CAP 1724 Edition 6 2024 significant changes

Background

This document has been produced in order to highlight proposed changes in edition 6 of CAP 1724. The aim is make the consultation process easier and less time consuming by providing an alternative to reading through the entire CAP in order to find proposed changes. The full draft version of edition 6 of CAP 1724 has also been offered for consultation for those who prefer to view the complete document and for context if required for those who chose to use this document.

Changes include:

Chapter 1 – General Rules and Limitations

1.2   Pilots have specific responsibilities with regard to their participation in Flying Displays in the UK. The ANO[1] 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[2, 3]

1.15   All formations at Flying Displays **must** be briefed prior to flying[4] and the brief **should** include a walkthrough. The following **must** be briefed as a minimum:

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[1] Article 86(2), The Air Navigation Order 2016 refers.

[2] In exceptional circumstances, the CAA **may** issue an Exemption to the requirement to hold a DA. Applications for DA Exemptions should be made using form SRG 1328

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

[4] Where possible, formation leaders should circulate pertinent pilots notes prior to their formation briefing.

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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)[5]

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) <u>Actions in the event of a STOP or Terminate call</u>

1.17 A flight of individual aircraft in loose trail (>200 metres separation) with manoeuvres restricted to gentle turns is not a tailchase and a formation /

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[5] 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.

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tailchase DA is not required. <u>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.</u>

1.24   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 conspicuity[6].

1.31   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 <u>slot</u>. Unbriefed and unexpected manoeuvres are equally, if not more, dangerous during arrivals and departures to and from a Flying Display as those carried out during a display. Pilots of civilian aircraft who do not hold a DA<u>are not permitted to use the </u>Military Long Term SERA 5005(f)(2) Permission <u>over</u> MOD Occupied Property.

Chapter 2 – The Display Authorisation Evaluator (DAE)

2.6   DAEs are appointed for <u>a</u> 3 year <u>period</u>.

a)

2.7   The CAA organises <u>one</u> 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.

2.9   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

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[6] <u>Use of transponders for formations **shall** be briefed by the formation leader.</u>

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b) Attended at least 1 DAE seminar meeting in the previous 3 year appointment period

c) Supported the CAA in improving regulation and the safety of the sector

d)

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 standards[8]

Chapter 5 – Display Authorisation evaluation process

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.

Chapter 6 – Display Authorisation – Aerobatic (a)

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	aI	aA
Stall turns	aS	aI	aA
Inside circular loops	aS	aI	aA

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[8] 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.

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

Loops with roll off the top	aS	aI	aA
Cuban 8	aS	aI	aA
Single aileron roll	aS	aI	aA
Single barrel roll	aS	aI	aA
Erect spins of up to 2 turns		aI	aA
Stall turns with rolls in the vertical climb and / or dive		aI	aA
Inside half loops		aI	aA
Reverse Cuban 8		aI	aA
Square loops		aI	aA
Slow rolls		aI	aA
Hesitation rolls		aI	aA
Positive flick roll		aI	aA
Sustained inverted flight		aI	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 table illustrates the skill levels required to perform the listed manoeuvres.

a) Spins

b) Stall turns

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c) Loops and eights

d) Rolls

e) Inverted flight

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

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

applicant already holds, or is recommended for, a formation member

Inside circular loops	aS	aI	aA
Loops with roll off the top	aS	aI	aA
Cuban 8s		aI	aA
Inside half loops		aI	aA
Reverse Cuban 8s		aI	aA
Square loops		aI	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

authorisation.

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

Sustained inverted flight		aI	aA

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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 authorisation[9,] the applicant **must** demonstrate awareness of the following during the pre-flight briefing:

     a)   The positions to be flown

     b)   How the position can be maintained by use of 'lead and lag' and the need to follow the leader's flight path without over anticipating a manoeuvre

     c)   Assessment of separation distances and rate of closure

     d)   The avoidance and dangers of encountering another aircraft's slipstream and the subsequent actions to be taken

     e)   Loss of leader (or aircraft ahead) procedure

Chapter 9 – Display Authorisation – Groups and Categories

Aircraft Categories for Display Authorisations[10]			
Description	**Group**	**Category**	**Description**
Single Engine Piston & Electric	SEPE	A	≤200 hp / 149 kW
		B	201 hp / 150 kW to ≤600 hp / 447 kW
		C	>600 hp / 448 kW
Multi Engine Piston & Electric	MEPE	D	≤300 hp / 223 kW total
		E	301 hp / 224 kW to ≤600 hp / 448 kW

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[9] 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).

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

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		F	>600 hp / 448 kW, single pilot
		Z	>600 hp / 448 kW, 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
Turbo Prop Aircraft	TPA	I1	Single engine turboprop aircraft ≤600 shp
		I2	Single engine turboprop aircraft >600 shp
		J	Multi engine turboprop 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[11]
Sailplanes, Hang Gliders and Paragliders	GLI	N	Sailplanes[12]
		O	Hang gliders
		P	Paragliders
Microlight Aeroplanes	MLA	T	Microlights with weight shift control
		U	Microlights with three-axis control
		V	Microlights with hybrid control
Powered Parachutes, Powered Paragliders, Powered Hangliders	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

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

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

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Chapter 10 – Display Authorisation – initial application and issue

10.8   TDA privileges expire after 25 months from initial DA evaluation, whichever occurs first.

10.9   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.

Chapter 11 – Display Authorisation – Validity, currency, renewals, upgrades, exemptions and enforcement

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.

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

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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, and / or Turbo-prop	3 complete display routines flown or practised **in DA category**	1 complete display routine flown or practised **in DA category**

a) The Display Pilot **must** satisy the minimum aerobatic currency requirements preceding Flying Display.

Aerobatic Skill Level	Within 90 days of date of display	Within 30 days of date of display
Limited Standard	3 complete display routines flown or practised	1 complete display routine flown or practised **in DA category**
Intermediate, Advanced, Unlimited.	3 complete display routines flown or practised **in DA category**	1 complete display routine flown or practised at appropriate aerobatic skill level **in DA category**

11.13   DAEs **must** accurately record details and reasons for any renewal evaluation 'retakes' in recommendation narratives.

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 only[14].

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.

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

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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.

11.42   The CAA will keep pilots informed of progress at all stages of the process.

Chapter 12 - Safety culture, reporting and continuous mentoring

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 willing to act as mentors and, if required, direct contact with the CAA GA Unit.

Chapter 13 - Human Factors (HF) in Flying Displays

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 facilitation via their relationship and engagement with the DA pilot.

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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 email ga@caa.co.uk.

Appendix C
DAE Evaluation Checklist

APPLICANT DETAILS					
Applicant's name		**Applicant's DA number (if held)**		**Expiry date of existing DA**	
Applicant's address					
Applicant's email			**Applicant's mobile number**		
Applicant's full licence number		**Applicant's medical expiry date**		**Date of last DA / DAE 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
DOCUMENTS						
1	**Certificates and Ratings**	Check pilot and aircraft documentation and / or SRG1327				
2	**Aircraft**	Check pilot's C of G calculation for evaluation flight.				
		Discuss specific airframe & engine limitations				
3	**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 lateral separation distance Exemption conditions (if held) - minimum heights - acceptable profiles for arrivals and departures at Flying Displays				
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.				

Item	Topic	Guidance	SAT	UN SAT	N/A	Comments
		PRE-FLIGHT BRIEF AND DISPLAY PLANNING				
	Display pilot's pre-flight brief	Is the pilot's brief clear and unambiguous? De-brief as required.				
8	**Routine**	Discuss the logic of manoeuvre string and energy management.				
		Discuss the planning of the manoeuvres in relation to G management.				
		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).				
9	**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.				

Item	Topic	Guidance	SAT	UN SAT	N/A	Comments
	Spinning	Check evidence of last spinning detail where appropriate.				
13	**Variation**	Assess the capability of the applicant to handle variations to the intended routine.				
10	**Low level**	Discuss stable flight requirements when conducting low level ops e.g. Flour Bombing, Limbo, Streamer cutting, etc				
12	**Walkthrough**	Discuss and highlight the importance of a walkthrough				
15	**Pre-flight inspection**	Discuss display specific areas to be checked as part of the pre-flight inspection.				
FLIGHT DEMONSTRATION						
16	**Framing / positioning**	Was the display positioned / orientated appropriately within the display area?				
17	**Content**	Was the presentation carried out as briefed?				
18	**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)				
		Did the applicant comply with any other appropriate conditions / limitations?				

Item	Topic	Guidance	SAT	UN SAT	N/A	Comments
19	**Timing**	Did the applicant perform on time and within the allotted slot time?				
20	**General Handling**	Record observations concerning the applicant's general handling.				
21	**Safety**	Were there any safety concerns arising from the observed demonstration?				
		DEBRIEFING				
22	**Post-flight debrief**	Ask the pilot to self-debrief. Does the pilot's debrief accurately reflect what was observed? Were any areas of concern correctly identified? Discuss what went well and why. Discuss what didn't go so well and why. Ask the pilot to describe what they might do differently next time. Offer any suggestions for improvements as appropriate.				
Additional comments:						