



Pre-Display Season Symposium 2024





2024 Pre-Season



Flying Display Symposium

Evan Davies
Display Symposia Co-ord



Admin Brief



- **Intro**
- **Fire Assembly - Central door closure**
- **Alarms (Other)**
- **Security passes/Photography**
- **Smokers/vaping**
- **Phones/Wifi**
- **Toilets**
- **Accommodation (Keys)**
- **Teas and Coffees**
- **Feedback forms**
- **Workshop rooms**



Fork Supper & Social – Tech School



- 1800 start (Bar open 1730)
- Bar open until 2100
- Cash only
- Vegetarian/Gluten Free options available
- **Options to display presentational media**



Questions





Michael Macdonald

Head of CAA General Aviation Unit





Paul Sall

**CAA General Aviation Unit
Air Display Lead**

Paul.Sall@caa.co.uk



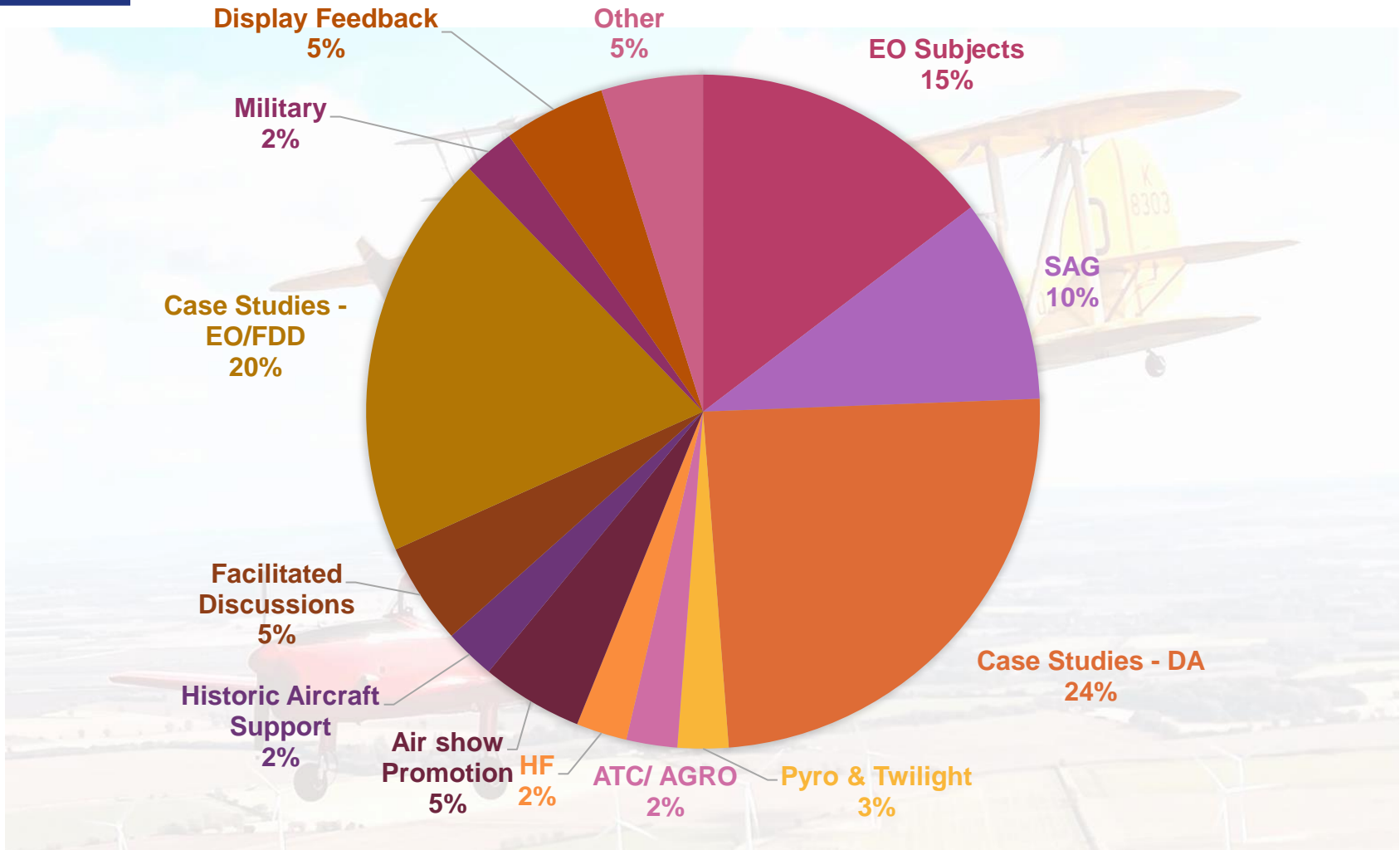


- **Aims of the symposium:**

- Regulatory feedback
- Safety awareness
- Human factors training
- Identification of lessons learnt and to disseminate best practice to DAEs, Display Pilots, Event Organisers and Flying Display Directors (FDDs).
- Provide the display community to share feedback with regulators.



2023 Symposia Survey





2024 Pre-Display Symposium

- Regulatory Feedback
- Case Studies - EO/FDD/DA
- EO Subjects
- SAG
- Case Studies
- Display Feedback
- Facilitated Discussions

Please Complete the 2024 Symposia Survey



Wing Commander Russ Lavis

&

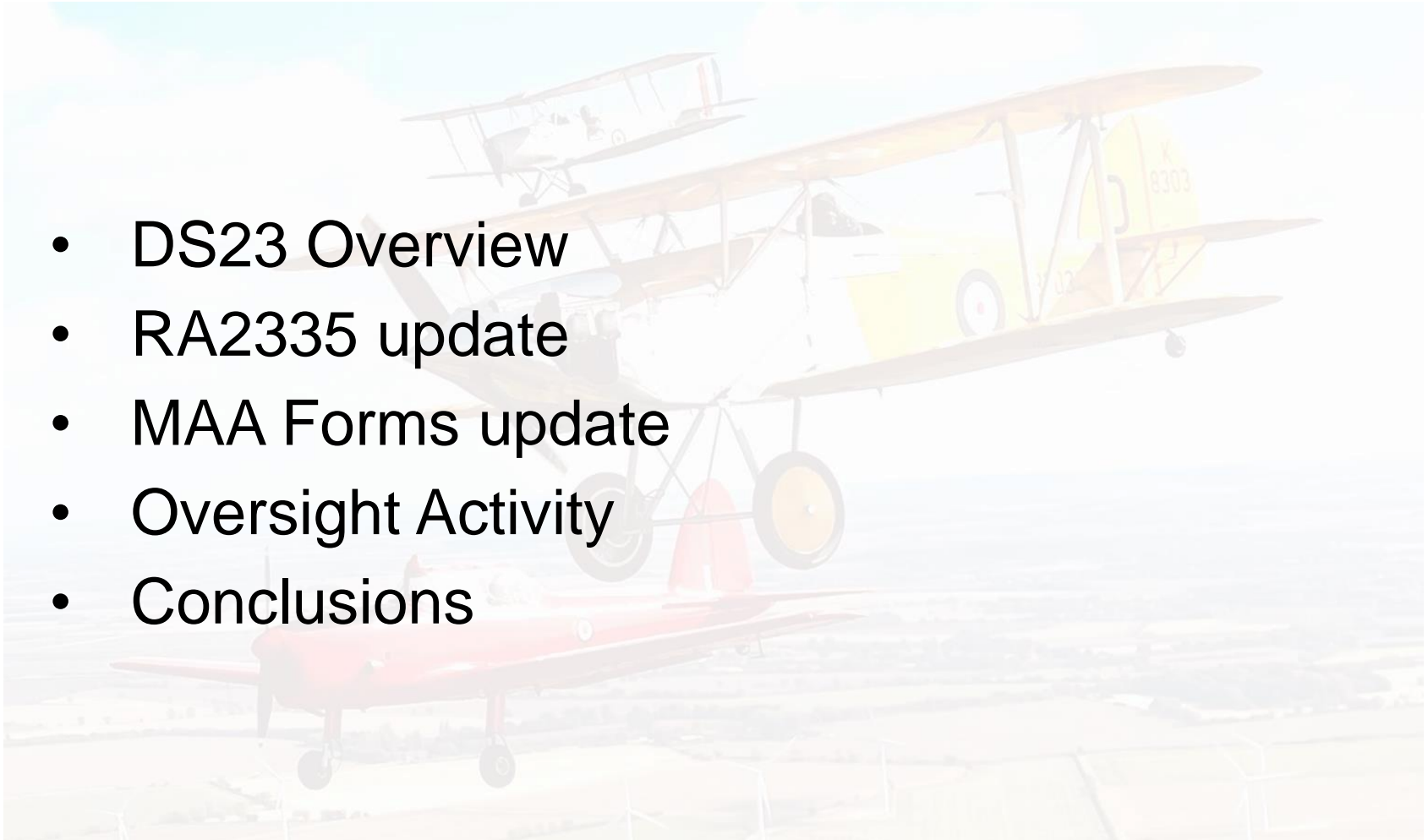
Wing Commander Dave 'Midds' Middleton



Scope



- DS23 Overview
- RA2335 update
- MAA Forms update
- Oversight Activity
- Conclusions





Most Reported Safety Concerns

- 3 Public infringements/Secondary Spectators
- 1 Airspace Infringement
- 1 Drone Activity/Infringements

1 FDD Upgraded – at an event

4 DASORs

0 Perceived HIGH severity occurrences

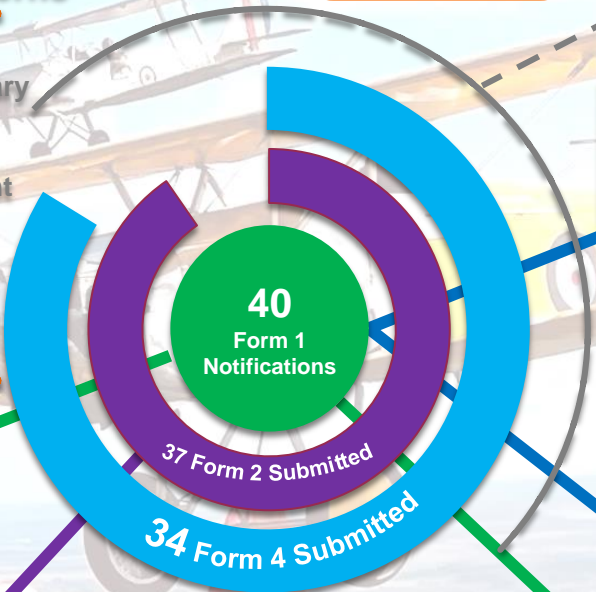
0 STOP calls
2 'too close' calls
2 'too low' calls
3 'terminate' calls

13% late applications

41 Foreign Mil Approvals (22 Dis, 14 Flypast, 3 Role Demo)
2 Canx
81% late applications

FDD Reports: Timely and good quality

Assurance Visits:
15 Planned
8 Conducted
7 Not completed



Key Takeaway: Numbers comparable to last year – late, inaccurate submissions cause problems



INSURANCE REQUIREMENTS

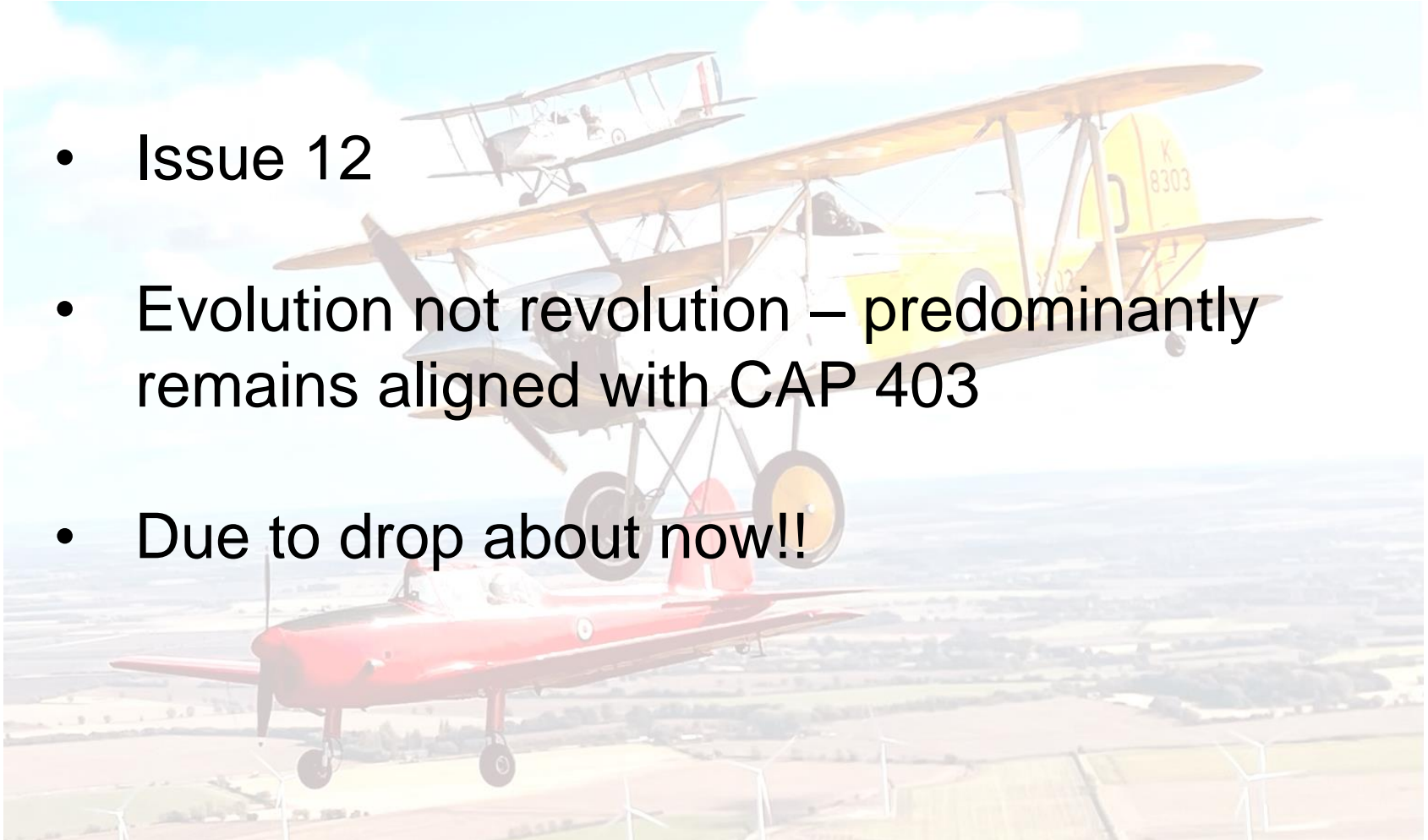
- Updated insurance requirements for civilian aircraft at displays over MOD Occupied Property (ie RA 2335)
- Aircraft with a take-off mass up to 2700kg - £25 million
- Aircraft with a take-off mass over 2700kg – remains £50 million
- Authority for change HQ Air, through Dres
- Good example of engagement through this forum!!



RA2335 – 2024 Changes



- Issue 12
- Evolution not revolution – predominantly remains aligned with CAP 403
- Due to drop about now!!





RA2335 – 2024 Changes



- Some paragraphs moved to more logical places - para number changes
- Noteworthy proposed changes:
 - Drones.
 - Flypast defined as 'up to 3 passes.'
 - FDD use of radio for 'safety' messages.
 - Period of Air Display defined by flying program.
 - Confirmation that validation should not be undertaken once Spectators are on site.
 - Need for Civ Pilots to have a formal display routine prior to a military performance relaxed.
 - Ground track map with Form 2 submission – not required for every submission.
 - Safety considerations for third parties enhanced.
 - FDD in season upgrade or renewal better defined
- Limited capability in MAA to achieve this!!



MAA Forms



Form 1 – Flying Display *notification*. >42 days.

- MAA do not approve Flying Displays at MOD establishments - HoE approves, MAA to be notified.

Form 2 – Foreign Military approval/notification – **significant number of late, inaccurate submissions last year.**

- Flypasts require *notification* >14 days.
- Flying Displays require *approval* >42 days.
 - Submissions should be **thoroughly** reviewed by the FDD before submission to MAA and should include:
 - Display Authorisation.
 - Display sequence, with minima.
 - Other pertinent info.

Form 3 – Foreign Mil Validation - Display Items only need to validate once before displaying at UK venues – unless you consider your display site has complications e.g. Bournemouth versus Farnborough – if in doubt, validate for your display.

Form 4 – FDD Post Event Feedback.

- To MAA within 7 days.
- Now includes requirement to send to CAA.
- Added requirement for FDD to detail FCC members where applicable.

Waiver? To be submitted iaw MAA RA03 and requires >30 working days.

Key Takeaway: Help us to help you – make sure submissions are accurate and on time



MAA Air Display Oversight and Assurance



- **Applicable:** All HoE and FDD
- **Why:**
 - MAA are required to assure the Secretary of State for Defence that your event is regulatory compliant, planned, organized and delivered safely.
 - The MOD allows aircraft to display at your event – you must provide a safe operating environment.
- **What/Where:** Risk-Based Assurance Activity.
- **Who:** MAA Flying Display Team and/or CAA inspectors
- **How:**
 - We will inform HoE / FDDs in advance via letter.
 - A tailored question set will set provided.
 - Require copies of all Display Paperwork.
 - Likely to entail a site visit both prior to and on the day of the event itself.
 - **Can conduct no notice visits.**



MAA Air Display Oversight and Assurance



- **What HoE/FDD will get:**
 - An Assurance Report that will highlight positive and negative observations regarding your event.
- **What you need to know:**
 - Oversight activity will feed into decisions regarding FDD accreditation and upgrades.
 - We may share observations with Aviation Duty Holders and military events committees.
 - We can conduct oversight activity at any time without warning in reaction to intelligence!
 - **If you assume we'll audit you, then your planning (and audit trail of activity) should stand up to scrutiny!**
 - Engage with us early



Conclusion



- Get your heads in Edition 12 of the reg – evolution not revolution.
- Engage with us early on issues, timings etc.
- Conduct your displays as if MAA/CAA auditing you – you won't go far wrong.

Questions?



Display Season 2023 Trends Analysis and DS 23 Safety Survey

Paul Sall

CAA General Aviation Unit
Air Display Lead

Paul.Sall@caa.co.uk



Display Season 2023 Trends Analysis

SRG 1305 Post Event Reporting

An ***incident*** is defined in as an occurrence **associated with the operation of an aircraft** which affects or could affect the safety of operation.

An ***undesirable event*** is defined as an occurrence, which **affects or could affect the safe operation of an aircraft**



Display Season 2023 Trends Analysis

SRG 1305 Post Event Reporting

Year	Accident	Safety Incident	Undesirable events	RA(T) / NOTAM Incursion	Mech Failures	Stop	Too Low	Too Close	Terminate
2019	0	6	6	4	6	2	20	20	0
2021	1	2	8	5	4	0	10	16	3
2022	0	10	8	8	5	0	11	25	9
2023	0	5	8	5	6	3	18	20	14



Display Season 2023 Trends Analysis

Too Close - 20 calls

A reduction again from DS22, the majority of occurrences due to an on-crowd wind

Too Low -18 calls

- A small reduction from last year, many of them flirting with the minimum heights.*
- There were no repeats after warning call*



Display Season 2023 Trends Analysis

Terminate -14 calls

A broad range of reasons:

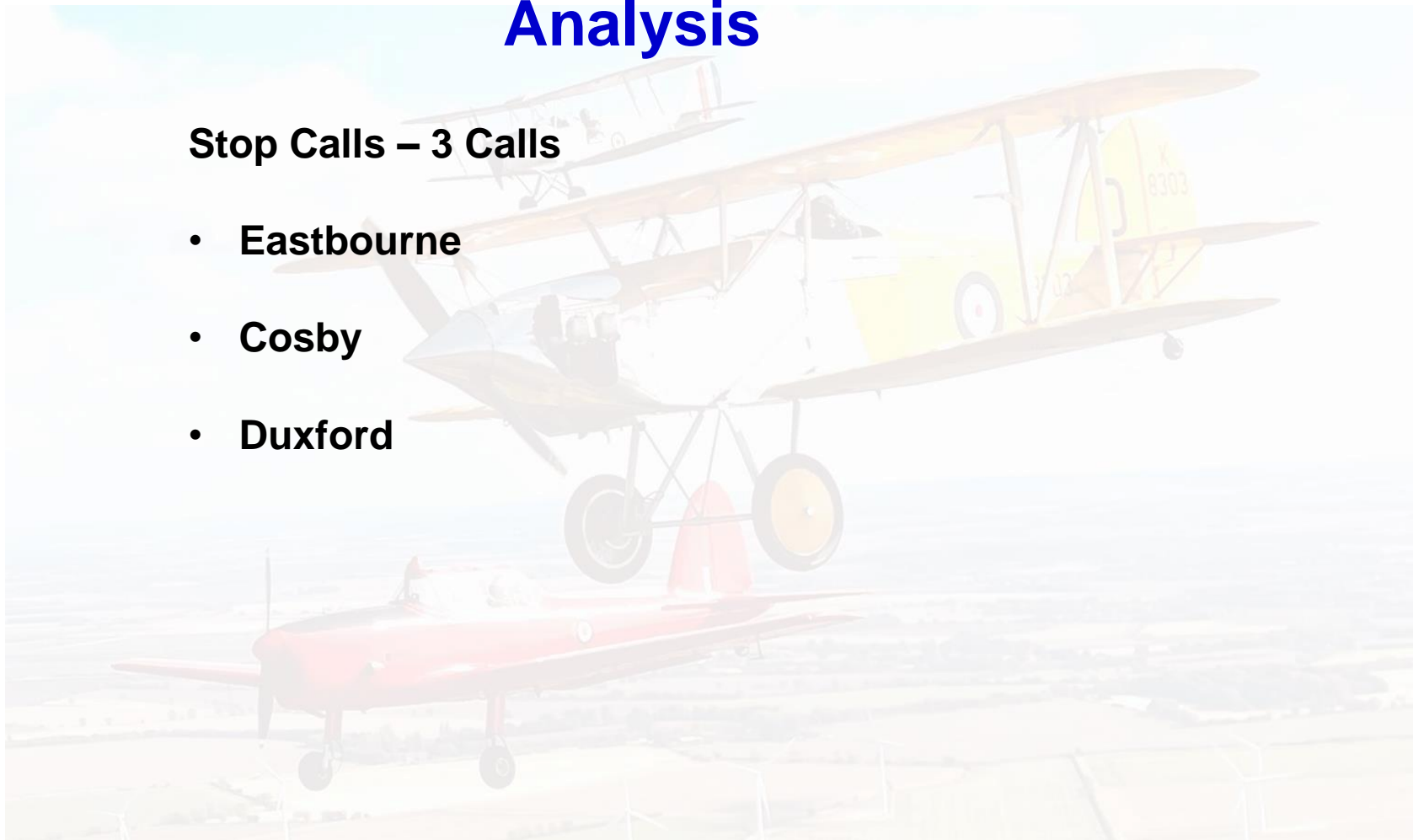
- **Self terminates**
- *Weather*
- *Low Light*
- *Time*
- *Airspace*
- *Pedestrian encroachment*
- *Engine misfire*
- *Breakdown of SA*



Display Season 2023 Trends Analysis

Stop Calls – 3 Calls

- Eastbourne
- Cosby
- Duxford





Display Season 2023 Trends Analysis

Issues/Trends arising

Warning Calls

- It is not a punitive measure but aims to enhance Safety and Learning
- Assess most appropriate time to issue a warning call.
- Communication between FDD/FCC



Display Season 2023 Trends Analysis

Issues/Trends arising

Risk Assessments

- Risk Assessments **must** be site-specific
- Mitigations **must** be over and above CAP 403 requirements
- So...**Don't** reference CAP 403 as a mitigation!



DS 23 Safety Survey



- *Open between 28th Sept to 30th Nov 2023*
- *Open to all who play a role in UK Flying Displays*
- *The aim is to get a broader perspective of issues or perceived risks that otherwise would not be ascertained through normal reporting channels.*
- *Advertised through Skywise, DAE Seminar and DS23 Post Season Symposium.*



DS 23 Safety Survey



- *All responses anonymous.*
- *77 respondents*

	2021	2022	2023
Respondent	Responses	Responses	Responses
Tyro Display Pilot (TDA)	0	3	5
Display Pilot (DA)	55	40	48
Display Pilot Evaluator (DAE)	12	22	22
Flying Display Director (FDD)	29	13	23
Flying Control Committee (FCC)	20	11	18
Event Organiser (EO)	7	1	3
Air Display Event Commentator	3	0	2
Air Display Team Commentator	3	1	1
Air Display Team Manager / Staff	5	6	4
SAG member	3	3	1
Other	6	4	5
Answered	84	58	77



DS 23 Safety Survey



The Air Display organisations and people I worked with or observed during this year's display season:

% of those who strongly agree and agree			
	2021	2022	2023
Have a strong safety culture	92%	98%	96%
Rarely deviate from operating procedures, flying regulations or general flight discipline	85%	96%	93%
Report all adverse incidents, near misses and issues encountered during a flying display	77%	83%	77%
Operate a just culture where the reporting of safety violations, unsafe behaviour or human error is encouraged	79%	89%	83%
Use Human Factors knowledge and error management principles to help improve safety	85%	85%	83%
Never pressure personnel – intentionally or otherwise – to cut corners to accomplish their tasks	89%	58%	92%



DS 23 Safety Survey



Please indicate the extent to which you agree or disagree with the following statements.

% of those who strongly agree and agree			
	2021	2022	2023
I consider that recent changes set out in CAP403 and CAP1724 have helped improve flying display safe	40%	50%	65%
I always ensure that I am conversant with current regulations	96%	98%	81%
I always report problems/issues encountered during a flying display	94%	91%	96%
I believe that flying display stakeholders always report problems/issues encountered during a flying display	77%	52%	73%



DS 23 Safety Survey



Conclusions

- The Survey suggests a stable just environment, where regulations are adhered to and the reporting of incidents, errors, unsafe behaviour and human error is reported or encouraged
- Flying Display regulation is maturing into a stable state that is more widely accepted
- Formations, particularly ad-hoc, FCC construct are all areas mentioned in the survey and we will consider as part of our Oversight Activity.



Regulatory Update



Paul Szluha
Flight Standards Officer
CAA Air Display Regulation Team

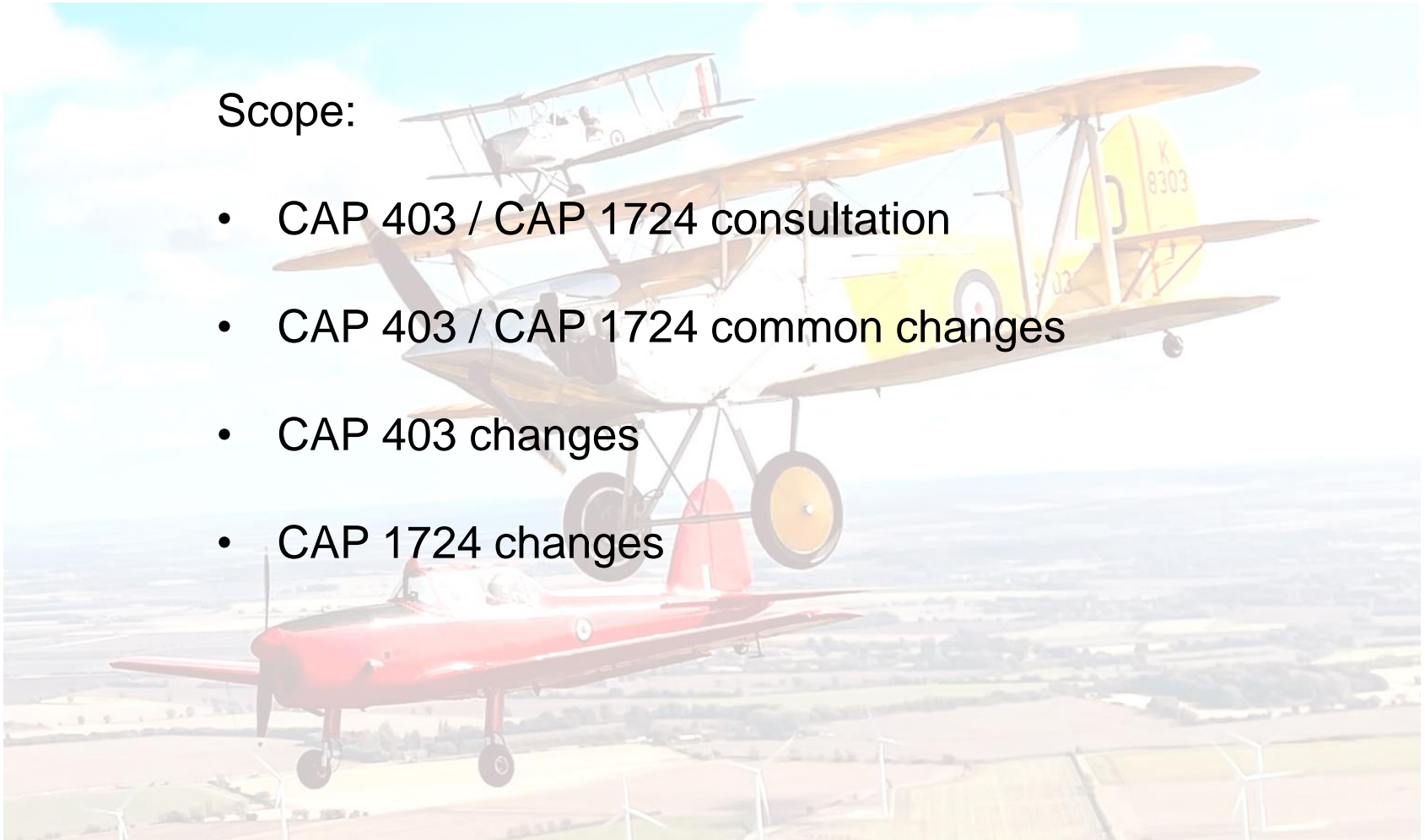


Regulatory update



Scope:

- CAP 403 / CAP 1724 consultation
- CAP 403 / CAP 1724 common changes
- CAP 403 changes
- CAP 1724 changes





CAP 403 / CAP 1724 Consultation

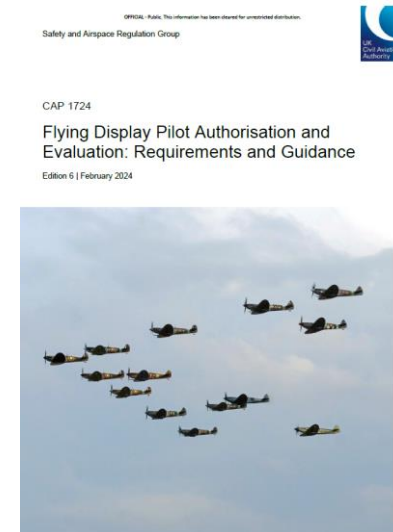
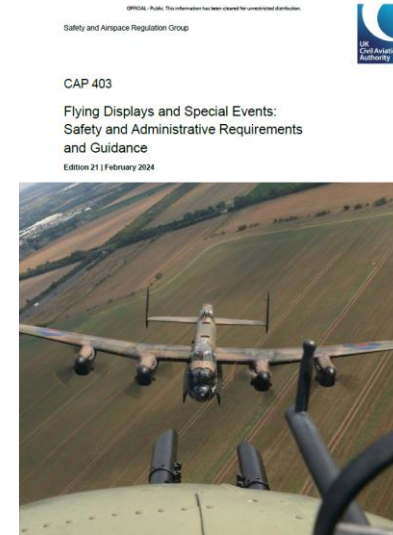


CAP 403

- Public consultation started 27/11/23
- Closed 22/12/23
- 12 responses, 32 comments

CAP 1724

- Public consultation started 20/12/23
- Closes 19/01/24
- 10 responses, 35 comments

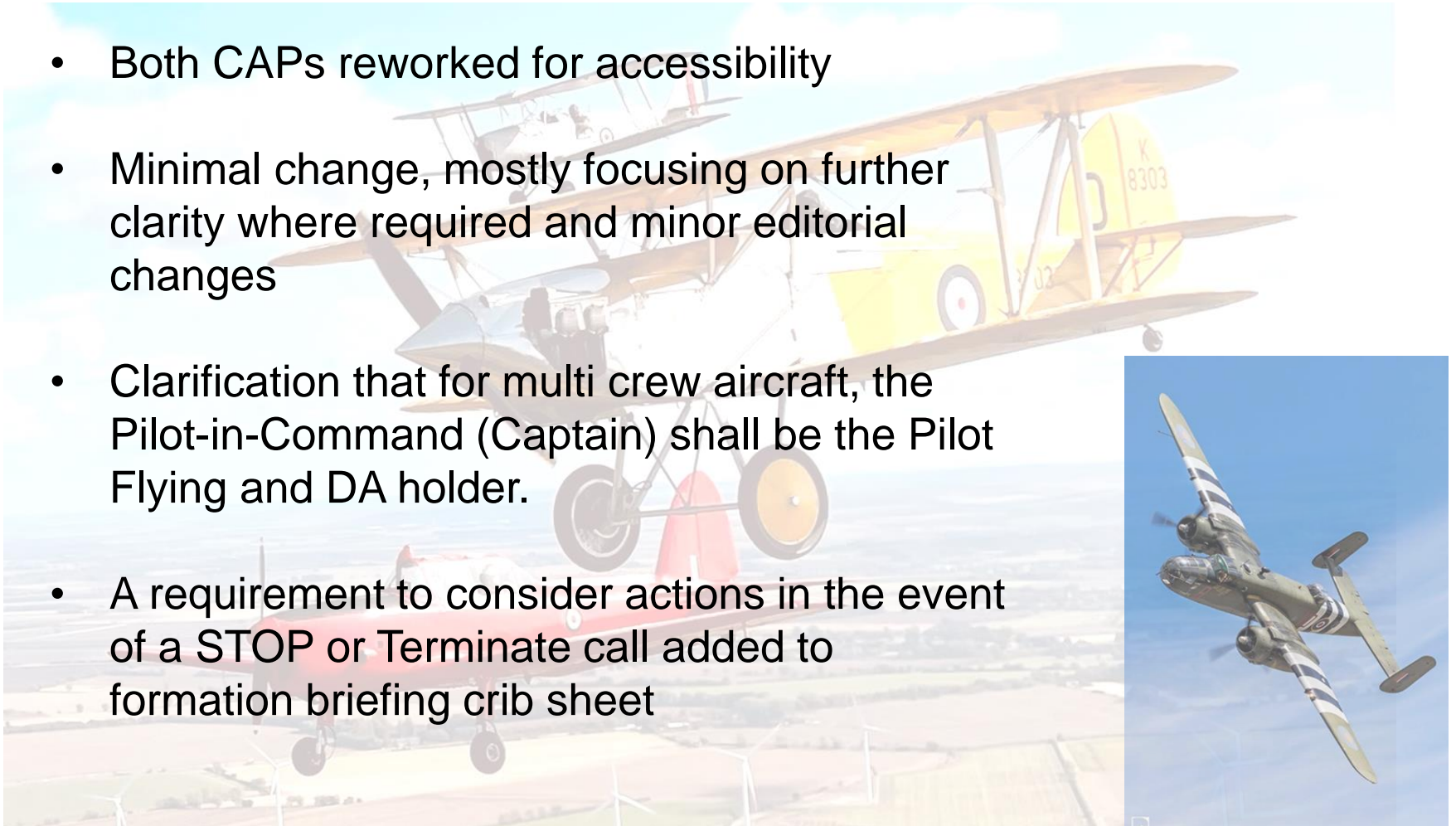




CAP 403 / CAP 1724 common changes



- Both CAPs reworked for accessibility
- Minimal change, mostly focusing on further clarity where required and minor editorial changes
- Clarification that for multi crew aircraft, the Pilot-in-Command (Captain) shall be the Pilot Flying and DA holder.
- A requirement to consider actions in the event of a STOP or Terminate call added to formation briefing crib sheet





CAP 403 changes



- The online Air Display HF course is a one-off requirement. Completion is mandatory prior to initial DA or FDD accreditation
- TDAs no longer restricted to 8 displays, valid for 25 months
- FDDs to include TDAs when considering need for FCC and tier of display

No of Display Items	Low Complexity		High Complexity	
	Low Energy	High Energy	Low Energy	High Energy
1	Tier 1	Tier 1	Tier 1	Tier 1
2-3	Tier 1	Tier 2*	Tier 1	Tier 2
4-7	Tier 1	Tier 2	Tier 2	Tier 2
8-12	Tier 2	Tier 2	Tier 2	Tier 3
13+	Tier 3	Tier 3	Tier 3	Tier 3

Flying Display Price Band	Number of TDA display items permitted
1 – 3 display items	0
4 – 6 display items	1
7 - 12 display items	2
13 - 18 display items	2
19 – 24 display items	2

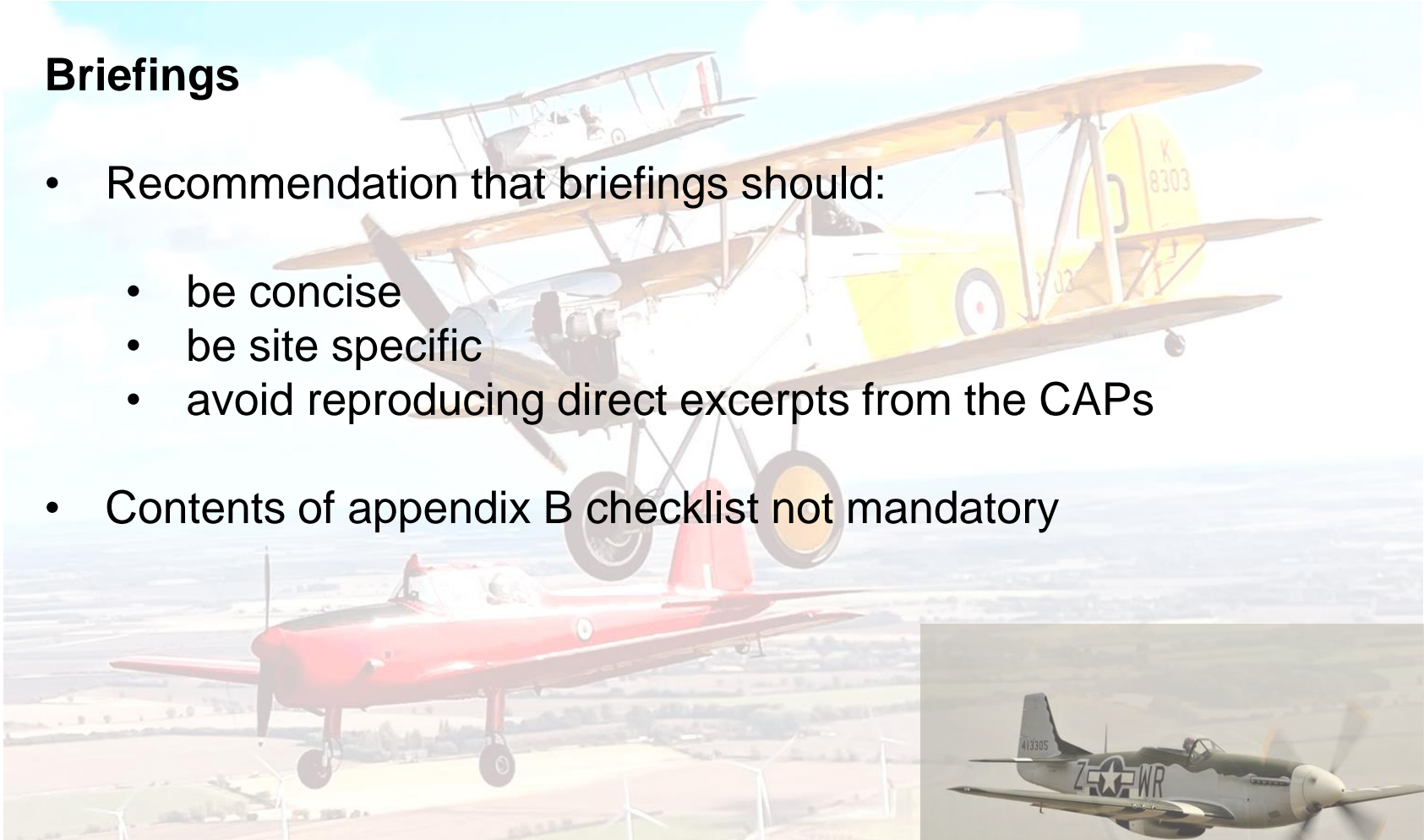


CAP 403 changes



Briefings

- Recommendation that briefings should:
 - be concise
 - be site specific
 - avoid reproducing direct excerpts from the CAPs
- Contents of appendix B checklist not mandatory





CAP 403 changes



1303B requirements for FDDs:

- At time of application
- At time of reaccreditation
- The validity of form SRG 1303B is now aligned with the FDD accreditation period
- A new form must be submitted where there has been any change to previously declared information.

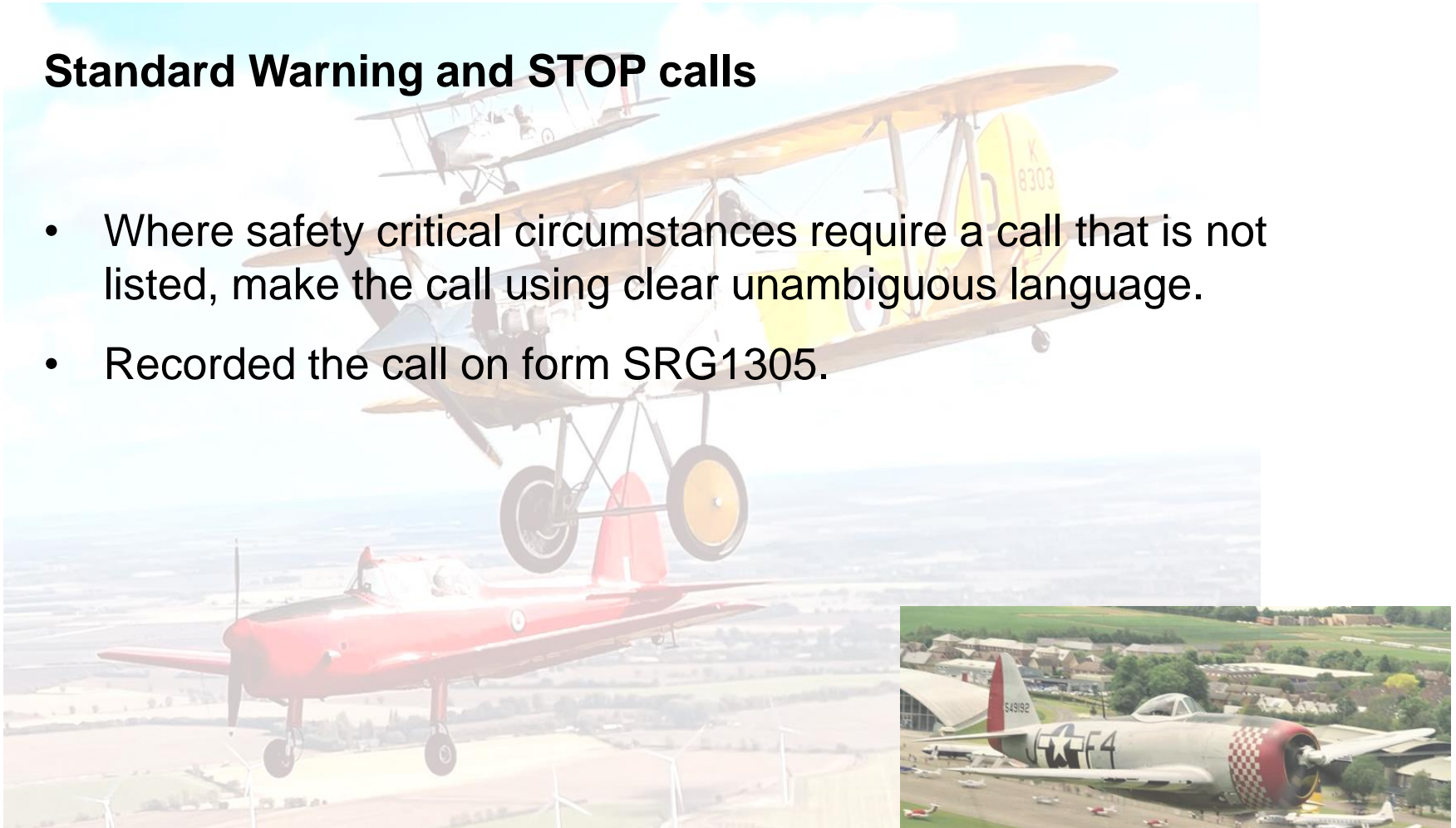


CAP 403 changes



Standard Warning and STOP calls

- Where safety critical circumstances require a call that is not listed, make the call using clear unambiguous language.
- Recorded the call on form SRG1305.





CAP 403 changes



FDD / AFDD Revalidations.

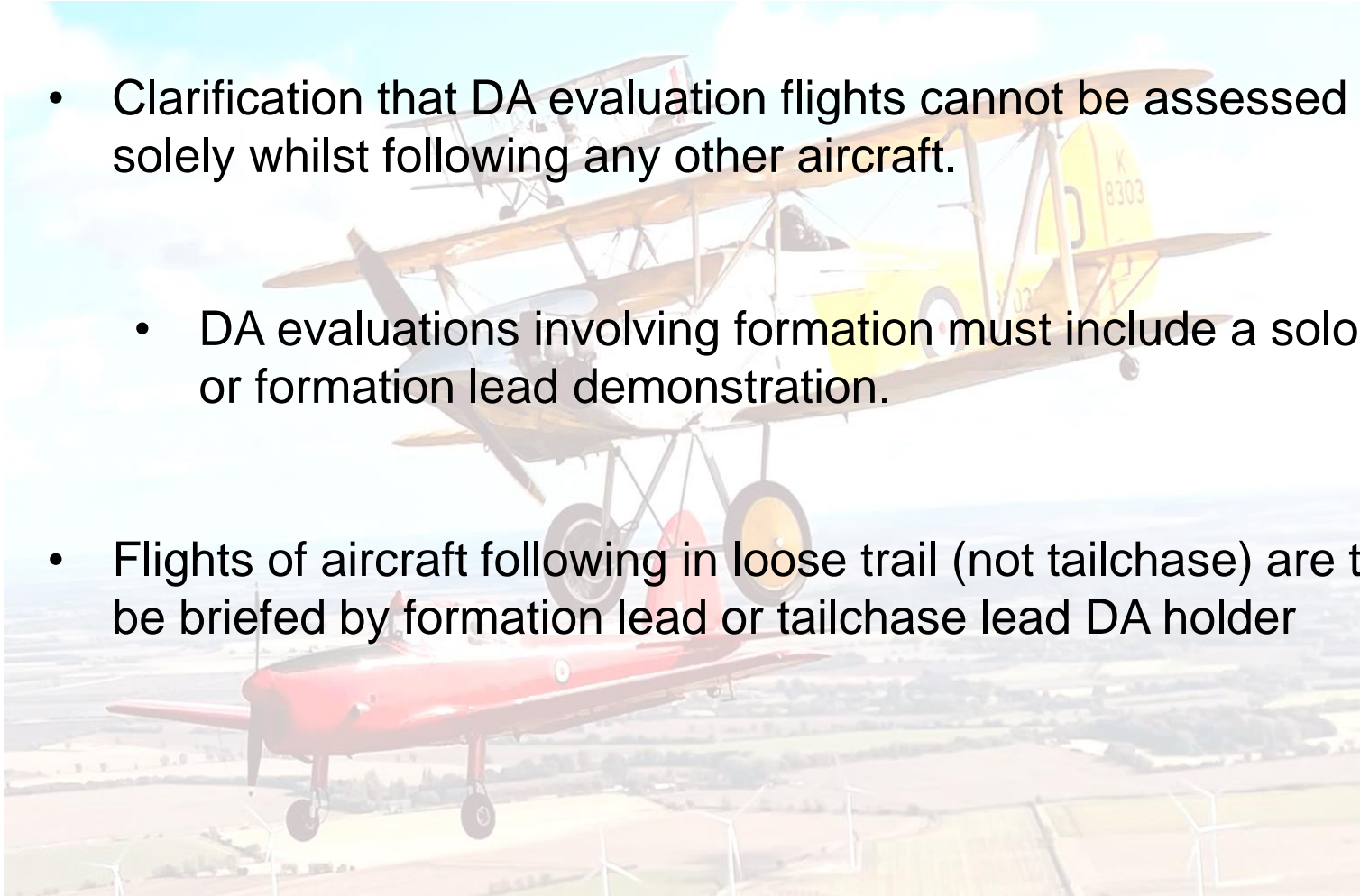
- Two options
 1. Attend accreditation course
 2. Request an 'in the field' revalidation
- 'In the field' revalidations **may** be carried out **in extremis** if:
 - request made at time of display permission application
 - FDD / AFDD currency valid
 - the last revalidation was by attendance course
- 'In the field' **must not** be relied upon to maintain FDD / AFDD Accreditation as FSO availability **may** change at short notice.



CAP 1724 changes



- Clarification that DA evaluation flights cannot be assessed solely whilst following any other aircraft.
 - DA evaluations involving formation must include a solo or formation lead demonstration.
- Flights of aircraft following in loose trail (not tailchase) are to be briefed by formation lead or tailchase lead DA holder





CAP 1724 changes



- DA categories amended to include electric aircraft
- New category 'X' for EVTOL





CAP 1724 changes



1303B requirements for DA holders:

- Initial DA applications
- For renewals / upgrades only if there has been any change

1303B requirements for DAEs:

- DAE initial appointment
- DAE re-appointment (usually 3 years)

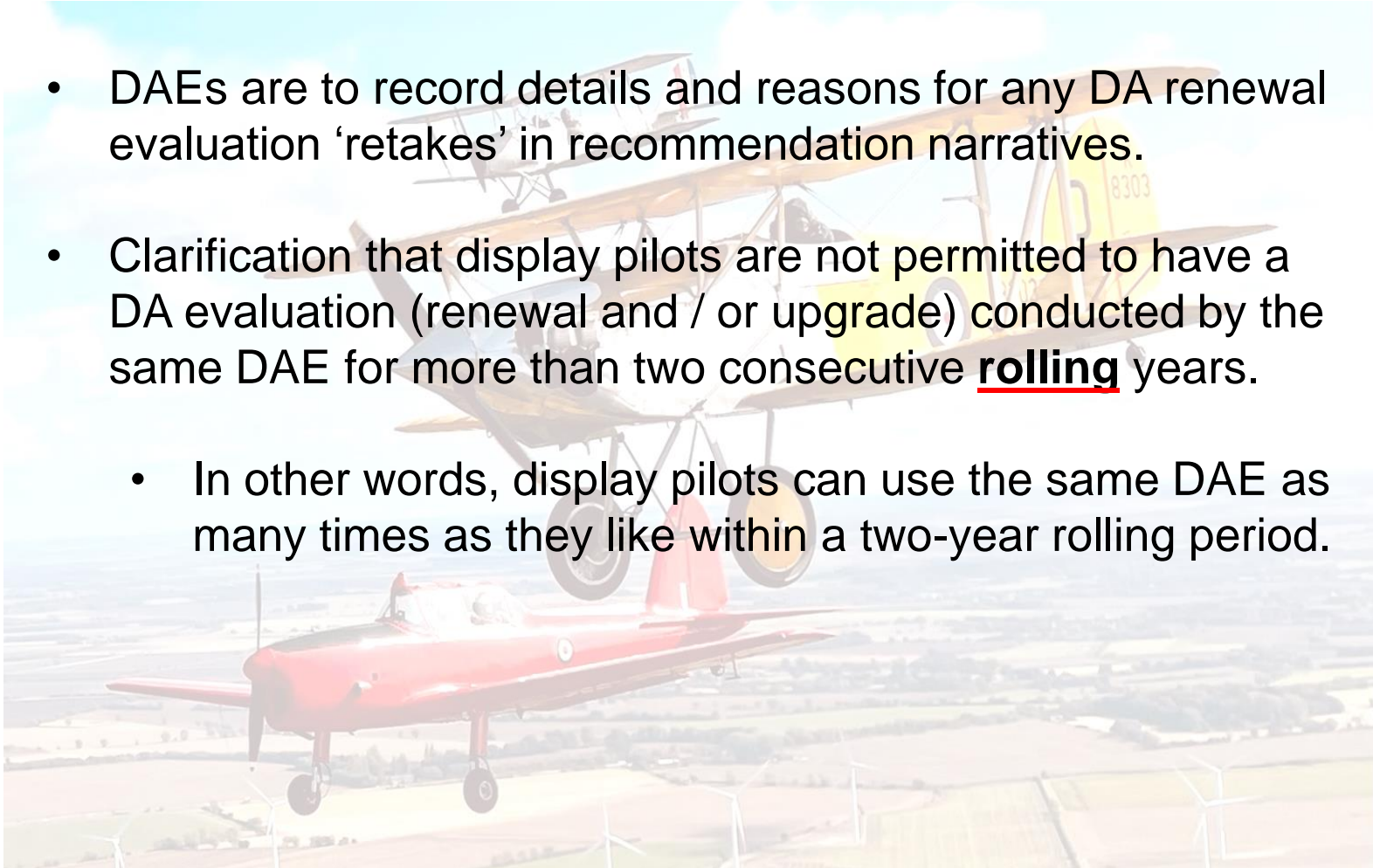




CAP 1724 changes



- DAEs are to record details and reasons for any DA renewal evaluation 'retakes' in recommendation narratives.
- Clarification that display pilots are not permitted to have a DA evaluation (renewal and / or upgrade) conducted by the same DAE for more than two consecutive **rolling** years.
 - In other words, display pilots can use the same DAE as many times as they like within a two-year rolling period.





CAP 1724 changes



- DAEs can now sign the 28 day Temporary Validation Certificate to validate existing DA Schedule 1 privileges following an upgrade.

SCHEDULE 1

(The aircraft and flight categories are specified in Schedule 3 and 4 hereto)

Categories, Types & Minimum non-aerobatic height	Aerobatic Category & Minimum Height	Formation Member	Formation Leader	Tailchase Member	Tailchase Leader	Other permitted manoeuvres, activities and limitations.
C / 50ft	aS / 200ft	fl U	fb 4	t4	t4	

DISPLAY AUTHORISATION TEMPORARY VALIDATION OF EXISTING SCHEDULE 1 PRIVILEGES

I the undersigned, being a person authorised by the Civil Aviation Authority to sign Certificates of Test and Competence in respect of a Display Authorisation, certify that I am satisfied that on the date shown below, the holder of this certificate successfully passed a test of their ability to display.

Aircraft type: PSID DA Category: C

CAP 1724 Aerobatic Skill Level: AI (if non-aerobatic enter N/A)

CAP 1724 Formation Skill Level: N/A (if solo enter N/A)

Other: N/A (for example Limbo, Flour bombing, Stand-on-wing, etc)

DAE Signature: [Signature] DAE Name: A. PILOT DAE Number: 200

Date of Issue: 14/02/24

This temporary validation is only to be used to validate existing Schedule 1 privileges as depicted in the table above and cannot be used to validate any DA upgrade. The DA categories and skill levels entered in this temporary validation must not exceed those depicted in Schedule 1 above.

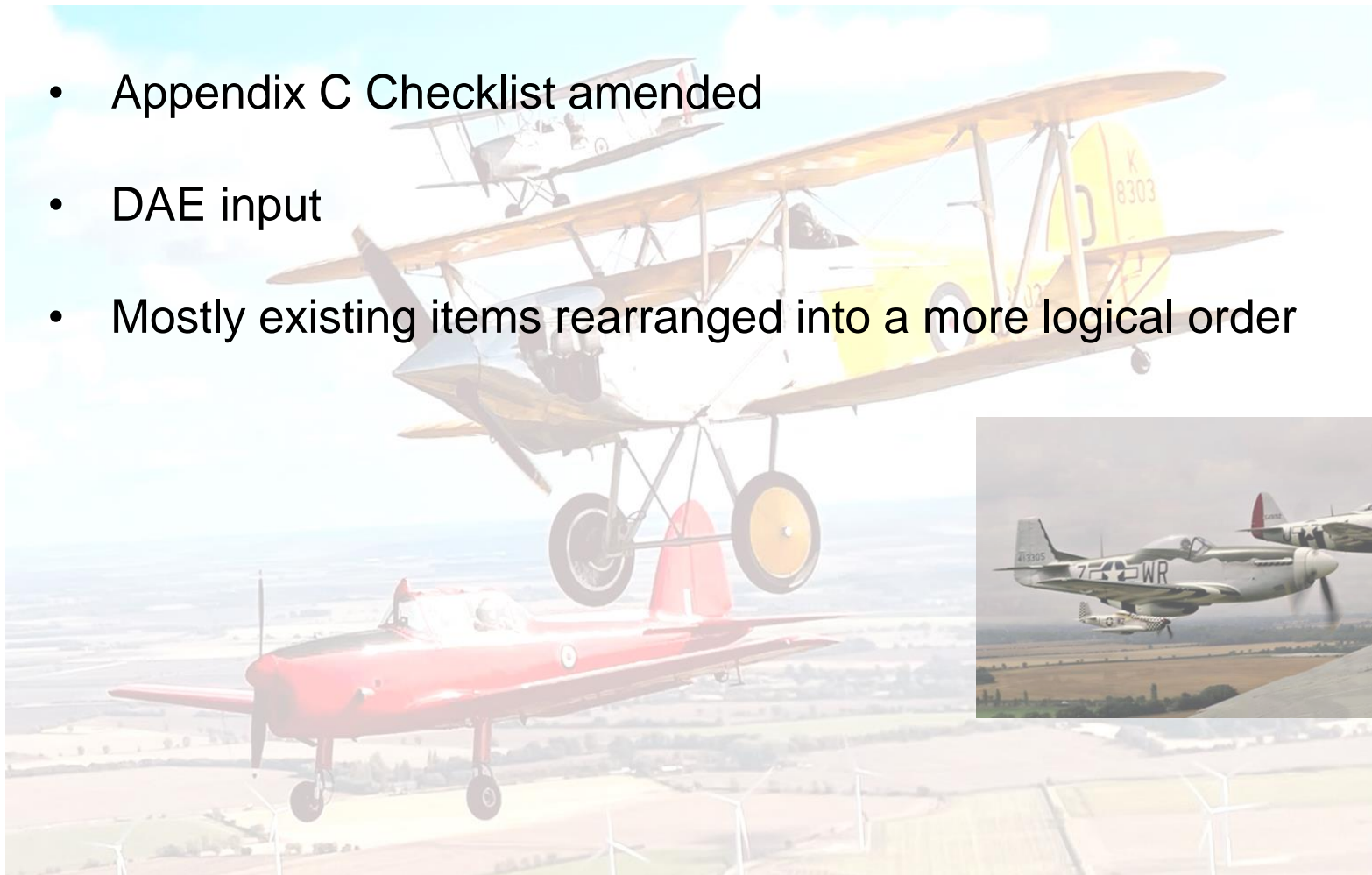
This temporary validation is valid for 28 days from the date of issue, after which the holder must apply for and fly under a newly issued Display Authorisation issued by the UK CAA.



CAP 1724 changes



- Appendix C Checklist amended
- DAE input
- Mostly existing items rearranged into a more logical order





Regulatory update



QUESTIONS





ANO Article 89- Dropping of Articles





ANO Article 89- Dropping of Articles



ANO Art 89 (1) articles and animals (whether or not attached to a parachute) must not be dropped, or permitted to drop, from an aircraft in flight **so as to endanger persons or property.**

ANO Art 89 (2) articles and animals (whether or not attached to a parachute) must not be dropped, or permitted to drop, **to the surface** from an aircraft flying over the United Kingdom except –

- (a) under and in accordance with the terms of an aerial application certificate granted under article 91; or
- (b) **with the permission of the CAA.**

This requires a Permission for each event where Articles are Dropped



ANO Article 89- Dropping of Articles

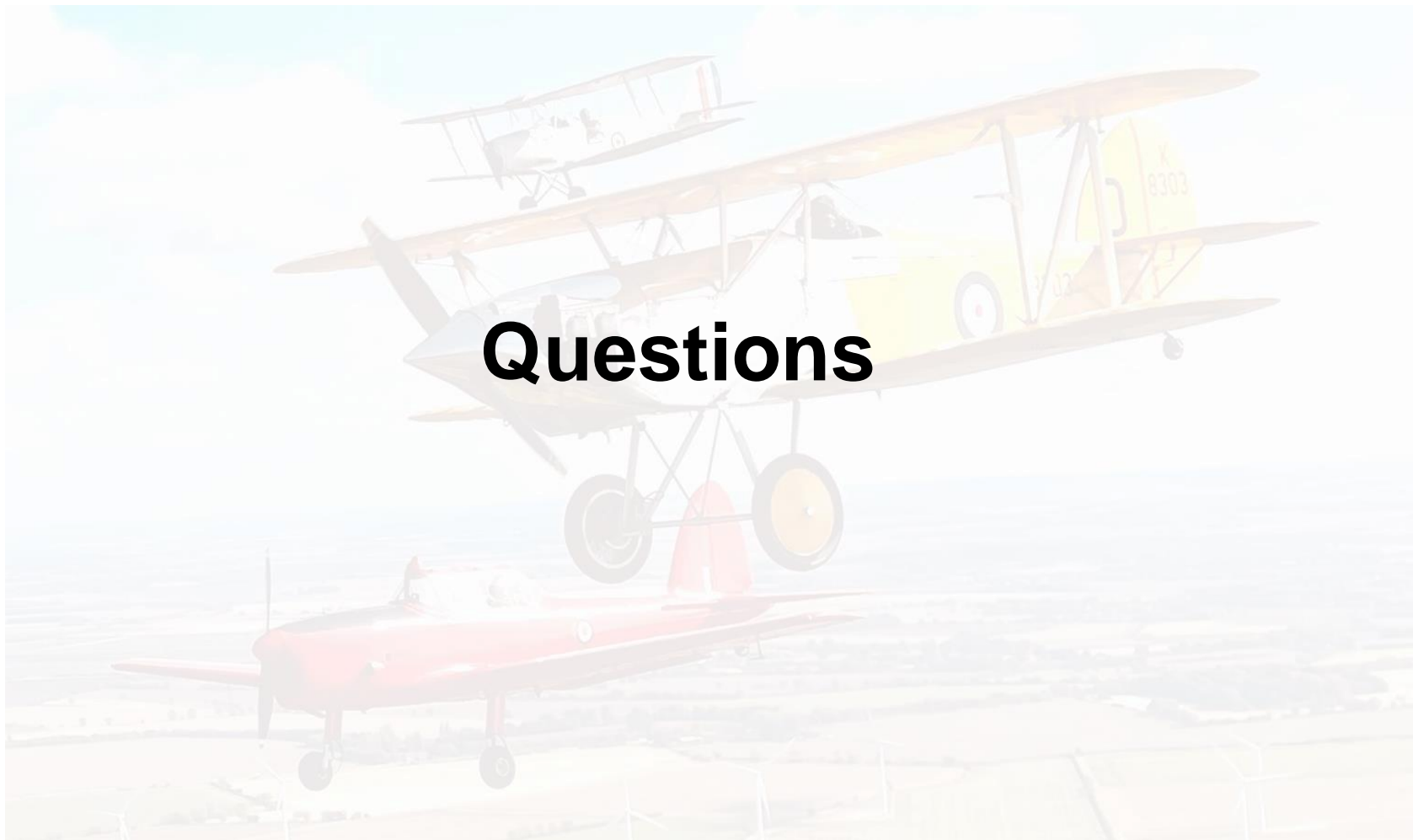


Airborne pyrotechnics

- Permission under Art 89 is required for the use of airborne pyrotechnics.
- A Permission is required for each location
- A Long-Term Permission is permissible at a **single location**.
- Applications for Art 89 (Pyro) Permissions at Art 86 Flying Displays may be made by the display act **or** the FDD
- A RA must be included with Art 89 (Pyro) applications, unless included in the Art 86 RA submitted by FDD
- All RAs for pyro displays must be countersigned by EO



ANO Article 89- Dropping of Articles





Flying Display: Application for NOTAM





Flying Display: Application for NOTAM

Current Situation:

- **Apply directly** to CAA Airspace Regulation (Utilisation) via Online Portal for a RA(T) or NOTAM.
- Flying Display/ Special Event Application initiates an internal CAA process for generation of a NOTAM:

2000 feet vertically and 1.5nm horizontally.

n.b. Application form currently states that the NOTAM will be issued automatically, but this is not the case.



Flying Display: Application for NOTAM

Exceptions:

NOTAMs are not initiated/generated from a Flying Display/
Special Event Application. Such exceptions include:

- A Flying Display within the ATZ of a licenced aerodrome
- When a RA(T) is already in place for a Flying Display
- Long Term Permissions
- Multiple applications for same event (Art 86 and Art 89)



Flying Display: Application for NOTAM

Currently Process can result in:

- Duplication of work
- Delay in issue of NOTAM
- Inability for an applicant to track progress of NOTAM application made through Flying Display Application



Flying Display: Application for NOTAM

This Season:

- Art86/ Art89 Applications will not result in the initiation of a NOTAM.
- All airspace applications are required via the on-line portal.
- AR(U) will only be processing exact airspace requirements where a NOTAM is actually needed.



Flying Display: Application for NOTAM

Course of Action

- All Applications for NOTAMs (& RA(T)) to made directly to CAA Airspace Regulation (Utilisation) via Online Portal.

The Future:

- Automated system (Airspace Coordination and Obstacle Management System ACOMS) to be implemented
- Anticipated implementation of ACOMS at the end of DS24

This will allow:

- Greater visibility of the status of application
- Reduce time taken to staff an application
- Streamline internal processes



Flying Display: Application for NOTAM

QUESTIONS





FDD restricted Radio Operator's Certificate of Competence (ROCC)





ROCC



- There is a demonstrable need for FDDs and FCC members to make the standard calls set out in CAP 403
- For FDDs without ATCO, FISO, AGCS or Full ROCC qualification, a 'Restricted ROCC Flying Display Director (FDD) only' (FDD ROCC) is required
- Calls limited to the calls set out in chapter 6 of CAP 403
- **BUT - Nothing prevents a person making a call for the purpose of avoiding immediate danger (ANO 202(3)).**
- Issued to accredited FDDs
- One off certification fee payable



ROCC



- FCC members, without an ATCO, FISO, AGCS or ROCC qualification, who intend to use an aeronautical radio station may be permitted to do so under the authorisation and supervision of the FDD
- The FDD is to assure themselves that any such FCC member is aware of the scope of the permitted phraseology
- The FDD shall declare their attestation of FCC members using the SRG1413B Declaration Form.
 - SRG 1413B is free of charge



ROCC



Questions





Pre-Display Admin Checks

An aerial photograph of several vintage biplanes flying over a landscape with wind turbines. The biplanes are in various colors, including yellow and red. The text is overlaid on the image.

Philip Brown

Flight Standards Officer

CAA Air Display Regulation Team



How the other person will try to land you in the merde

Philip Brown

Flight Standards Officer

CAA Air Display Regulation Team



DA Holders



Article 86 Requirements

Pilots

(2) Subject to paragraphs (16) and (18), the pilot in command of an aircraft who is intending to participate in a flying display must take all reasonable steps to be satisfied, before participating, that—

- (a) the flying display director has been granted an appropriate permission under paragraph (6);
- (b) the intended flight can comply with any relevant conditions subject to which that permission may have been granted; and
- (c) the pilot has been granted an appropriate pilot display authorisation.

(3) Subject to paragraphs (16) and (18), the pilot in command of an aircraft who is participating in a flying display for which a permission has been granted must comply with any conditions subject to which that permission may have been granted.





Appropriate Permission

CIVIL AVIATION AUTHORITY Air Navigation Order 2016



PERMISSION – Flying Displays

1. The Civil Aviation Authority, pursuant to Article 86 of the Air Navigation Order 2016, as amended, hereby permits **Mr Blue and Mr Green (as deputy)** to act as the Flying Display Director of a **Tier 2 Flying Display** (the Flying Display).
2. This Permission is granted subject to the following conditions:

- (a) the Flying Display carried out pursuant to this Permission relates only to the Display Areas marked as 'Display Area A' and 'Display Area B' delineated on the **attached Schedule I** centred upon **Sherington Airfield**

OS Grid Reference: **AB 123 456**

The Civil Aviation Authority, as the competent authority in the United Kingdom for SERA.5005 (f) (2) of Regulation (EU) No 923/2012 of 28 September 2012, as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 hereby permits aircraft participating in the Flying Display to fly below a height of 500 feet (150 m) above the ground or water, or below a height of 500 feet above the highest obstacle within a radius of 500 feet (150 m) of the aircraft, at a height of:

- (i) not less than that specified in the Pilot in Command's Display Authorisation whilst flying over 'Display Area A';
- (ii) not less than **200 feet** above surface level, or at a height of not less than that specified in the Pilot in Command's Display Authorisation (whichever is higher), whilst flying over 'Display Area B';

Outside the delineated areas on Schedule I, SERA.5005(f)(1) & (2) will continue to apply to all civilian registered aircraft¹.

- (b) the Flying Display may only consist of a maximum of 8 display items and 2 TDA display items;
- (c) no aircraft shall take part in the Flying Display:
 - (i) above any point on the surface closer to any area occupied by spectators or their vehicles than that specified in the 'minimum lateral separation distances between display aircraft and crowd line' table in Chapter 5 of CAP403 as appropriate to the display speed of the aircraft;
 - (ii) in aerobatic flight, or fly below 500 feet above the surface in non-aerobatic flight, over any building, vessel or vehicle which the commander has reason to believe is occupied by non-essential personnel or known secondary spectator crowds whilst within the Display Areas;
 - (iii) unless, that in the event of an emergency arising, a landing can be made without undue hazard to persons or property;
 - (iv) unless an Article 89 Exemption is in place for any aircraft operator wishing to use airborne pyrotechnics;

¹ Outside the delineated areas on **Schedule I**, military aircraft are permitted to operate in accordance with the provisions of CAP 403 Chapter 6 and RA2335.



Relevant Conditions



This Permission is granted subject to the following conditions:

- (a) the Flying Display carried out pursuant to this Permission relates only to the Display Areas marked as '**Display Area A**' and '**Display Area B**' delineated on the **attached Schedule I** centred upon **Sherington Airfield**

OS Grid Reference: **AB 123 456**

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- (i) not less than that specified in the **Pilot in Command's Display Authorisation** whilst flying over '**Display Area A**';
- (ii) not less than **200 feet** above surface level, or at a height of not less than that specified in the Pilot in Command's Display Authorisation (whichever is higher), whilst flying over '**Display Area B**';

Outside the delineated areas on Schedule I, SERA.5005(f)(1) & (2) will continue to apply to all civilian registered aircraft¹.

- (b) the Flying Display may only consist of a maximum of **8** display items and **2** TDA display items;
- (c) no aircraft shall take part in the Flying Display:
- (i) above any point on the surface closer to any area occupied by spectators or their vehicles than that specified in the 'minimum lateral separation distances between display aircraft and crowd line' table in Chapter 5 of CAP403 as appropriate to the display speed of the aircraft;
 - (ii) in aerobatic flight, or fly below 500 feet above the surface in non-aerobatic flight, over any building, vessel or vehicle which the commander has reason to believe is occupied by non-essential personnel or known secondary spectator crowds whilst within the Display Areas;
 - (iii) unless, that in the event of an emergency arising, a landing can be made without undue hazard to persons or property;
 - (iv) unless an Article 89 Exemption is in place for any aircraft operator wishing to use airborne pyrotechnics;



Relevant Conditions

ANO Art 86

Military Pilots




(17) Subject to paragraph (18), the flying display director must not permit any military aircraft to participate in a flying display unless the director complies with any conditions concerning military aircraft subject to which the permission for the flying display may have been granted.





Relevant Conditions Military Pilots



- 
- An aerial view of a biplane with a yellow tail section marked 'K 8303' flying over a landscape.
- (e) (i) no military aircraft shall take part in a Flying Display pursuant to this Permission without the prior approval of the Ministry of Defence.
 - (ii) UK Military Display Teams are exempt from the conditions contained in paragraphs 2(a) and (c) above and are permitted to display to their set PDA limits and in accordance with RA2335 or associated MAA issued waivers, subject to the prior approval of the Flying Display Director and compliance with the requirements as stated in paragraph 6.17 of CAP403.





Other Checks



CIVIL AVIATION AUTHORITY
Air Navigation Order 2016
Rules of the Air Regulations 2015



EXEMPTION – Landing With Other Aircraft On The Runway

1. The Civil Aviation Authority, in exercise of its powers under Article 266 of the Air Navigation Order 2016, as amended, hereby exempts from the provisions of Rule 10(1) of the Rules of the Air Regulations 2015, as amended, any aircraft authorised by **Mr Blue** at Sherington Airfield.

Grid Reference: AB 123 456

insofar as is required to permit landings where the runway is not clear of other aircraft.

2. This Exemption is granted subject to:
 - a. the said aircraft maintaining an in-flight visibility of at least **3000 metres**;
 - b. prior approval from the airfield operator.
3. Individual aircraft and pairs of aircraft may land whilst the runway is occupied by other aircraft of the formation, with a minimum separation distance of **200 metres** between elements or landing aircraft.
3. All pilots flying aircraft covered by this Exemption are to be briefed by **Mr Blue** prior to each display or practice display on the appropriate procedures for landing.
4. This Exemption shall have effect during daylight hours on **01 July 2024** at Sherington Airfield unless previously revoked.



Date: 18 January 2024
General Aviation 01293 573988

Distribution: AR Ops and AR (U) (01293 983880); Police Air Support Unit; Mr Blue (07777 123456);
Airport Manager, Sherington Airfield; [File]

Attachment(s): nil



Other Checks

Military Aviation Authority



CIVIL AVIATION AUTHORITY Standardised European Rules of the Air (SERA)

PERMISSION – SERA Minimum Height and Visual Flight Rules (500ft)

1. The Civil Aviation Authority, as the competent authority in the United Kingdom for SERA.5005 (f) (2) of Regulation (EU) No 923/2012 of 26 September 2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018, hereby permits **any aircraft** ("the said aircraft") to fly below a height of 500 feet (150 m) above the ground or water, or below a height of 500 feet above the highest obstacle within a radius of 500 feet (150 m) of the aircraft for the purpose of **display practice**.
2. This Permission is granted subject to the following conditions:
 - (a) the said aircraft **shall** fly pursuant to this Permission only over the Display Areas marked as **Area A** and **Area B** delineated on the attached Schedule I centred upon **Sherington Airfield**

Grid reference: **AB 123 456**

Outside the delineated areas on Schedule I, SERA.5005(f)(1) & (2) will continue to apply to all civilian registered aircraft.
 - (b) the said aircraft **shall not** fly at a height of:
 - (i) less than **50 feet** above surface level, or at a height of not less than that specified in the **Pilot in Command's Display Authorisation (DA)** (whichever is higher) or, if no such DA is held by that pilot, less than **200 feet** in normal flight or **500 feet** for aerobatics unless specific observation by a DAE for the grant of a DA within **Area A DA/50ft MSD**;
 - (ii) less than **200 feet** above surface level, or at a height of not less than that specified in the **Pilot in Command's Display Authorisation (DA)** (whichever is higher) or, if no such DA is held by that pilot, less than **200 feet** in normal flight or **500 feet** for aerobatics unless specific observation by a DAE for the grant of a DA within **Area B 200ft MSD**;
 - (c) the Pilot(s) in Command of the said aircraft **must** be authorised by **Mr Blue** (Permission holder) and the **Sherington Airfield Manager** or their nominated deputy.



Other Checks



Radio failure

PLUS

Warning Calls



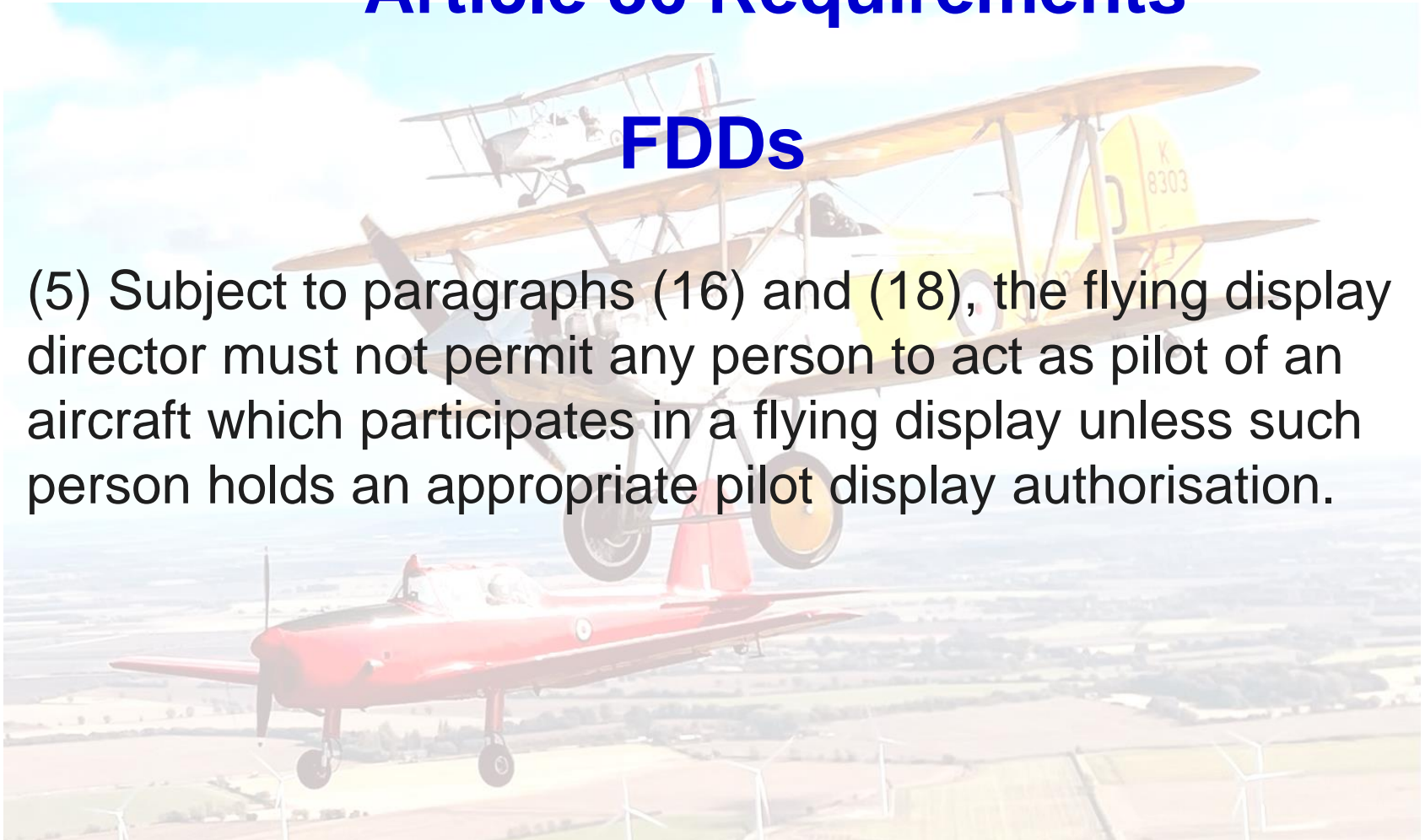
Flying Display Directors



Article 86 Requirements

FDDs

(5) Subject to paragraphs (16) and (18), the flying display director 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.





Display Authorisation Check

- *Check that the pilot has a valid DA that has been issued by the CAA*

This includes checking:

- the expiry date of the DA
- The expiry date of the Display Group, if more than one Group is held
- the **current** aerobatic skill level against the planned manoeuvres
- any other manoeuvres, activities and limitations, e.g. **limbo**

These have all been picked up on Assurance visits!



Display Authorisation Check **MAA**

Check that the aerobatic skill level, in the appropriate category, for the planned display has been renewed within the last 26 months.

Aircraft Category	Skill Level	Date of Evaluation	Valid Until
A	aU	07 May 2021	07 June 2022
B	aS	02 June 2022	02 July 2023
C	aS	30 April 2023	02 July 2024

SCHEDULE 1
(The aircraft and flight categories are specified in Schedule 3 and 4 hereto)

Categories, Types & <u>Minimum</u> non-aerobatic height	Aerobatic Category & Minimum Height	Formation Member	Formation Leader	Jaigbass Member	Jaigbass Leader	Other permitted manoeuvres, activities and limitations.
A / 50ft	aU / 500ft	FB 4	FB 4	14	14	
B / 50ft	aS / 500ft	FB 4	FB 4	14	14	Slow Roll Hesitation roll
C / 50ft	aS / 500ft	FB 4	FB 4	14	14	

An Aircraft Group that hasn't been renewed within **26 months** has 'lapsed'.



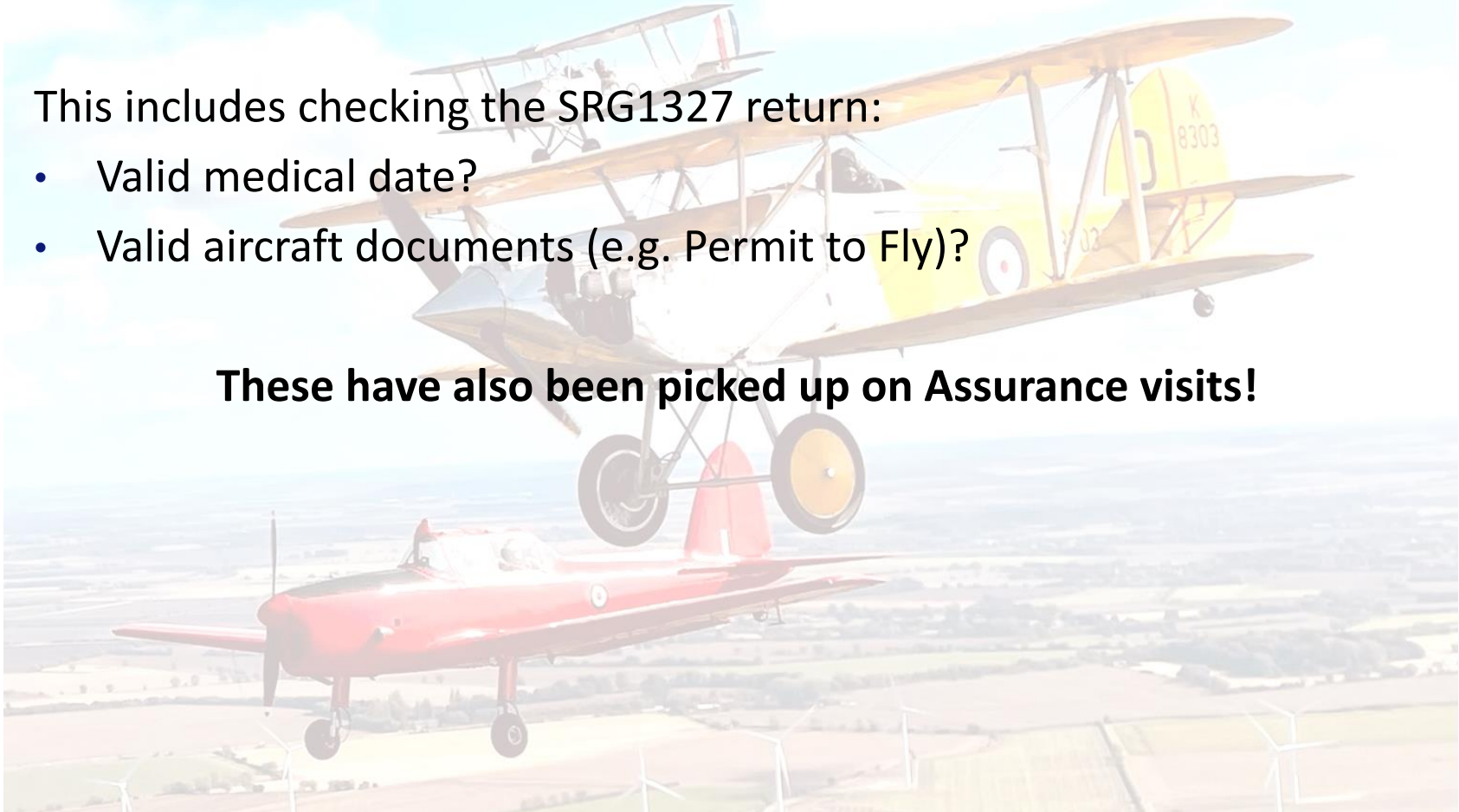
Display Authorisation Check

- *Check that the pilot has a valid DA that has been issued by the CAA*

This includes checking the SRG1327 return:

- Valid medical date?
- Valid aircraft documents (e.g. Permit to Fly)?


These have also been picked up on Assurance visits!





Display Authorisation Check

- Check that the pilot has a valid TDA that has been issued by the CAA



TYRO DISPLAY AUTHORISED PILOT

It is certified that


Alex Pilot

DA number: 9876


satisfies the requirements relating to Tyro Display Authorised (TDA) Pilots and as such is eligible to be included as an Aircraft Display Item in accordance with the provisions contained within CAP403.

This certificate expires on

12 February 2026

Signed  GAU

Date: 24 January 2024



(for the CAA)

The maximum number of TDA Display Items permitted at a Flying Display are:

Flying Display Price Band	Number of TDA display items permitted
1 – 3 display items	0
4 – 6 display items	1
7 - 12 display items	2
13 - 18 display items	2
19 – 24 display items	2

The maximum number of Display Items in each price band needs to be occupied before any free TDA Display Items become available.

A single display item may contain more than one TDA provided they are a constituted display formation or act.

Display items containing a combination of established DAs and TDAs do not qualify.

20240123_TDA_Certificate_V1.0



Appropriate Exemption



Telephone: 01293 573988
Email: GA@caa.co.uk

12 July 2016

Dear Alex

Ref: Separation Distances Exemption 01 July 2016

Following consideration of the detail in your request for an exemption to display at the 150m crowd separation line dated 01 July 2016, the CAA can exempt **Alex Pilot** from the current air display crowd-to-display separation distance of 230m stated in CAP 403 as follows:

1. The exemption only applies to **Alex Pilot DA 9876** operating **Extra 300 G-ABCD** (the said aircraft)
2. The exemption is to fly the display no closer than 150m from the crowd line and at speeds no greater than **160 KIAS**.
3. The overall mass of the said aircraft at the start of the display will be no greater than **900 kg**.
4. Operating to the exemption minima requires the approval/agreement of the Flying Display Director.

This approval is based upon the case submitted by Alex Pilot and the Kinetic Energy calculation of a **900 kg** aircraft at **160 KIAS** being less than the maximum permitted in the 1200kg and below 150 KIAS case. This exemption is valid from the date of this letter, unless revoked or suspended in writing.

Yours sincerely



Appropriate Permission



PERMISSION – Dropping of Articles

1. The Civil Aviation Authority, in exercise of its powers under Article 288 of the Air Navigation Order 2016, as amended, hereby permits under Article 89(2) of the said Order, the dropping of articles from **Extra 300 G-ABCD** ("the said aircraft"), for the time being operated by **Alex Pilot**.
2. This Permission is granted subject to the following conditions:
 - (a) the articles to be dropped shall consist of **memorial poppies** of no discernible weight, the dropping of which shall be confined to within **Display Area A** and **Display Area B** delineated on **Schedule I** of the Article 88 Permission reference **ADOC-1234** centred upon **Sherington Airfield**

 Grid reference: **AB 123 456**

 Outside the delineated areas on Schedule I of **ADOC-1234**, SERA.5005(f)(1) & (2) will continue to apply to all civilian registered aircraft.
 - (b) the commander of the said aircraft shall be **Alex Pilot**;
 - (c) the said aircraft shall not fly pursuant to this Exemption:
 - (i) unless meteorological conditions are such as to allow flight under Visual Flight Rules;
 - (ii) without the permission of the landowner or manager;
 - (iv) above any point on the surface closer to any area occupied by spectators or their vehicles than that specified in the 'minimum lateral separation distances between display aircraft and crowd line' table in Chapter 5 of CAP403 as appropriate to the display speed of the aircraft;
 - (iv) unless that in the event of an emergency arising, the aircraft can be landed without danger to persons or property;
 - (v) unless a NOTAM is in place and active;
 - (vi) unless in compliance with **ADOC-1234**.
3. An Article 88 Flying Display Permission is required to be in place for any Dropping of Articles carried out pursuant to this Exemption at an advertised event open to the public unless the said aircraft performs one single flypast¹ during which the articles shall be dropped and a risk assessment covering the aerial activity has been submitted to this Authority in advance.
4. This Exemption shall have effect **during the effective times of ADOC-1234 on 01 July 2024** unless previously revoked.



Appropriate Permission



PERMISSION – Dropping of Articles

1. The Civil Aviation Authority, in exercise of its powers under Article 266 of the Air Navigation Order 2016, as amended, hereby permits under Article 89(2) of the said Order, the dropping of articles from **Extra 300 G-ABCD** ("the said aircraft"), for the time being operated by **Alex Pilot**.
2. This Permission is granted subject to the following conditions:
 - (a) the articles to be dropped shall consist of **memorial poppies** of no discernible weight, the dropping of which shall be confined to within **Display Area A** and **Display Area B** delineated on **Schedule I** of the Article 86 Permission reference **ADOC-1234** centred upon **Sherington Airfield**

Grid reference: **AB 123 456**

Outside the delineated areas on **Schedule I** of **ADOC-1234**, **SERA.5005(f)(1) & (2)** will continue to apply to all civilian registered aircraft.
 - (b) the commander of the said aircraft shall be **Alex Pilot**;
 - (c) the said aircraft shall not fly pursuant to this Exemption:
 - (i) unless meteorological conditions are such as to allow flight under Visual Flight Rules;
 - (ii) without the permission of the landowner or manager;
 - (iv) above any point on the surface closer to any area occupied by spectators or their vehicles than that specified in the 'minimum lateral separation distances between display aircraft and crowd line' table in Chapter 5 of CAP403 as appropriate to the display speed of the aircraft;
 - (iv) unless that in the event of an emergency arising, the aircraft can be landed without danger to persons or property;
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4. This Exemption shall have effect during the effective times of **ADOC-1234** on **01 July 2024** unless previously revoked.



Appropriate Permission



Minimum Crew:

CAP403 para 6.54:

No persons other than minimum crew, as detailed in the aircraft Certificate of Airworthiness or Permit to Fly, are permitted onboard a civil registered aircraft during a Flying Display unless the prior written Permission of the [CAA GA Unit](#) has been obtained.



Pre-Display Admin Checks

Questions?

Philip Brown

Flight Standards Officer

CAA Air Display Regulation Team

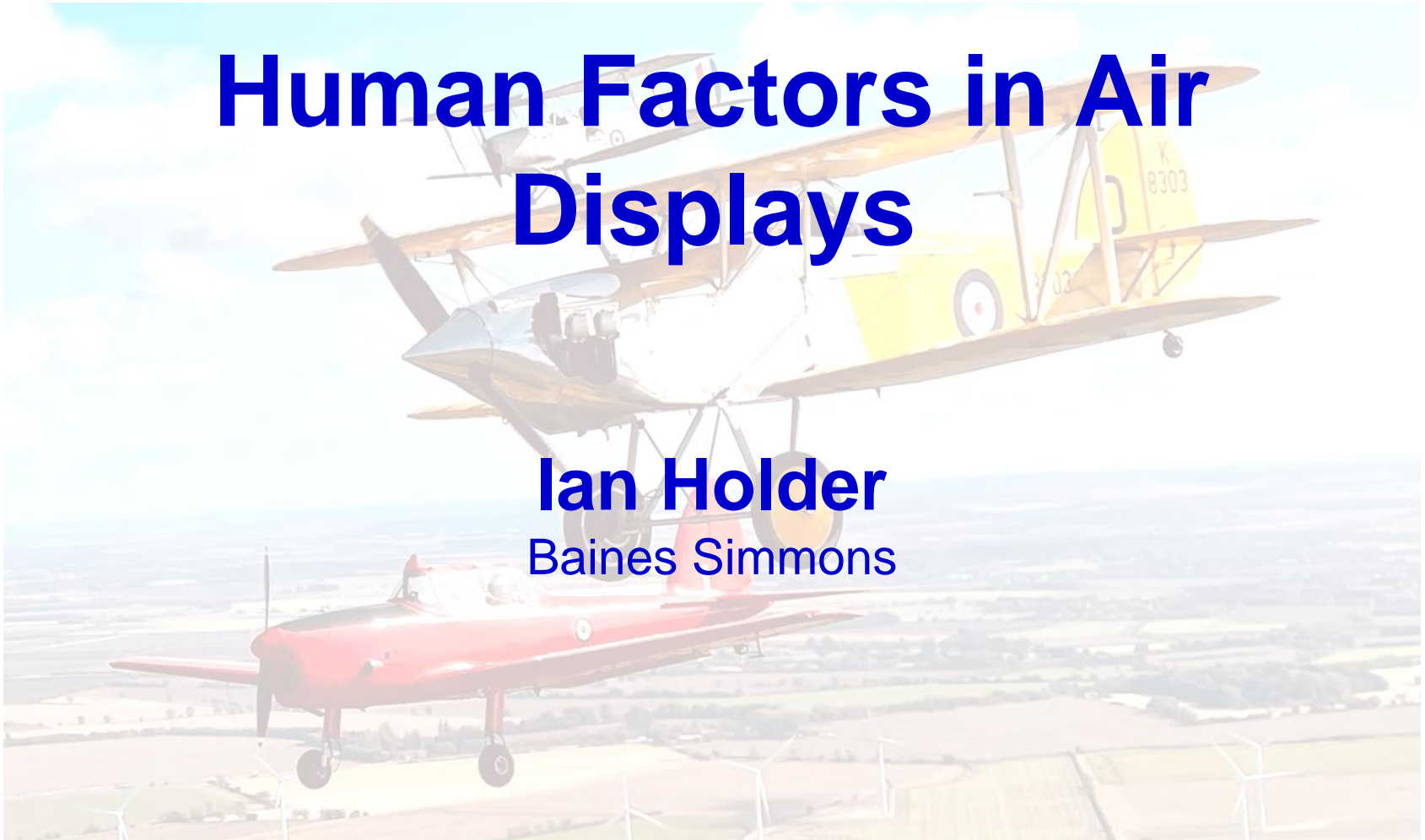


**Tea Break,
Tea Break,
GO!**



Human Factors in Air Displays

Ian Holder
Baines Simmons





BADA Update

Matt Wilkins

Chairman
BADA





Confessions of a Display Pilot



Expect the unexpected!

Ian Smith
DAE





PHOTO: ©2015 JOHN M. DIBBS



Richard Paves Photography 2022



Richard Paver Photography 2007



MK XIX SPITFIRE JULY 2011



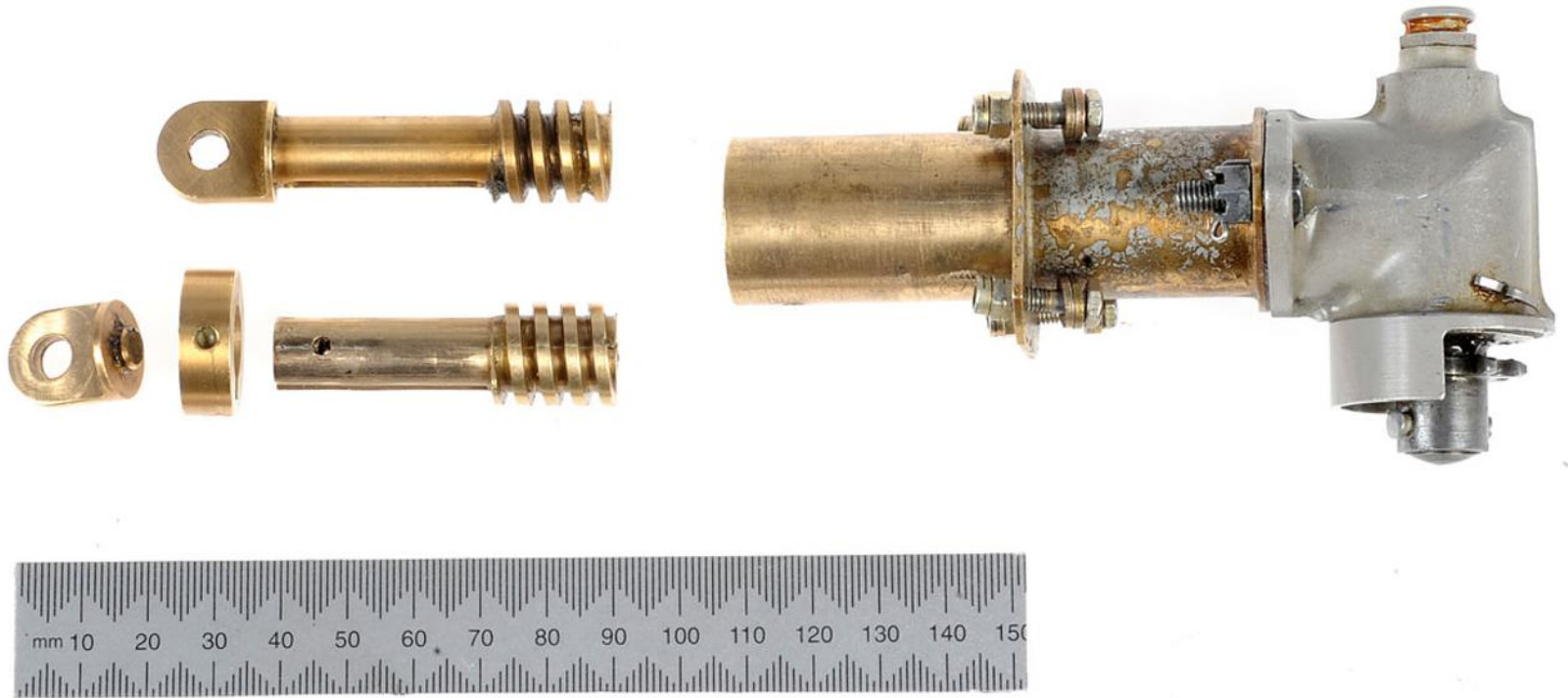




PHOTO: © 2019 JOHN M. DIBBS





THE MONOS

A TYRO DISPLAY TEAM
2023





TO BE DISCUSSED

- ABOUT US & WHY WE DID IT
- BECOMING A DISPLAY PILOT
- WHAT WE ENJOYED
- WHAT WE LEARNT (THE HARD WAY)
- WHAT'S NEXT





ABOUT THE MONOS



BRUCE BUGLASS LEAD

- Aged 23, 1000hrs
- Airfield Manager at Sleaf EGCV
- FDD & EO of SleafKosh Airshow



BEN GILMORE FORMATION

- Aged 22, 1400hrs
- Skydive Cessna Caravan Pilot (& massive plane nerd)

Visit www.monodisplay.co.uk for more



BECOMING A DISPLAY PILOT

- Too many visits to the pub turned into reality!
- Learnt at Sleaf (Long Term Exemption)
- John Beattie & Dave Barrell DAEs
- Putting a routine together!





WHAT WE ENJOYED...

- Summer evenings practicing
- Midlands Air Festival, First Display
- Duxford, 8 Displays Later



© Matthew Queen



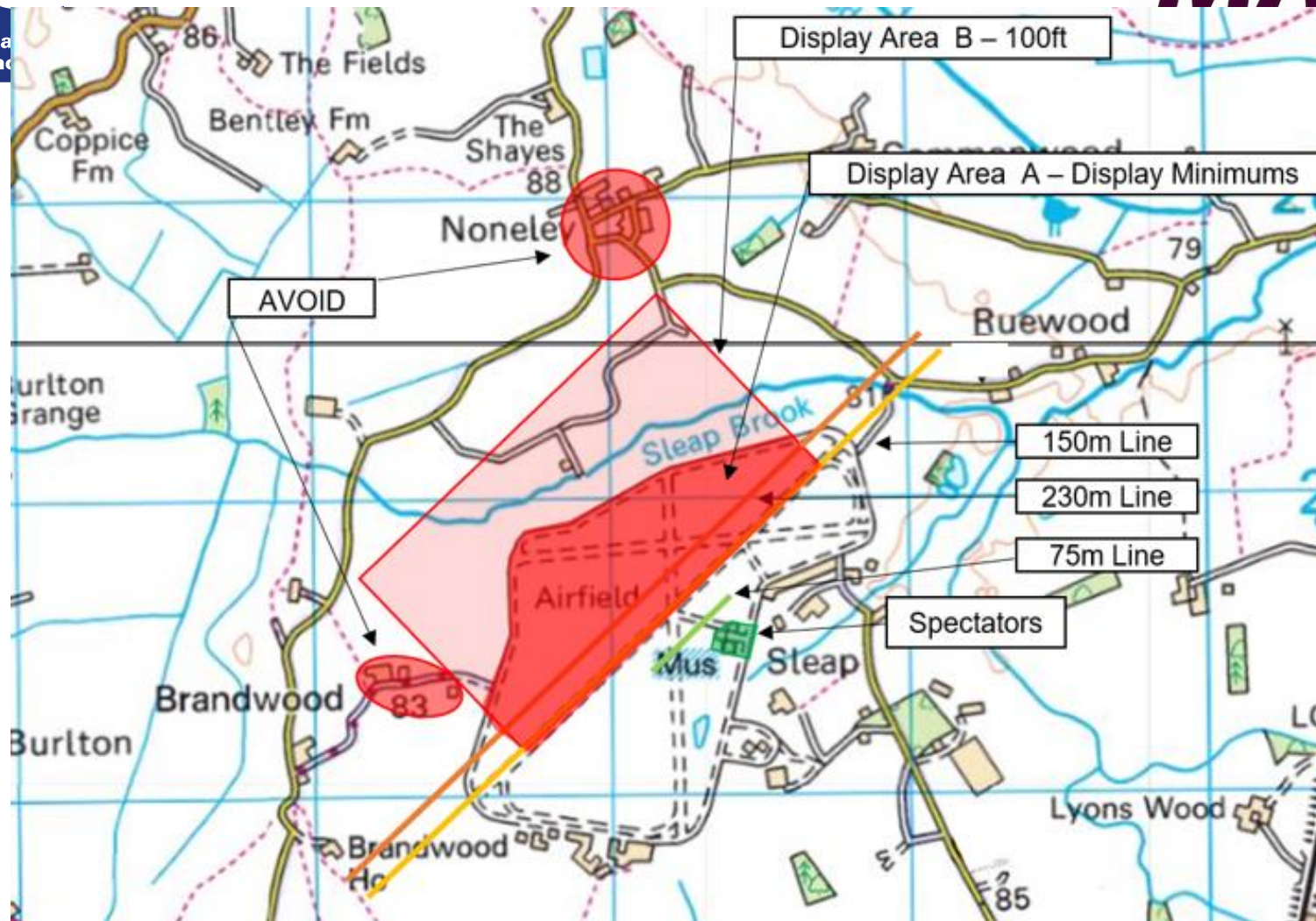
WHAT WE LEARNT...

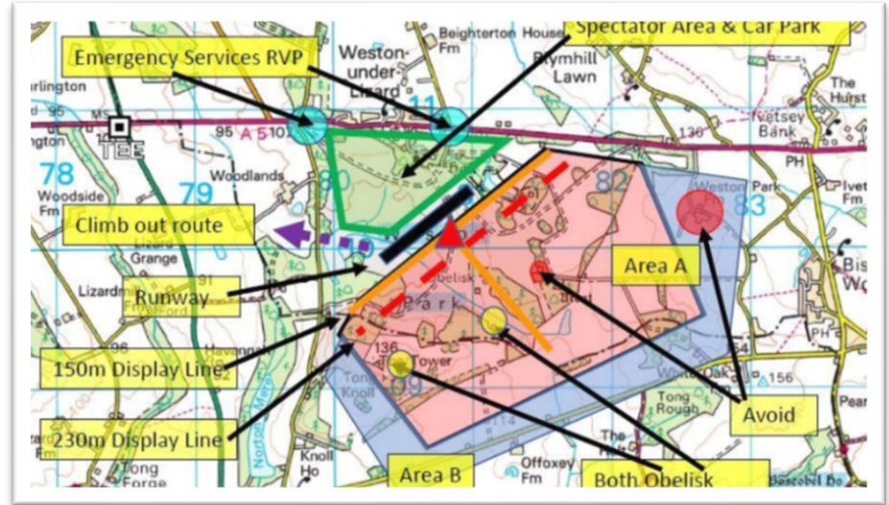
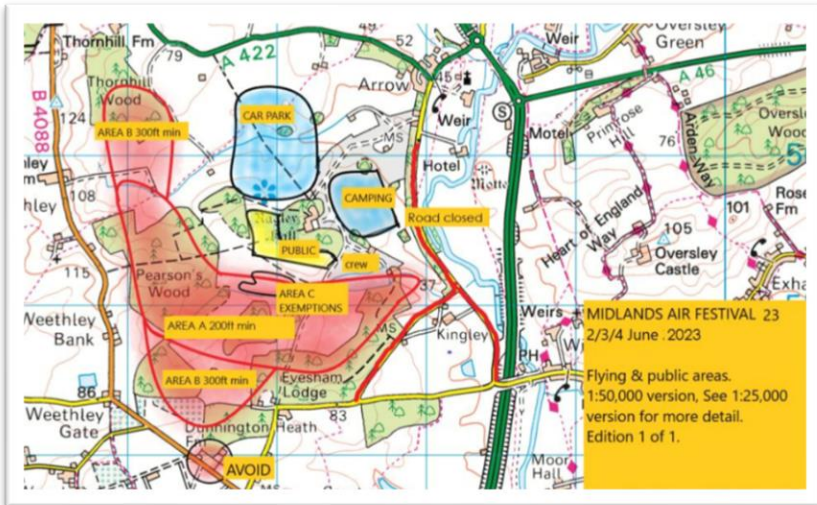
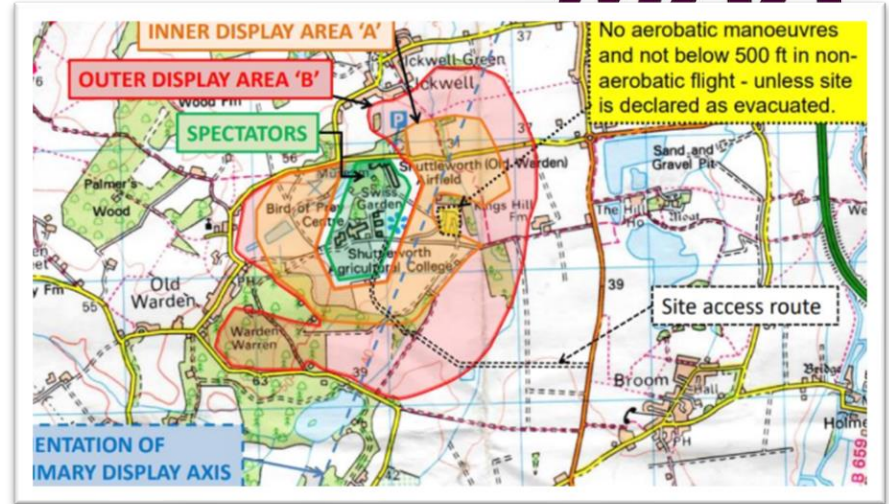
- Transits are the hard bit and can be somewhat scary (and slow!)
- There's a lot more to learn than just CAP403 & 1724



- The display community is a surprisingly nice bunch! ;)
- Different display venues require more changes to the display routine than we expected









WHAT'S NEXT?





Military Aviation Authority
MAA

ANY QUESTIONS?



BRUCE@CUBAN8.CO.UK
07823 555228

**JOIN US AT OUR
FLY-IN AIRSHOW
AT SLEAPKOSH ON
JULY 12TH-14TH!!!**





0900 Start – 20 Mar 2024

The Bar is Open