tailchasing authorisation⁴², the applicant **must** demonstrate awareness of and competence in the following:
- a) The positions to be flown
 - b) The use of 'lead and lag' to manage appropriate safe spacing
 - c) Assessment of separation distances and rate of closure
 - d) The dangers of encountering another aircraft's wake turbulence, how to avoid it, and the subsequent actions to be taken in the event of a wake induced upset
 - e) Loss of leader (or aircraft ahead) / loss of situational awareness procedure
- 8.4. Additionally, the applicant **must** successfully carry out a realistic tailchase at medium level and at a representative display height during the in-flight portion of the evaluation.

⁴² Subject to an applicant's experience, a DAE **may** consider tailchase with '2 aircraft', or '3 aircraft', more appropriate than 'up to 4 aircraft' and the recommendation **should** be made accordingly (t3 for tailchases of up to three aircraft for example).

Tailchase lead

- 8.5. An application for a tailchase lead authorisation will not be considered unless the applicant already holds, or is recommended for, a tailchase member authorisation and a formation leading authorisation.
- 8.6. Before a DAE recommends an applicant for a 'tailchase lead' authorisation the applicant **must** demonstrate consideration of the following during the pre-flight briefing:
- a) Maximum speeds and power to be used
 - b) Maximum 'g' loading (both positive and negative)
 - c) Type of manoeuvres used in tailchasing
 - d) Consideration of other formation members
 - e) The emergency and loss of leader procedures
- 8.7. The applicant **must** demonstrate the ability to satisfactorily brief, lead, and debrief a representative tailchase.

Aerobatic tailchases

- 8.8. To fly or lead a tailchase with aerobatic manoeuvres, a pilot **must** hold the appropriate aerobatic skill level and **must not** be limited to non-aerobatic tailchase on their DA.

Chapter 9

Display Authorisation – Groups and Categories

Aircraft groups and categories

9.1. The following table illustrates the Display Authorisation aircraft groups and categories.

Description	Group	Category	Description
Single Engine Piston, Turbo Prop & Electric Aeroplanes	SE	A	≤200 hp (shp) / 149 kW
		B	201 hp (shp) / 150 kW to ≤600 hp (shp) / 447 kW
		C	>600 hp (shp) / 448 kW
Multi Engine Piston, Turbo Prop & Electric Aeroplanes	ME	D	≤300 hp (shp) / 223 kW total
		E	301 hp (shp) / 224 kW to ≤600 hp (shp) / 448 kW <u>total</u>
		F	>600 hp (shp) / 448 kW <u>total</u> , single pilot
		Z	>600 hp (shp) / 448 kW <u>total</u> , multi-pilot/crew
Jet Powered Aeroplanes	JPA	G1	Straight wing, single engine jet aircraft
		G2	Swept wing, single engine jet aircraft
		H1	Straight wing, multi engine jet aircraft
		H2	Swept wing, multi engine jet aircraft
Helicopters	HEL	L	Helicopters
Gyroplanes	GYR	M	Gyroplanes
Electric vertical take-off and landing	EVTOL	X	Electric vertical take-off and landing aircraft by type ⁴³
Sailplanes, Hang Gliders and Paragliders	GLI	N	Sailplanes ⁴⁴
		O	Hang gliders

⁴³ Pilots seeking a DA in EVTOL aircraft **should** contact CAA GAU to agree a suitable DAE.

⁴⁴ Pilots of sailplanes fitted with engines (TMGs, SLSSs, SLMGs, etc) are required to hold a Cat A DA endorsement if the engine is used during display.

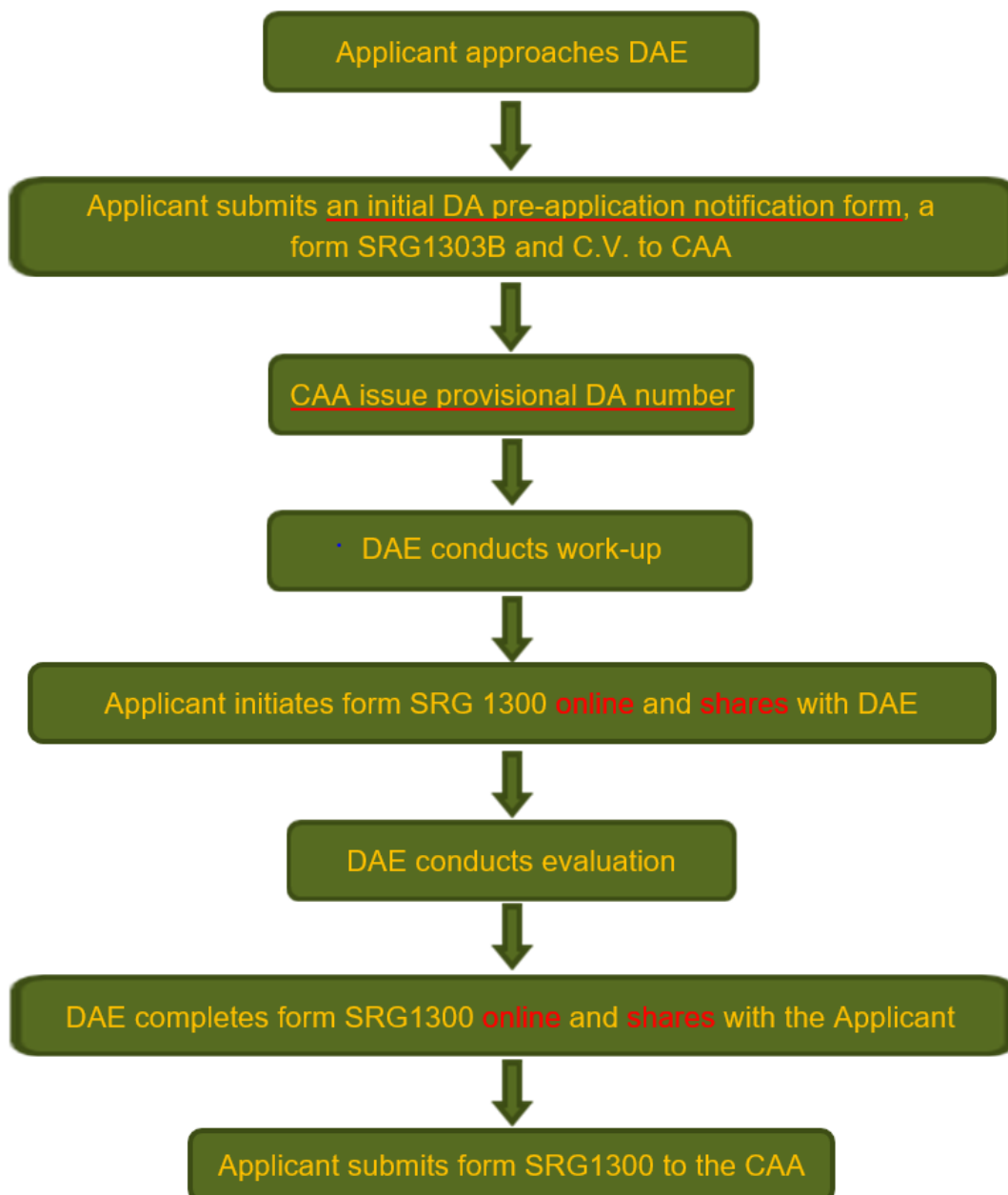
Microlight Aeroplanes	MLA	P	Paragliders
		T	Microlights with weight shift control
		U	Microlights with three-axis control
		V	Microlights with hybrid control
Powered Parachutes, Powered Paragliders, Powered Hanggliders	LPA	W1	All types of trike unit powered parachutes
		W2	All types of foot launched powered paragliders
		W3	All types of foot launched powered hang gliders

All engine power ratings in this table are measured at Sea Level in ISA conditions.

Chapter 10

The Display Authorisation - initial application and issue

DA initial application



- 10.1. Once a DAE has agreed to mentor, train and evaluate a pilot, the applicant **shall** submit a completed Initial DA pre-application notification form, a C.V. detailing flying qualifications and experience, and a completed form SRG 1303B to the CAA.
- 10.2. Once received, the CAA will process the information and, if satisfactory, issue a provisional DA number so that the proposed DA application can continue.
- 10.3. Following DA mentoring and training, and once the DAE is content that the applicant has reached the required standard, an evaluation for the issue of a DA **may** be carried out. If the outcome of this evaluation is satisfactory the following **should** be undertaken:
 - a) The **applicant** completes the personal details section of form SRG 1300 and shares it with the **DAE**
 - b) The **DAE** completes the narrative and recommendation and returns the completed form SRG 1300 to the **applicant**
 - c) The **applicant** submits form SRG 1300 to the CAA for consideration along with online payment⁴⁵
- 10.4. Provided the applicant has met the requirements set out above, the CAA will issue the DA.
- 10.5. If a pilot fails to achieve the required standard for an initial issue DA (be it competency, skill and / or fitness of character⁴⁶), the DAE **must** email the CAA to ensure that the reasons, and any recommended remedial actions, are comprehensively reported.

Issue of the Display Authorisation

- 10.6. A DA consists of the Display Authorisation, a Certificate of Test and Competence and a schedule of the categories or specific aircraft types authorised along with the type of display, minimum heights and the skill levels associated with any aerobatic / formation / tailchase

⁴⁵ Appendix A contains guidance and outlines responsibilities for the completion of forms.

⁴⁶ In line with the CAA Fitness of Character policy (see Appendix G).

endorsements⁴⁷. Additionally, any other specifics such as wing walking, balloon bursting, flour bombing etc. will be included in the 'other' column of the DA.

- 10.7. The initial issue of an unlimited level aerobatic DA will only be granted under specific circumstances, on a case by case basis, after written application to and consideration by the CAA GA Unit DA panel. Please contact the CAA GAU if this is likely to be requested.

Tyro DA (TDA) privileges

- 10.8. To help facilitate opportunities for newly qualified display pilots to gain experience and exposure within the Flying Display community, the CAA allows FDDs to offer up to 2 display items per Flying Display⁴⁸ to TDAs without incurring any extra charge if the additional item(s) move their display into a higher price band⁴⁹.
- 10.9. TDA privileges are not available for previously expired DAs.
- 10.10. TDA privileges expire after 25 months from initial DA evaluation.
- 10.11. The CAA will provide a TDA certificate automatically when initial DAs are issued. A copy of this certificate **must** be presented to a FDD as evidence of eligibility to qualify as a free TDA display item.

⁴⁷ For initial DA and DA upgrades, a 500 feet aerobatic and 200 feet non-aerobatic minimum is normally issued unless specific circumstances can be endorsed by DAE recommendation.

⁴⁸ The maximum number of TDAs permitted vary depending on the size of a Flying Display. For further details of TDA participation refer to CAP 403.

⁴⁹ It is permissible for a single display item to contain more than one TDA provided they are a constituted display formation or act. However, display items containing a combination of established DAs and TDAs do not qualify.

Chapter 11

Display Authorisations - Validity, currency, renewals, upgrades, exemptions and enforcement

General

- 11.1. This chapter focuses on DA validity, currency, renewals and upgrades and includes details of DA Exemptions and their applicability. It also details what constitutes a lapsed or expired DA and the actions to be taken by the CAA in the case of a DA suspension.

Behavioural and Attitudinal Fitness Assessment

- 11.2. A Behavioural and Attitudinal Fitness Assessment is required for all initial issue DAs and for renewals / upgrades only where there has been a change to previously declared information. When required, applicants **must** complete a form SRG 1303B and submit to the CAA alongside, or ahead of any submissions of form SRG 1300.

Validity of a DA

- 11.3. DAs are valid for 13 months. After 13 months, if a DA has not been renewed it is considered lapsed. A lapsed DA may be renewed by conducting a successful renewal evaluation. When renewing a lapsed DA, DAEs **should** consider recommending an increase to previously held minimum heights.
- 11.4. Initial issue DAs are valid for a period of 6 months⁵⁰. A minimum of two 6 month evaluations and a period of 12 months must have elapsed from the date of initial issue before a DA can be issued for 13 months⁵¹.

⁵⁰ Exceptionally, an initial DA may be issued for 13 months where the pilot has suitable previous experience.

⁵¹ Evaluations of an initial issue DA may be conducted by the same DAE to the point of issue of the first 13 month DA or for the first 2 years (whichever occurs later).

- 11.5. After 36 months, if a DA has not been renewed it is considered expired. An expired DA cannot be renewed and the pilot **must** apply for an initial issue DA as described in Chapter 10.
- 11.6. Display Pilots **must** attend a Pre-Display Season Symposium at least once every 4 years⁵². DAs will only be renewed where this requirement is met⁵³.

Currency

- 11.7. In addition to a valid Certificate of Test and Competence, a Display Pilot is required to meet certain currency requirements as depicted below before taking part in a Flying Display. Display routines flown at Flying Displays, and those flown during dedicated practices, may be used to maintain currency. Only practices that are representative of a typical display routine will count towards the pilots display currency. Lapsed currency cannot be regained by flying in a Flying Display.

a) The Display Pilot **must** satisfy the **minimum** applicable currency requirements prior to participating in an actual Flying Display.

Display aircraft	Within 90 days of date of display	Within 30 days of date of display
All except those included below	3 complete display routines flown or practised	1 complete display routine flown or practised in DA category
800 hp or greater, and / or 2730 kg or greater, and / or Jet powered	3 complete display routines flown or practised in DA category	1 complete display routine flown or practised in DA category

⁵² Initial DA holders **must** attend a Pre-Display Season Symposium within the first 24 months of point of issue of the DA.

⁵³ DAEs **may** attend either a DAE Seminar or a Pre-Display Season Symposium to satisfy this 4 year requirement.

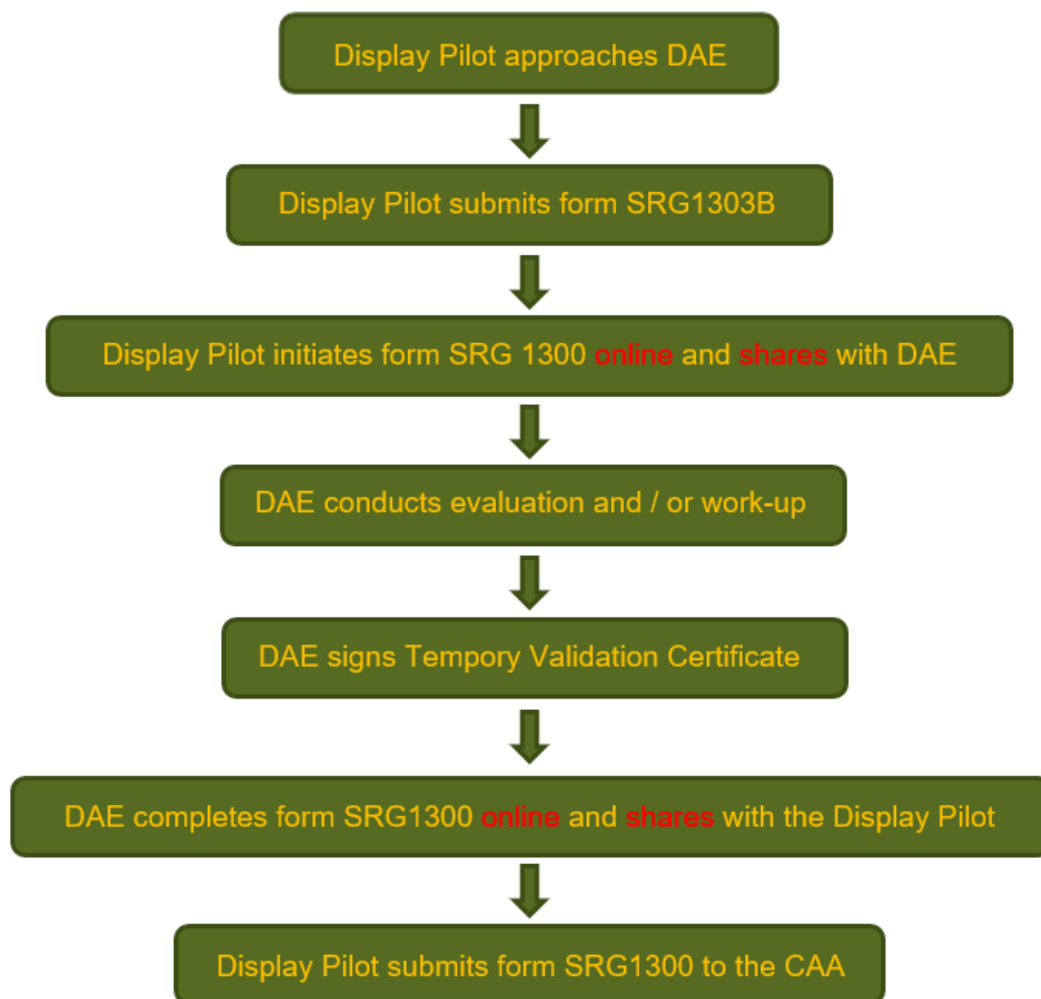
b) For aerobatic displays, the Display Pilot **must** satisfy the minimum aerobatic currency requirements prior to participating in an actual Flying Display.

Aerobatic Skill Level	Within 90 days of date of display	Within 30 days of date of display
Standard <u>Intermediate</u>	3 complete display routines flown or practised	1 complete display routine flown or practised <u>at appropriate aerobatic skill level in DA category</u>
Advanced Unlimited	3 complete display routines flown or practiced <u>at appropriate aerobatic skill level in DA category</u>	1 complete display routine flown or practised at appropriate aerobatic skill level in DA category

- 11.8. It is emphasised that the above requirements **should** be viewed as the minimum requirements for display currency and that pilots are encouraged, particularly during the winter months or pre-season work up, to undertake sufficient practise to ensure that a high standard of safety is maintained.
- 11.9. If a display routine is relatively new, or if a display pilot is at minimum currency, the DA holder **should** consider setting more restrictive minima⁵⁴ for practise and / or actual display purposes, until they are fully capable of conducting the display routine at their usual minima. For assistance in conforming with any such increase in minima and to facilitate appropriate monitoring and feedback, it is recommended that for Flying Displays, the FDD is notified accordingly.
- 11.10. Display Routines or practices **must** be recorded in the pilot's logbook.

⁵⁴ More restrictive minima could mean an increase in minimum height, an increase in minimum lateral separation distance between display aircraft and crowd line, or both.

Renewal

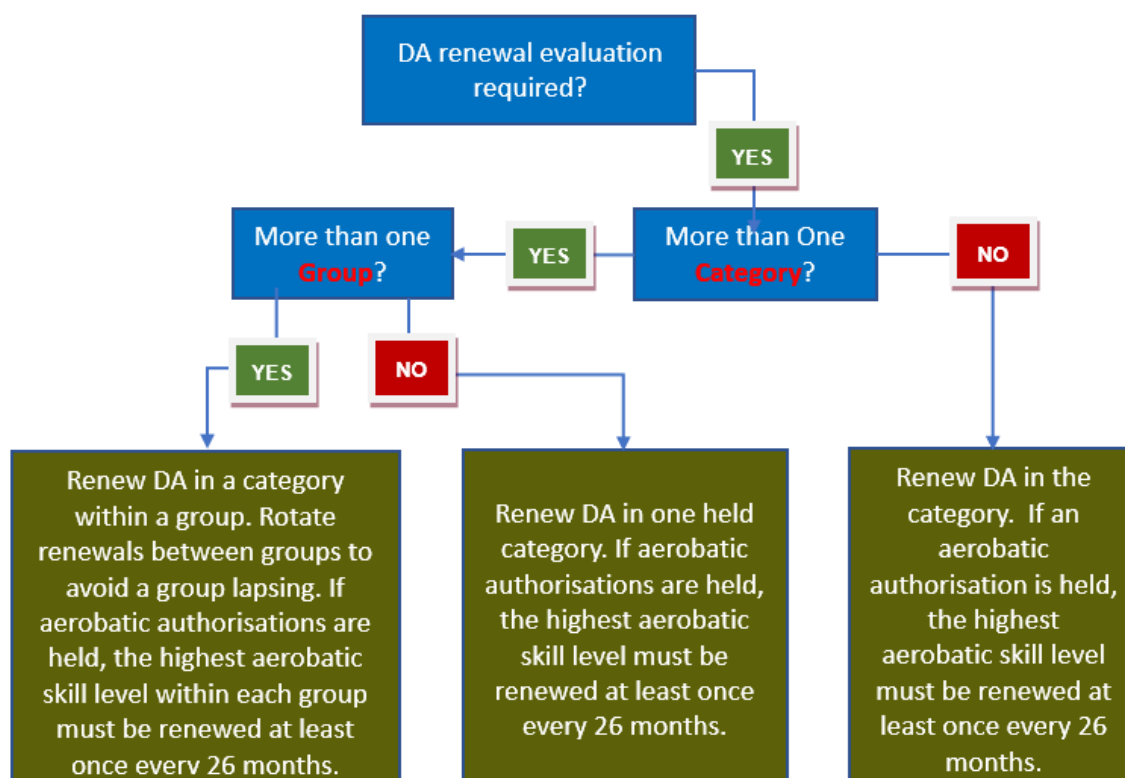


- 11.11. DA renewal evaluations must be conducted by a suitably qualified DAE.
- 11.12. On completion of a satisfactory renewal evaluation, the DAE **shall** only sign the Temporary Validation Certificate (valid for 28 days) on the existing DA⁵⁵. The Display Pilot will then submit the completed form SRG 1300 to the CAA.
- 11.13. DAEs **must** accurately record details and reasons for any renewal evaluation ‘retakes’ in recommendation narratives.

⁵⁵ The Record of Test and Competence is to be completed only by the CAA GA Unit.

- 11.14. If a pilot fails to achieve the required standard for a renewal or upgrade⁵⁶ (be it competency, skill and / or fitness of character), the DAE **must** ensure that the reasons, and any recommended remedial actions, are comprehensively reported by email to the CAA GAU. The applicant **must** contact the CAA GAU prior to arranging a further evaluation.
- 11.15. Any pilot who is denied a recommendation to obtain a DA by a DAE **may** apply to the CAA GAU for further consideration.

Renewal requirements



- 11.16. Every Display Pilot **must** complete a successful renewal evaluation within each rolling 13 month period⁵⁷ otherwise their DA will lapse⁵⁸.

⁵⁶ Following a failed renewal evaluation, and with immediate effect, a candidate **must not** exercise any of the privileges contained on a DA regardless of whether or not an existing DA contains a later expiry date.

⁵⁷ Initial issue DAs can only be renewed for a period of 6 months.

⁵⁸ Provided a DA is renewed in accordance with this paragraph, additional endorsements such as 'Stand on Wing', 'Limbo', etc do not require evaluation every 13 months and **should** be assessed at the DAE's discretion.

- 11.17. A display pilot authorised in one category **shall** renew their DA in the appropriate category. If an aerobatic authorisation is held, a renewal at the highest aerobatic skill level **must** be carried out at least once every 26 months.
- 11.18. A display pilot authorised in more than one category within one group **may**⁵⁹ renew their DA by rotating between each category. If aerobatic authorisations are held, the highest aerobatic skill level must be renewed at least once every 26 months⁶⁰.
- 11.19. A display pilot authorised in more than one group **must** renew their DA in a category within a group. To avoid a group lapsing, display pilots **must** renew by rotating between groups. If aerobatic authorisations are held, the highest aerobatic skill level within each group **must** be renewed at least once every 26 months⁶¹.
- 11.20. Where more than one group is held, any group that hasn't been renewed within a 26 month period **shall** be considered as lapsed. Display Pilots are required to 'unlock' the lapsed group before they can display in a category within that group. Provided the DA has not expired, the lapsed group may be 'unlocked' at any time by carrying out a renewal evaluation with an appropriately qualified DAE.

DA Renewal cycle

- 11.21. A display pilot is not permitted to have a DA evaluation (renewal and / or upgrade) conducted by the same DAE for more than two consecutive rolling years⁶². This requirement applies also for the renewal of a lapsed or expired DA.
- 11.22. Where geographical coverage and specialisation of DAEs means that this is not possible, the following options are available:

⁵⁹ At the DAE's discretion.

⁶⁰ G2 / H2, if held, **must** be renewed at least once every 26 months

⁶¹ G2 / H2, if held, **must** be renewed at least once every 26 months

⁶² A list of DAEs can be found on the CAA website [here](#). Note that this list is not exhaustive and contains only the names of those whose consent has been received by the CAA for the purpose.

- a) Renewal by the same DAE observed by the CAA⁶³
- b) Application to the CAA GAU for alleviation from the requirement⁶⁴

11.23. DA renewals **may** be anticipated and carried out up to 90 days prior to expiry dates without loss of continuity⁶⁵ as follows:

Date of evaluation	Expiry date of new DA
DA renewal evaluation carried out up to one month in advance of an existing expiry date.	DA issued with a validity of 13 months from the date of DA evaluation.
DA renewal evaluation carried out between one month and 90 days in advance of an existing expiry date.	DA issued with a validity of 12 months from the date of the previous DA expiry date.

DA Upgrades

- 11.24. Where a pilot seeks to upgrade the privileges of a DA, they **must** engage with a suitably qualified DAE for mentoring and guidance in fulfilling the necessary requirements.
- 11.25. Once a satisfactory upgrade evaluation has been carried out a completed form SRG 1300 **must** be submitted to the CAA by the Display Pilot. DAEs **may** sign the 28 day Temporary Validation Certificate to validate **existing** DA Schedule 1 privileges only⁶⁶.
- 11.26. All upgrade recommendations **must** specify the requested level. Appropriate evidence of competence **must** be included in the DAE's recommendation via form SRG 1300.
- 11.27. Following a successful upgrade application, the DA will be automatically renewed at the same time.

⁶³ Following such an observation, and with regard to any DAE geographical / specialisation constraint, consideration **may** be given to allow a DAE to evaluate the same display pilot for a further two renewals provided satisfactory written justification can be provided.

⁶⁴ Applications for retrospective exemptions will not be accepted.

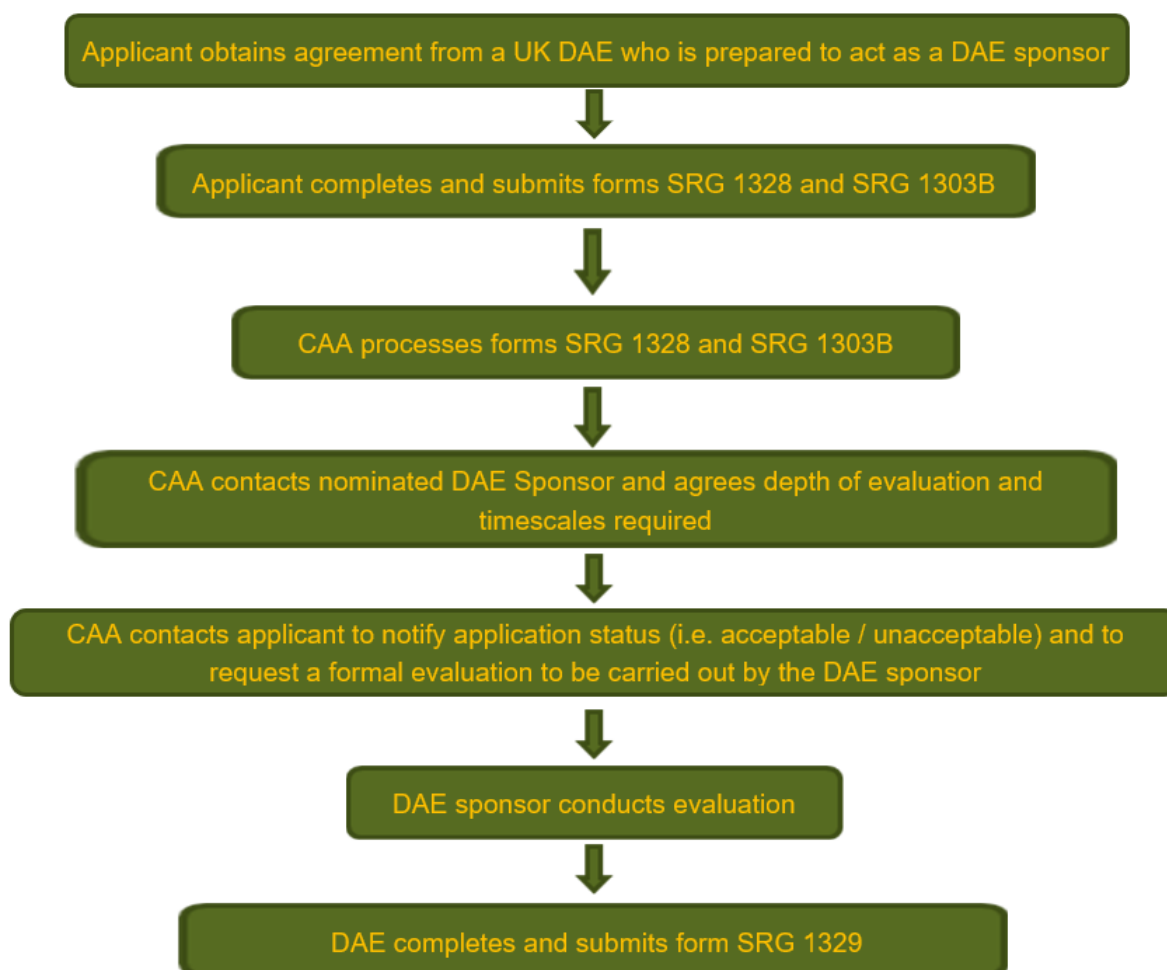
⁶⁵ Not applicable for initial issue 6 month DAs.

⁶⁶ The upgrade and Record of Test and Competence on a DA certificate can only be validated by the CAA GA Unit.

DA Exemptions

- 11.28. DA Exemptions may be applied for by non-UK civilian display pilots / teams and operators / pilots of Commercial Air Transport (CAT) aircraft.

Foreign civilian display pilot / team application



- 11.29. The initial stage of the process consists of the applicant obtaining an agreement from a suitable UK DAE⁶⁷ prepared to act as sponsor and recommend the issue of a DA Exemption. The FDD of the UK Flying Display at which the applicant has been invited to perform at may be consulted when identifying a suitable UK DAE.

⁶⁷ A display pilot is not permitted to have a DA Exemption assessment conducted by the same UK DAE for more than two consecutive evaluations.

- 11.30. Once in agreement, the applicant **should** complete form SRG 1328 and submit a completed form SRG 1303B and the other requested detail. For display teams, a completed form SRG 1328 and SRG 1303B is required for each pilot, including reserves.
- 11.31. The CAA **shall** process the application and contact the nominated DAE sponsor to obtain further confirmation and background information and to agree the depth of evaluation and timescales required.
- 11.32. The applicant (team leader in the case of a display teams) will be notified if the submission is acceptable within 28 days of receipt of all required information. If acceptable, the applicant **must** then arrange for a formal DA evaluation to be carried out by the nominated UK DAE sponsor.
- 11.33. The UK DAE sponsor **shall** carry out an evaluation using the CAP 1724 Appendix C checklist to the depth agreed with the CAA.
- 11.34. Following a successful evaluation the DAE sponsor **shall** submit a recommendation using form SRG 1329.
- 11.35. The CAA GAU **shall** issue a UK DA Exemption within 7 days (or as agreed) of receipt of an acceptable recommendation.

CAT pilots / operators

- 11.36. Details on applications for DA Exemptions for CAT aircraft can be found in CAP 403.

Enforcement

- 11.37. In circumstances where the CAA has issued a DA, the ongoing regulatory oversight and mentoring of display pilots will enable the early identification of any deterioration of attitudes and behaviours or practical abilities. Such circumstances **may** prompt enforcement action by the CAA which could include a requirement for additional mentoring, or in more serious cases, a rejected renewal, suspension or revocation of a current DA. If such a deterioration is observed, the CAA GAU **should** be contacted in the first instance.

The suspension of a DA – what happens next?

- 11.38. Where the CAA deems it necessary to provisionally suspend a DA, the DA holder will be contacted without delay.
- 11.39. At this point the CAA will investigate the circumstances leading to the provisional suspension in accordance with the FAiR System⁶⁸ at Appendix F. The CAA will contact relevant parties in order to establish the nature, cause and circumstances of the incident. In most cases this will include the FDD, members of the Flying Control Committee, pilots at the display, members of airfield staff and others present at the relevant time.
- 11.40. At this point the CAA **may** reinstate the provisionally suspended DA(s), or if further investigation is required, the pilot(s) will be invited to interview. If this is the case, formal written notification will be given.
- 11.41. Once the investigation is complete, a decision will be made as to whether any further action is required. Actions can include reinstatement, reinstatement following further training / evaluation by a CAA nominated DAE, suspension or revocation and will be considered with reference to FAiR System illustrated at Appendix F⁶⁹.
- 11.42. The CAA will keep pilots informed of progress at all stages of the process.

⁶⁸ FAiR®3 System , Version 3.3, April 2022 , © Baines Simmons Limited

⁶⁹ If such a safety breach results in external investigation such as by the police or AAIB, the result of the provisional suspension may be dependent on any additional evidence brought to light as a result of that investigation.

Chapter 12

Safety culture, reporting and continuous mentoring

General

- 12.1. DAEs **should** ensure they promote a 'just culture'. DAE / DA mentoring is a key part of that culture, along with generating an effective reporting culture and an awareness of HF issues that affect display pilots.

Generating a mentor – mentee relationship

- 12.2. The DAE / DA relationship is extremely important and **should not** be taken lightly. It is likely that during any DA mentoring, the pilot will seek to emulate the DAE. This generates a significant opportunity to set the display pilot up for success by helping and guiding them down the right path, setting appropriately high standards and assisting the pilot in achieving them, which will help cement the DAE / DA relationship.
- 12.3. In the early stages of DA mentoring, DAEs **should** take the opportunity to discuss post DA evaluation mentoring, support and continuing supervision of standards. The DAE **should** also offer an availability for ongoing advice and assistance when a pilot is having doubts or misgivings about their display flying. This can include suggesting liaison with other DAEs and, if required, direct contact with the CAA GAU.
- 12.4. Mentoring is a fundamental element of the Flying Display assurance mechanism and it is therefore vital that DAEs and display pilots maintain strong working relationships.

Promotion of a positive safety culture

- 12.5. A positive safety culture is the key to a safe Flying Display community. This culture is dependent on:
- a) the behaviours demonstrated by the CAA towards DAEs and display pilots

- b) the relationship developed between DAEs and display pilots
- c) the standards that are set
- d) the adherence to rules and regulations
- e) the encouragement of open and honest reporting in the interests of improving the display environment by allowing others to learn from errors and lessons learnt
- f) the relationship between DAEs, display pilots and the CAA

Safety reporting

12.6. There are several methods for reporting safety concerns, issues, incidents and indeed accidents. However, the most important aspect of safety reporting is that the issue is actually reported, even if an accident did not actually occur but it is thought that the display community (and maybe even the wider GA community) could benefit from the information. Common reporting methods are listed below:

- a) **Mandatory Occurrence Reporting (MOR).** An MOR **shall** be raised under the following circumstances:
 - i) Any time flight safety is compromised
 - ii) Any time it is felt others will benefit from the knowledge of a circumstance
 - iii) A breach of regulation

Occurrence reports may be submitted using the CAA Aviation Reporting Portal.

- b) **Confidential Reporting Programme (CHIRP).** Each member of the Flying Display community is encouraged to report any observed incidents or examples of errors involving HF to CHIRP who have a dedicated Flying Display reporting stream used to promulgate any lessons learned to the wider community⁷⁰.

⁷⁰ Note that CHIRP can take a reasonable amount of time to disseminate any information. If quick promulgation is required, additional channels **should** be considered.

- c) **Form SRG 1305.** Although the primary purpose of this form is post-event feedback from FDDs, the same form **may** be used by anyone wishing to report an issue in the interests of Flying Display safety. All reports will be treated confidentially.
- d) **Email.** If the incident does not fit into the MOR category, and there is a desire to disseminate information quickly, then email the CAA GAU entering 'Safety Occurrence Report' in the subject line. All emails will be treated confidentially and acted upon swiftly for the good of the display community.
- e) **Telephone.** If the issue is considered to be of an urgent nature, the CAA GA Unit can be contacted on 01293 573988⁷¹ if a discussion with the EOO or Duty Flight Standards Officer is required.

What to do if safety is being breached

- 12.7. Members of the Flying Display community **should** actively monitor standards throughout the display season. If any lapses in safety standards are perceived they **must** be brought to the attention of the parties involved and, if no improvement noted, the CAA GA Unit. If any lapses concerning display pilots are observed at a Flying Display, the FDD **should** be informed, followed by the CAA⁷².

⁷¹ Note, this is not the dedicated Flying Display STOP call number and as such is only manned during normal working hours.

⁷² DAEs **should** forward a report to the CAA GAU clearly stating the nature of the breach with supporting evidence, in order for the CAA to consider any course of action.

Chapter 13

Human Factors (HF) in Flying Displays

Background

- 13.1. HF issues impact all parts of the aviation environment and **should** be considered before, during and after Flying Displays by everyone involved.
- 13.2. Improving the understanding of how HF impacts on the safety of Flying Displays is a priority for the CAA. Increasing awareness of HF influences amongst the air display community led to the CAA commissioning two specific studies to look at, and better understand, Flying Display HF; the first being conducted by NATS: Human Factors in Flying Displays, and the second by the Health and Safety Laboratory: CAP 1694: Human Factors in Air Displays: Transfer of Behaviours and Error Path Study.
- 13.3. The outcomes of the two reports feed into our ongoing commitment to make discussion of HF a routine part of our engagement with the Air Display community. HF briefings will be an integral element of pre-season symposia, DAE seminars, DA evaluations and FDD accreditation courses and aim to ensure that experiences, insights and best practice, not only those of display participants / organisers, but also those from the wider aviation community are shared.
- 13.4. As part of awareness raising and, in line with the direction set out in the CAA HF strategy, an on-line area to act as a repository for HF material that will be of interest to the Air Display community has been developed. Any suggestions for additional material would be welcomed and should be directed to CAA GAU or [by email to human.factors@caa.co.uk](mailto:human.factors@caa.co.uk).

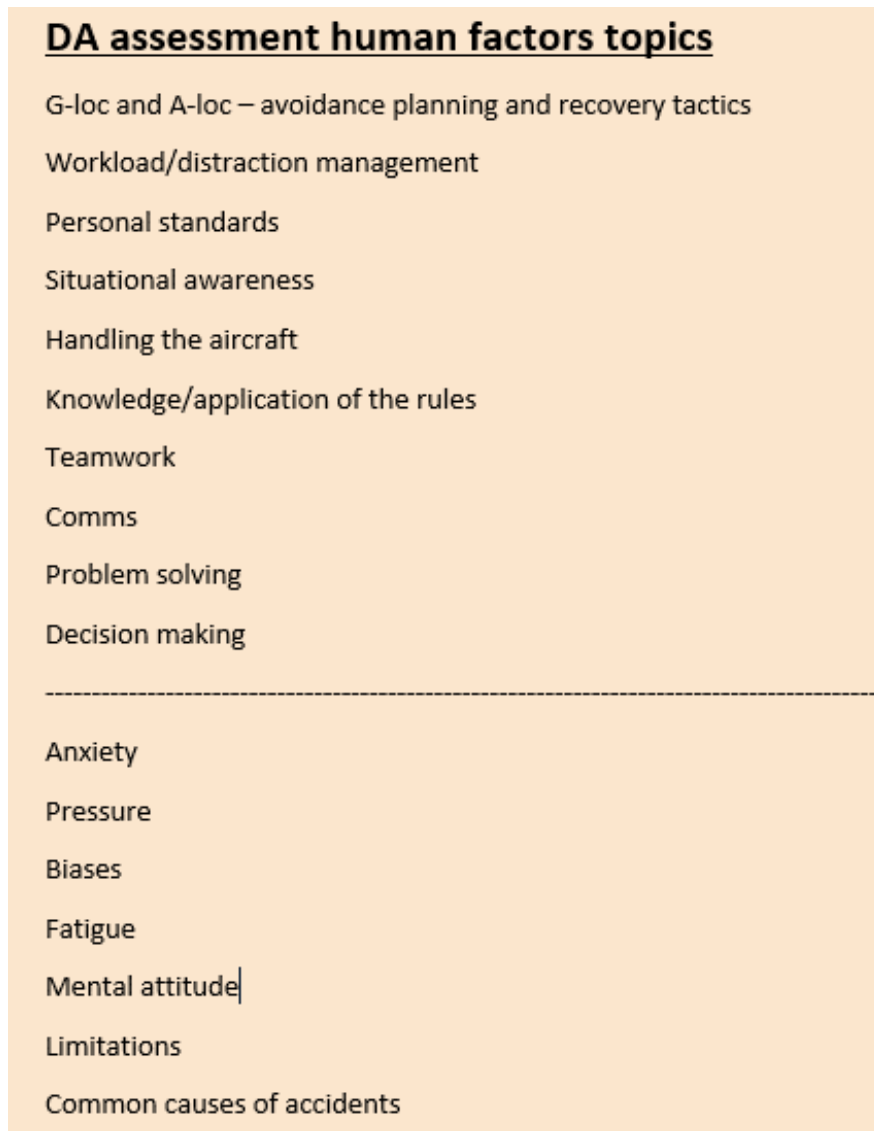
Human Factors and the DA Evaluation

- 13.5. An understanding of HF issues, the sharing of them and debriefing / analysis of issues arising during the display season will assist display pilots in improving their own abilities and maintaining safety. The DAE is

a key enabler of HF awareness via their relationship and engagement with the DA pilot.

- 13.6. HF topics worthy of covering initially and on a periodic basis during DA evaluations include the following:
- a) Common causes of Flying Display accidents and Flying Display related HF considerations / lessons learnt
 - b) Pressures associated with display flying. These include time pressure, commercial pressure, bad weather transits, or not wanting to disappoint the crowd
 - c) Adequate preparation. This includes paperwork, display routine, understanding the weather, procedures, appreciation of venue limitations, acknowledging personal and aircraft performance limitations
 - d) The physiological and cognitive limitations and biases imposed by display flying and how they will be managed
 - e) The potential for and types of error during Flying Displays
 - f) Practical strategies / measures that could be taken to mitigate the likelihood of error occurring before, during and immediately after a display
 - g) The potential for negative transfer of behaviours and how negative transfer can influence safety behaviour / the potential for error
 - h) Fatigue considerations, which may include transit flying to and from the venue and cumulative fatigue in conjunction with other flying work
 - i) Issues associated with conducting multiple displays on the same day, whether at single or multiple locations, in the same or multiple types
 - j) Experience levels and currency, acknowledging that low levels of experience may result in a lack of flexibility and a high level of experience may make pilots complacent
 - k) An acknowledgement that HF risks are dynamic and need constant re-evaluation. This includes being comfortable with withdrawing from a display if the risk is considered to be too great
 - l) The importance of a pilot being able to reflect on their own attitudes / skills and the ability to constructively critique their own performance

- 13.7. It is recommended that DAEs produce and use an HF crib sheet, such as the example below, to prompt discussions during DA Evaluations.



Flying Display HF course

- 13.8. The online Air Display HF course is a one-off requirement and once completed HF will be covered as set out below. Course completion is mandatory prior to the CAA issuing an initial DA. For access to the course [see the CAA “Human factors in air displays” website page.](#)

HF in Flying Displays

- 13.9. To ensure HF in Flying Display experiences, insights and best practice are continued to be exposed to the wider display community, AFDDs, DAEs and DA holders **shall**:
- a) continue to have HF discussed at their respective DA Evaluations
 - b) continue to ensure they attend a minimum of one Pre-Display Season Symposia every 4 years⁷³.
- 13.10. Further information on HF in air displays is available on the CAA website: Human Factors in Air Displays. Additional sources of information on aviation related HF considerations includes the following:
- CAP 719 “Fundamental Human Factors Concepts”
- CAP 737 “Flight Crew Human Factors Handbook”

⁷³ DAEs may attend either a DAE Seminar or a Pre-Display Season Symposium to satisfy this 4 year requirement.

Appendix A

Guidance for the completion of forms

General

A1 This chapter details the forms and provides guidance on their completion.

Responsibilities

A2 An applicant for a DA is responsible for ensuring that they complete and submit an Initial DA pre-application notification form and a form SRG 1303B to the CAA prior to the commencement of any DA workup training for the initial issue of a DA.

A3 Applicants are responsible for ensuring that DAEs complete all forms in a timely and accurate fashion and to then submit them to the CAA within the prescribed timescales.

Forms and reporting

A4 Following an evaluation for an initial DA issue, or the renewal or upgrade of an existing DA, the DAE **shall** make a full written recommendation to the CAA on form SRG 1300.

DA issue – Initial / renewal / upgrade

A5 Following an evaluation for the initial issue of a DA, form SRG 1300 **shall** be completed as follows:

- a) The applicant **must** complete their personal details and then share the form with the DAE
- b) DAEs **shall**:
 - i) Only recommend what has been evaluated unless additional evidence supports a broader recommendation

- ii) Ensure that the recommendation is supported by a detailed and accurate narrative
 - iii) Be clear what it is that the DA certificate needs to reflect once issued
 - iv) Ensure the applicant's details are correct
 - v) Share the form back to the applicant
- c) **It is the applicant's responsibility** to ensure that the form SRG 1300 has been accurately completed, in particular the recommendations section, and to then submit the form to the CAA for consideration along with online payment.

Charges

- A6 Details covering the charges payable in respect of DA applications can be found in ORS 5 CAA Scheme of Charges (General Aviation).

Appendix B

Timescales

Forms

B1 The following table contains pertinent timescales relevant to forms:

Form	Timescale	Person Responsible
SRG 1300	To be received by the CAA within 14 days of evaluation	Applicant
SRG 1300	The CAA will process and issue DAs no later than 28 days after receipt	CAA GA Unit
SRG 1303B	To accompany SRG 1300 applications when required	Applicant

Display Authorisation Evaluators

B2 The following table contains pertinent timescales relevant to DAEs:

Timescale	Required action
24 months	Consecutive period of evaluations conducted by the same DAE
<u>36 months</u>	<u>Attended at least 1 DAE seminar within each 3 year period</u>
36 months	Period of a DAE's appointment

Display Pilots

B3 The following table contains pertinent timescales relevant to display pilots:

Timescale	Required action
6 months	Initial issue DAs are valid for a period of 6 months.
13 months ⁷⁴	A DA should be renewed prior to the expiry date on the DA certificate.
<u>24 months</u>	Initial DA holders must attend a <u>Pre-Display Season</u> Symposium within the first <u>24</u> months of validity.
3 Years	If a DA has lapsed by more than 36 months from the date of last evaluation it will have expired. The initial application process must be followed.
<u>4 years</u>	A DA holder must attend a <u>Pre-Display Season</u> Symposium an absolute minimum of once in every <u>4</u> -year period.

⁷⁴ DA renewals may be anticipated and carried out up to 90 days prior to expiry dates without loss of continuity.

Appendix C

DAE Evaluation Checklist

APPLICANT DETAILS														
Applicant's name					Applicant's DA number (if held)					Expiry date of existing DA				
Date of last symposium attendance														
Applicant's flying experience: Background flying experience civilian / military. Display experience specific to recommendation (formation / spinning etc)														
EVALUATION DETAILS														
Type of evaluation required			Initial issue / Renewal / Upgrade (delete as applicable)											
Evaluation date			Location					Start time			Finish time			
Aircraft type			Aircraft category			Skill level			Take-Off time			Landing time		
Comments: Comment on the overall presentation and conduct of the flight.														

Item	Topic	Guidance	SAT	UN SAT	N/A	Comments
<u>PRE-EVALUATION DISCUSSION AND DOCUMENTS CHECK</u>						
1	<u>Previous DAE engagement</u>	<u>Discuss any other DAE engagement, by the applicant, made in connection with the required evaluation and the explore the reasons for not continuing with that DAE(s).</u>				
2	Certificates and Ratings	Check pilot and aircraft documentation and / or SRG1327				
3	Aircraft	Check pilot's C of G calculation for evaluation flight.				
		Discuss specific airframe & engine limitations				
4	Location	If required, check that a valid Permission is in place to conduct the activity and brief accordingly. Brief any local restrictions.				
GROUND ASSESSMENT AND DISCUSSION						
5	Regulatory Knowledge	Discuss, as appropriate, applicable regulation including a thorough understanding of: - minimum lateral separation distances - minimum heights - acceptable profiles for arrivals and departures at Flying Displays				

Item	Topic	Guidance	SAT	UN SAT	N/A	Comments
6	Personal	Discuss any self-imposed limitations – wind limits, visibility limits, etc.				
		Discuss time management.				
7	Human Factors	Discuss Human Factors relating to display flying. Include examples.				
8	<u>Other Skill Levels</u>	<u>Discuss / assess the understanding of any skill levels held by the applicant (formation / aerobatic) other than those being evaluated on this occasion.</u>				
PRE-FLIGHT BRIEF AND DISPLAY PLANNING						
9	Display pilot's pre-flight brief	Is the pilot's brief clear and unambiguous? De-brief as required.				
10	Routine	Discuss the logic of manoeuvre string and energy management.				
		Discuss the planning of the manoeuvres in relation to G management.				

Item	Topic	Guidance	SAT	UN SAT	N/A	Comments
		Discuss manoeuvre gates and speeds.				
		Discuss the execution and pit-falls of wingovers and relevant precautions.				
		Discuss the execution and pit-falls of manoeuvres that pull through the vertical.				
		Discuss the execution and pit-falls of combined pitch and roll manoeuvres (barrel-rolls for example).				
11	Emergency planning	Discuss appropriate escape manoeuvres and how to identify when to use them.				
		Discuss asymmetric flight and the establishment of MMEDSs for the display manoeuvres used in the display routine.				
		Discuss actions to be taken in the event of systems failure: engine; radio; etc.				
12	Spinning	Check evidence of last spinning detail where appropriate.				

Item	Topic	Guidance	SAT	UN SAT	N/A	Comments
13	Variation	Assess the capability of the applicant to handle variations to the intended routine.				
14	Low level	Discuss stable flight requirements when conducting low level ops e.g. Flour Bombing, Limbo, Streamer cutting, etc				
15	Walkthrough	Discuss and highlight the importance of a walkthrough				
16	Pre-flight inspection	Discuss display specific areas to be checked as part of the pre-flight inspection.				
FLIGHT DEMONSTRATION						
17	Framing / positioning	Was the display positioned / orientated appropriately within the display area?				
18	Content	Was the presentation carried out as briefed?				
19	Adherence to limitations and minima	Did the applicant comply with minimum lateral separation distances?				
		Did the applicant comply with minimum height requirements? (Inside and outside of the display area)				

Item	Topic	Guidance	SAT	UN SAT	N/A	Comments
		Did the applicant comply with any other appropriate conditions / limitations?				
20	Timing	Did the applicant perform on time and within the allotted slot time?				
21	General Handling	Record observations concerning the applicant's general handling.				
22	Safety	Were there any safety concerns arising from the observed demonstration?				
DEBRIEFING						
23	'Retakes'	Were there any 'retakes'? If so, record details here.				

Page 89

Appendix D

Insurance

Display Authorisation Evaluator and CAA Third Party Liability Insurance

- D1 The Civil Aviation Authority (CAA) has in place an Aviation General Third-Party Liability Insurance Policy, which covers all third-party liability for bodily injury (including death) and property damage arising out of the performance of its statutory functions and duties.
- D2 This policy includes third party liability coverage for Display Authorisation Evaluators (DAEs) who are authorised by the CAA in accordance with Article 86(10) of the Air Navigation Order 2016 (ANO).
- D3 The extent of the CAA's third-party liability policy cover is limited to DAE's conducting such examinations or tests as required for the purposes of a decision by the CAA under Article 86(8) of the ANO⁷⁵.
- D4 For each evaluation conducted by a DAE, the extent of the policy cover will only apply to those activities performed by a DAE and approved by the CAA in accordance with the signed declaration on form SRG 1300.
- D5 Third party liability cover does not extend to any other mentoring or training of pilots conducted by DAEs in a private or commercial capacity.

⁷⁵ DAE tests include supervised Display Authorisation practice, prior to final evaluation.

Appendix E

The CAA, DAE Agreement

General

- E1 The Civil Aviation Authority is the competent authority of the UK for issuing a Display Authorisation (DA) in accordance with the requirements of Article 86 of the Air Navigation Order 2016 (ANO) and for the continuing oversight of DAs.
- E2 In accordance with Article 86(10) the CAA **may** authorise a person to conduct such examinations or tests for the purposes of this Article as it **may** specify. This paragraph therefore authorises DAEs to conduct evaluations on behalf of the CAA.
- E3 The Display Authorisation (DA) and Display Authorisation Evaluator (DAE) system is a key enabler in assuring the Secretary of State for Transport, through the CAA, of the safety of UK Flying Displays. DAEs acting on behalf of the CAA play a critical part in this process.
- E4 Therefore, the CAA will **expect** certain discipline, standards and activities of DAEs to ensure the safety of the public. Equally, DAEs can **expect** a certain level of support from the CAA when they discharge their duties on behalf of the CAA.

The Agreement

- E5 The CAA **expects** the following of each DAE:
- a) The maintenance of the highest possible display flying standards
 - b) The adherence to all rules and regulations, including this document and those pertaining to General Aviation and display flying
 - c) The sharing of experience and the imparting of knowledge to display pilots that fall under their supervision
 - d) A willingness to discuss and share HF considerations with the display flying community
 - e) Attend a DAE seminar at least once every 3 years
 - f) Regular engagement with the CAA GA Unit over matters pertaining to DAs and the DAE / DA system in general

- g) Engagement with the EOO regarding availability for observation
- h) A willingness to learn from each other
- i) The promotion of a 'just culture' amongst the display community in general, but particularly towards display pilots that fall under their supervision
- j) The timely and accurate completion of DA and DAE related forms
- k) Feedback to the CAA GA Unit regarding any Flying Display related matters

E6 DAEs can **expect** the following from the CAA:

- a) Support through the EOO for all matters relating to DA applications, renewals and upgrades
- b) Support in decision making regarding the suitability of new DA applicants
- c) Feedback from at least one DAE Observation visit every 3 years
- d) Timely communication of pertinent safety information in the event of any DA suspension where the CAA considers there are lessons to be learnt by the wider community
- e) Continued engagement when developing Flying Display matters and particularly the safety culture
- f) Third party liability insurance as detailed in Appendix D

I, the undersigned agree to the conditions stated above:

Signed:

Signed:

Date:

Date:

Civil Aviation Authority

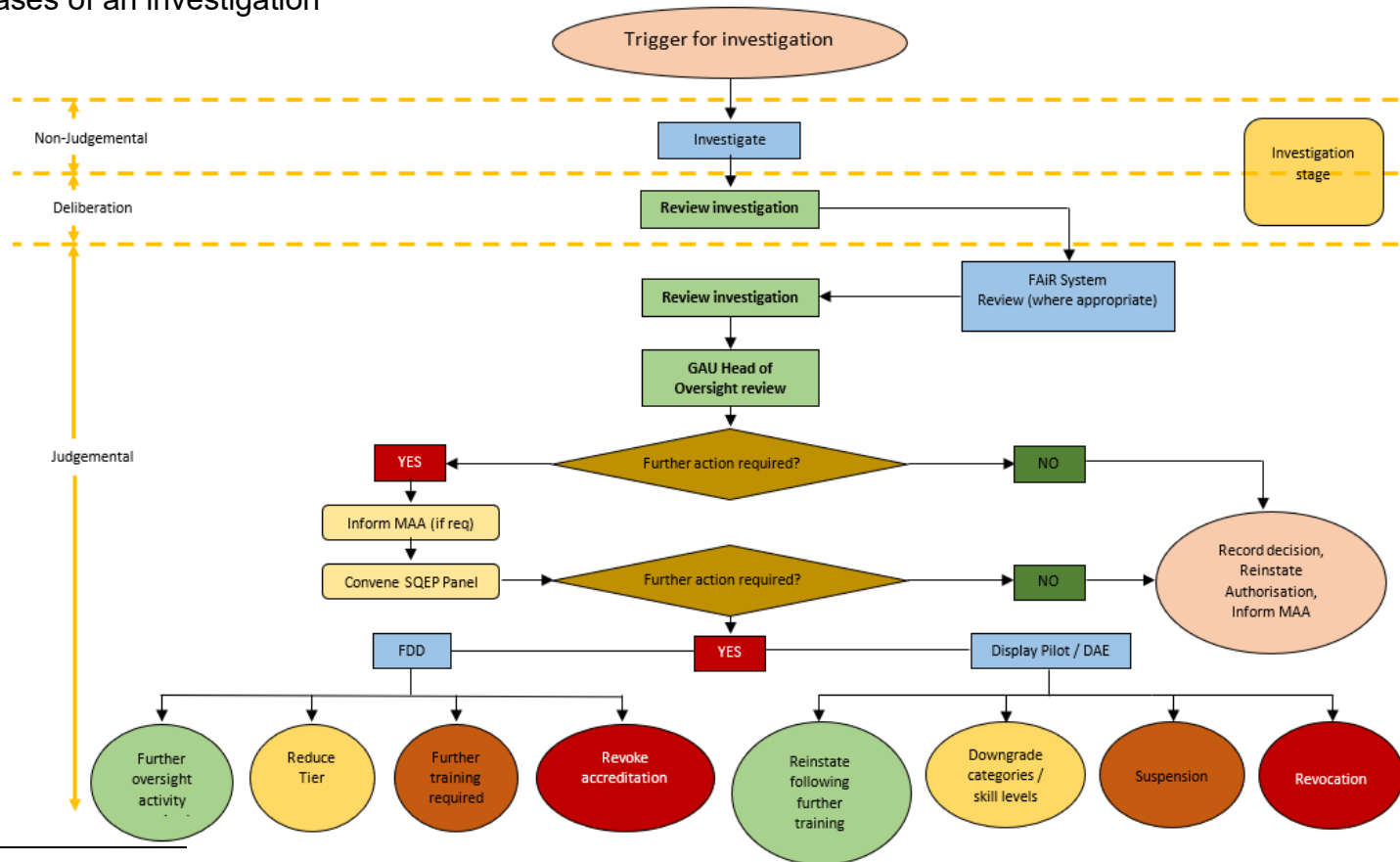
Evaluator

DAE number:

Appendix F

FAiR System

F1 Flowchart Analysis of Investigation Results (FAiR) System⁷⁶. Distinction between non-Judgmental and judgemental phases of an investigation

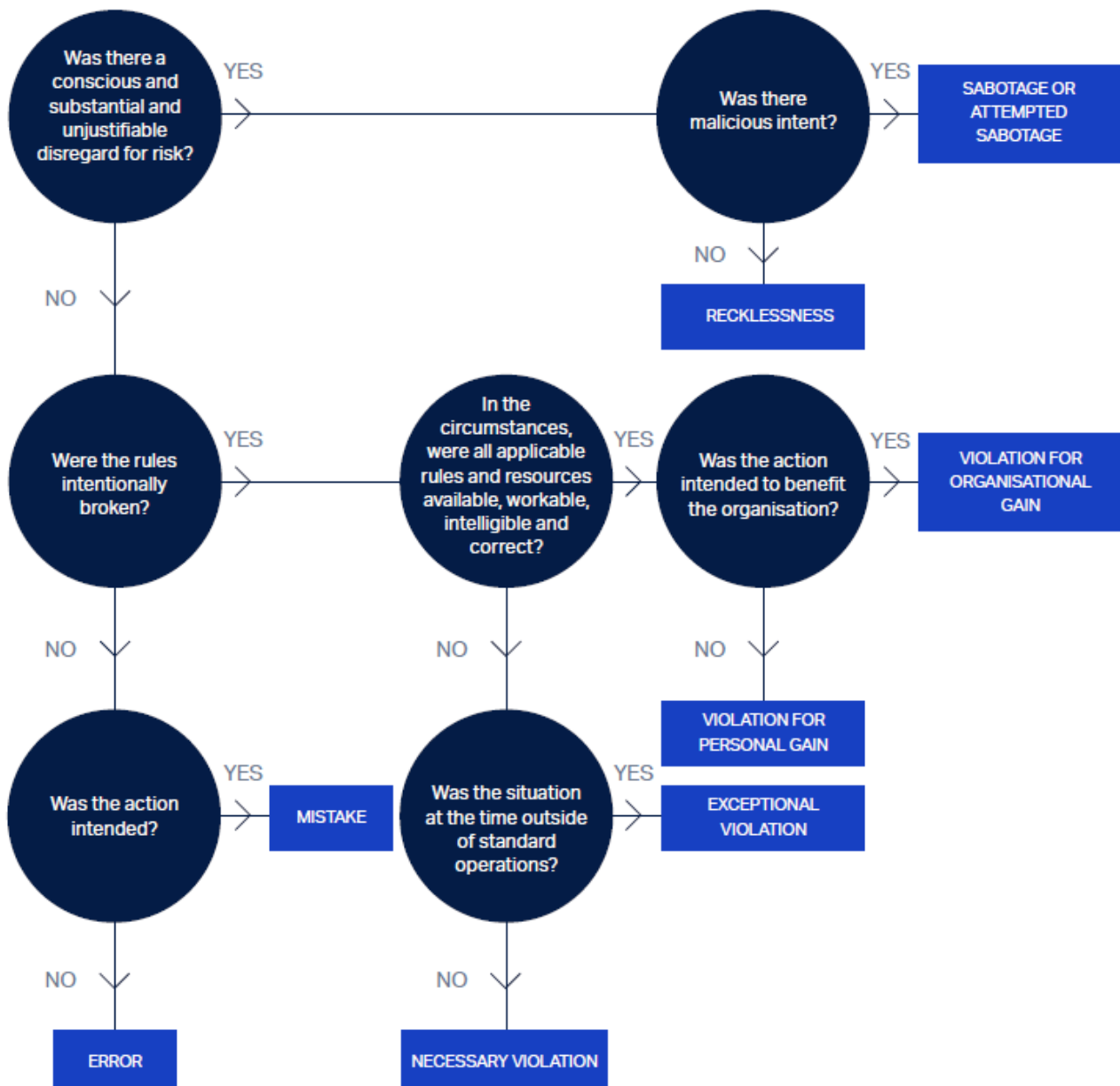


⁷⁶ FAiR@3 System , Version 3.3, April 2022 , © Baines Simmons Limited

F2 Just culture, behavioural types.

FAiR3 Behaviour Identification

START: Review the factual, non-judgemental, human performance oriented investigation data provided by your trained investigators



F3 Accountability framework⁷⁷

⁷⁷ The references and excerpts to FAiR in this chapter have been reproduced with the permission of the copyright holder, Baines Simmons Limited. Further information concerning the FAiR System can be found [by selecting the link at Appendix G](#).

Appendix G

Useful Links

Forms

Flying Display and Special Event or Unusual Aerial Activity application form	Apply
Initial DA pre-application notification form	Initial DA form
SRG 1300: Application for a Display Pilot Authorisation	SRG 1300
SRG 1303B: Application for fitness assessment for a flying display role	SRG 1303B
SRG 1305: Flying Display Director Post-Event Feedback	SRG 1305
SRG 1327: Pilots Certified Declaration for Submission to the Flying Display Director	SRG 1327
SRG 1328: UK DA Exemption Application	SRG 1328
SRG 1329: UK Display Authorisation Exemption evaluation form	SRG 1329

Publications

Air Navigation Order 2016 (as amended)	ANO
CAP 1694: Human Factors in Air Displays	CAP 1694
CAP 403: Flying Displays and Special Events: Safety and Administrative Requirements and Guidance	CAP 403
CAP 719: Fundamental Human Factors Concepts	CAP 719
CAP 737: Flight Crew Human Factors Handbook	CAP 737
NATS Human Factors in Flying Displays	Human Factors in Flying Displays
ORS 5 CAA Schemes of charges	ORS 5
Regulatory Article (RA) 2335	RA2335
Rules of the Air Regulations 2015 (as amended)	ROTA
Standardised European Rules of the Air	SERA

Contacts

CAA GAU	ga@caa.co.uk
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Reporting

CAA Air Display HF repository	Repository for HF material
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CAA Aviation Reporting Portal	Occurrence Reporting
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CAA HF Strategy	HF Strategy
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CAA make a report or complaint	Reports or complaints
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Confidential Human Factors Incident Reporting Programme	CHIRP
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References

Baines Simmons	FAiR
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CAA Fitness of Character Policy	Fitness of Character
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CAA General Aviation Unit (GAU) website	GAU
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CAA HF strategy	HF Strategy
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CAA Human factors in air displays	Human factors in air displays
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List of authorised display pilot evaluators	DAEs
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