

Welcome

The aim of this Post Season Flying Display Symposium is to learn from the 2019 Display Season in preparation for the future

Regulator Feedback

Chris Kidd - Civil Aviation Authority

Wg Cdr Marshall Kinnear - Military Aviation Authority

Scope

- Context for Display Season 2019
- Facts, Figures, Safety Information and Trends
- Good Practice
- Forward Look
- Regulator Priorities
- How you can help



Context for Display Season 19 – CAA

- Stable joined up regulatory environment
- CAP 403, CAP 1724 and RA 2335 all issued in good time
- Aligned Public and Private Flying Display requirements
- Flying Display Directors Accreditation Course completed early
- Display Authorisation Evaluator standardisation continued

Context for Display Season 19 – CAA

- Embedded performance based inspection regime
- Pre-Season Symposium presentations published on CAA website
- Display Season 2019 Mid-Season Update published on Skywise in July
- Greater use of web based forms and Skywise
 - e.g. new Display Authorisation Application Form - SRG 1300
- Excellent engagement of Flying Display Focus Group
 - thank you to all those who volunteered to participate!

Context for Display Season 19 – CAA

- However, we still had a few issues.....
- CAP 1724 was not a mature document and still needs work which caused issues for you and us
- SRG 1300 suffered from a number of teething problems despite it having been tested by DAEs prior to release
- Turnaround of DA applications was initially extremely very poor on the CAA's part but improved significantly after an internal change
- A number of applications were still being submitted very late (some as late as 4 days prior to the event!)

Context for Display Season 19 – MAA

- RA 2335 published in March 2019 without any major changes
 - Secondary Spectators, Waring Calls, FDD Accreditation and Weather Minima
- Display Teams understanding of the regulatory intent improved
 - Display Team - DDH - ODH - SDH engagement improved awareness of risks
 - Risk based discussion resulted in greater emphasis on hazard mitigations
 - RA2335 Regulatory Waivers for Display Season were issued relatively late
- Positive feedback on the Flying Display Director Accreditation Course
 - Pre-Course Homework enabled candidates to consider planning constraints
 - Use of electronic devices provided immediate feedback on comprehension
 - Addressed the key issues associated with the management of a complex display
- Flying Display Director Accreditation Process
 - Accreditation Panel consideration of Flying Display related experience
 - FDD Upgrade process and selection of military FDD Mentors is a challenge

Facts and Figures for Display Season 19

	DS 17	DS 18	DS 19
Number of Mil Regulated Fg Displays	46	43	34
Number of Mil only over non-MOD Property	15	8	2

	<u>RAF</u>	<u>RN</u>	<u>JHC</u>
• Total assets employed	824	105	72
Type of participation			
• Flying Displays	176	19	17
• Flypasts	603	22	29

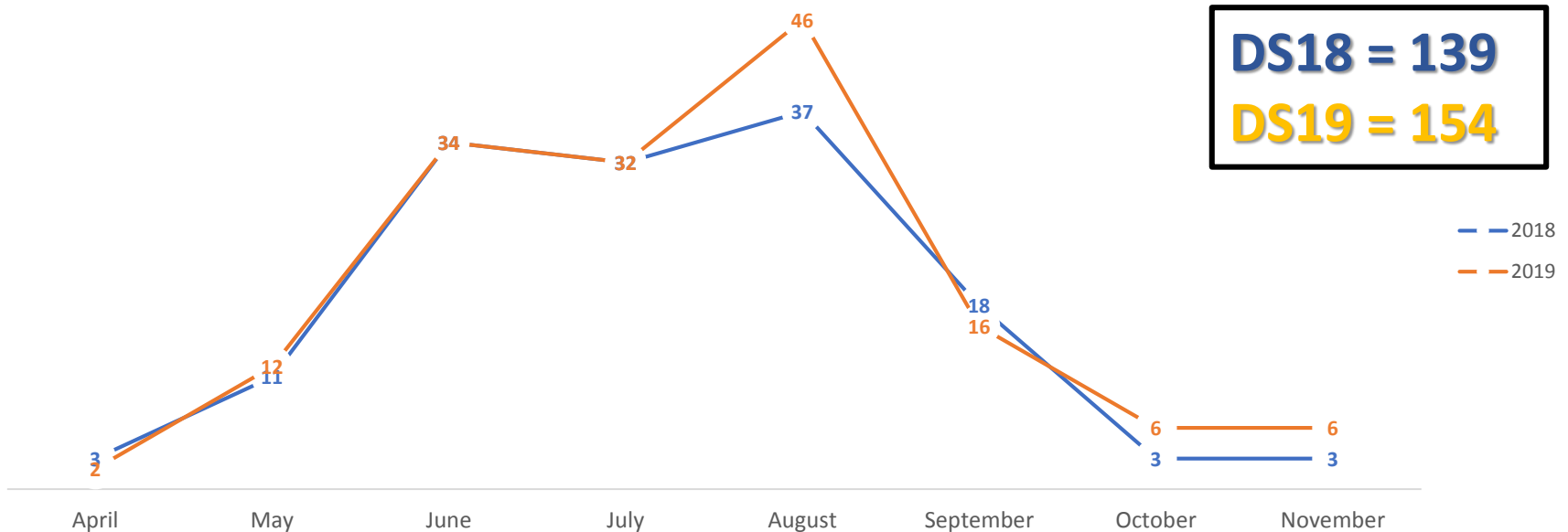
Facts and Figures for Display Season 19

	DS 17	DS 18	DS 19
Number of Article 86 Events	144	139	152
Number of SERA Flying displays	51	62	51
Applications arriving with less than 42 days to go	45%	36%	22%
Applications arriving with less than 14 days to go	9%	9%	6%
Permissions issued with less than 14 days to go	36%	20%	11%
Permissions issued with less than 7 days to go	29%	9%	13%

Facts and Figures for Display Season 19

- 2018 to 2019 Comparison

NUMBER OF ARTICLE 86 FLYING DISPLAYS 2018 - 2019 BY MONTH

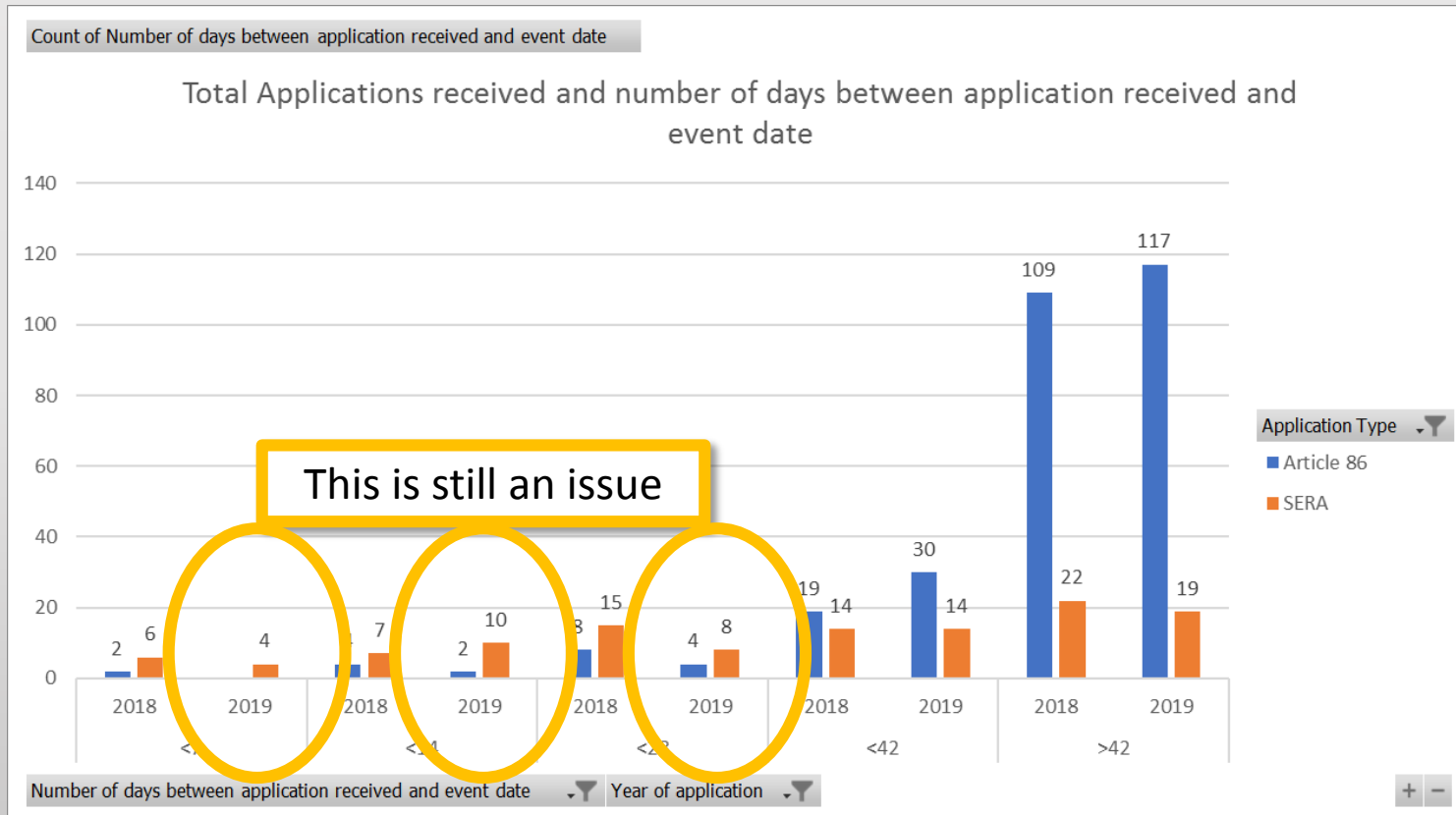


Facts and Figures for Display Season 19

	DS 17	DS 18	DS 19
FDD reports returned to CAA	82%	100% (10% required chasing)	100% (9% required chasing)
Number of 'Stop' calls	0	0	2
Number of 'Too low' calls	10	16	18
Number of 'Too Close' calls	8	19	24
Number of 'Terminate' calls	3	2	2

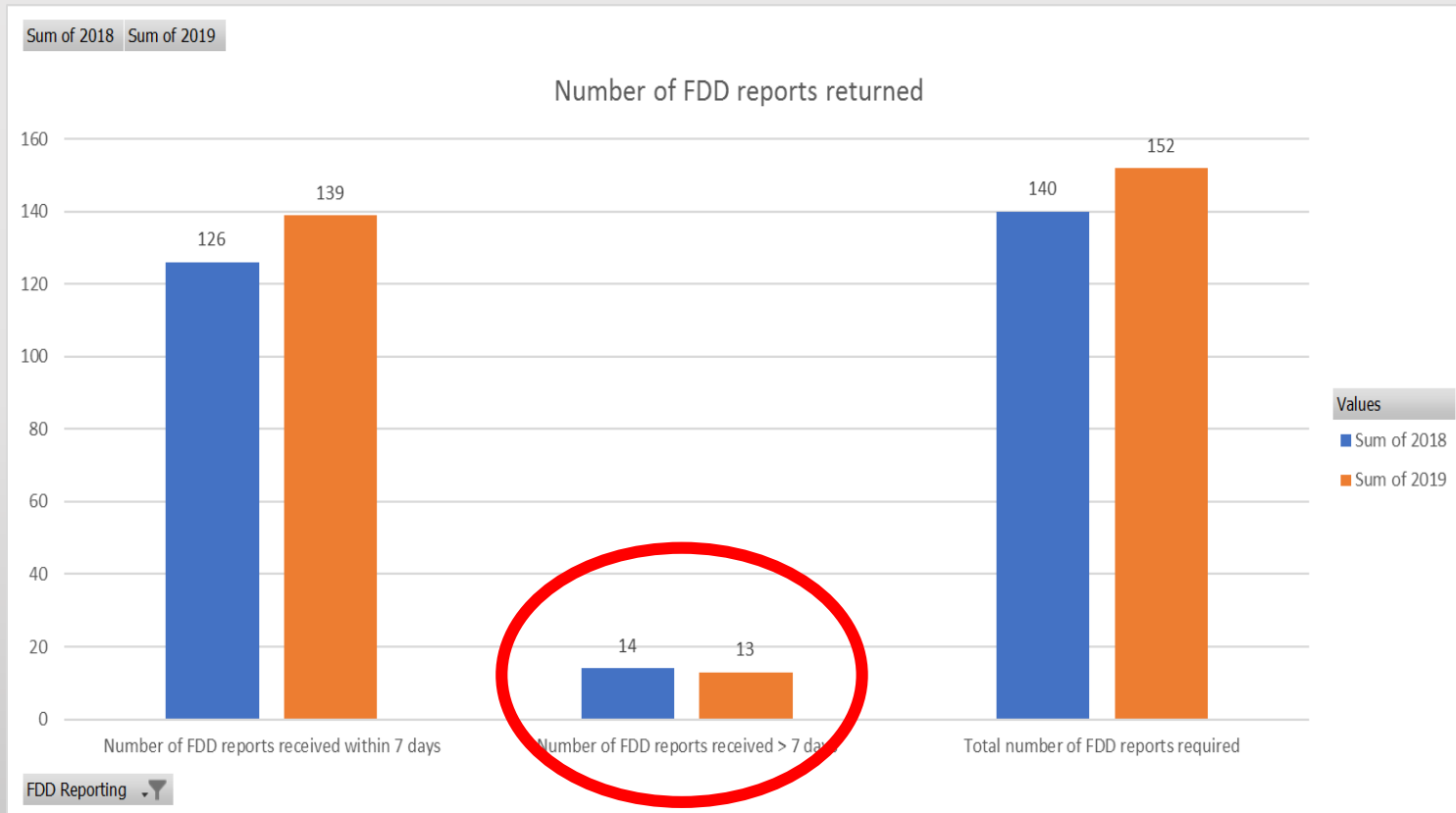
Facts and Figures for Display Season 19

- A generally good picture



Facts and Figures for Display Season 19

- 9% of FDDs didn't return a FDD report within 7 days of the display



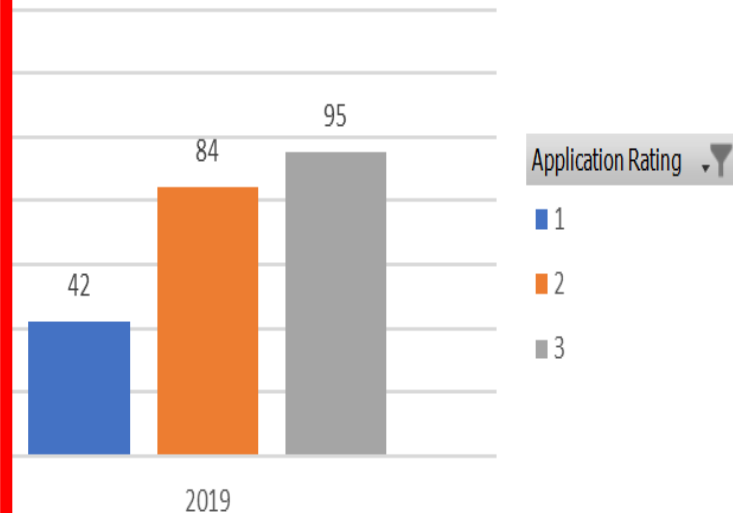
Facts and Figures for Display Season 19

- 58% of applications were considered to be of average or poor quality

Count of Application Rating

Application Quality Rating

Not completing the application form correctly, not providing a map, not providing a Risk Assessment, not signing the Risk Assessment, providing Google Earth images instead of a 1:50000 map, not producing a comprehensive risk assessment, omitting police details, taking excessively long to respond to emails



Year of application

Facts and Figures for Display Season 19

- DS19 Safety Data



Facts and Figures for Display Season 19

- DS19 Safety Survey

- Comments from the survey made by respondents:

Fear of a "Stop" call causing pilots to be distracted and fly in a way they wouldn't if this fear was not present

Ill-discipline of some pre-Shoreham era pilots.

Too much emphasis required by the pilot on avoids within the display area. Too much of a requirement concerned with not breaking the multitude of avoids and or regulations instead of flying the aircraft as the primary concern.

1. Lack of military HOEs understanding of regulations for flying displays when they are ultimately responsible. 2. HOEs making pilots change their routine because of a perceived 'risk' when actually they safest course of action is just to allow them to fly their normal routine. 3. A lack of coherence between military and civilian regulations.

Over complication of rules and processes leading to more time spent on admin and less time spent on practicing actual displays. The revalidation process is a case in point, as is the Symposium, which is expensive on both time and money for those who are forced to attend. There is rarely anything of interest at the event, and the venue doesn't support the networking and story sharing that was such a great feature of the old style gatherings.

I would like to see the quality and comprehensiveness of pilots' briefings improved. There are some good examples, but also some mediocre ones.

The complexity of CAP403 is still a cause for concern. There is clear evidence that FDD's and pilots are coming to terms with the document given that there has been a period of relative stability but even so there is room for simplifying matters to ensure that the pilot's focus is on SAFE flying not avoiding every little obstruction around the display area!

- 56 respondents

- Generally upward trending situation regarding safety

- No trends

Facts and Figures for Display Season 19

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

	2018		2019	
	AGREE	STRONGLY AGREE	AGREE	STRONGLY AGREE
Have a strong safety culture	27.87%	65.57%	25.00%	69.64%
Rarely deviate from operating procedures, flying regulations or general flight discipline	26.23%	59.02%	23.21%	69.64%
Report all adverse incidents, near misses and issues encountered during a flying display	24.14%	46.55%	20.00%	58.18%
Operate a just culture where the reporting of safety violations, unsafe behaviour or human error is Encouraged	32.76%	44.83%	26.79%	51.79%

Facts and Figures for Display Season 19

- What do you consider to be the most significant actions EOs / FDDs / DAs / SAGs can take to improve air display safety.....
- 4 Themes: Honest reporting, problems with 'old school' guys, better FDD briefings, simplify the regulations.

2018	2019
<p>Maintain the high integrity and honest feedback. There is still a little more we can do to encourage open reporting from DAs, FDDs and the feedback on incidents from the regulator. Examples of just culture will re-enforce this.</p>	<p>Open and honest reporting in a Just Culture so that people can learn from errors and mistakes without fear of retribution. I think that the civilian world is still well behind the military in this respect.</p>
<p>There needs to be an acknowledgement that no matter how experienced you are in your role there is always something to learn, even if it mean listening to new and lesser experienced team members. Their opinion and ideas also have validity</p>	<p>Get rid of the regime of "old school" FDD's who pitch up on the day and know nothing about the site or event. V poor brief by FDD.</p>
<p>Give better briefings and ensure that everyone (including those not present at the brief) understand what is required and apply that knowledge consistently.</p>	<p>Consistency of approach across safety related matters from presentation of documents (by DA holders) to common Pilot Briefing documents (by FDD's) for example.</p>
<p>Strive for simplification of the current regulatory system - the complexity requires that display pilots primary task of safe flying is being overridden by concerns over complying with overly complex regulations.</p>	<p>Simplify the rules and reduce the size of the rule books. This way you have more chance of the display pilots properly reading and understanding them.</p>

Facts and Figures for Display Season 19

- What is the biggest air display-related safety concern you have.....

2018	2019
<p>Short notice formation flights flown by formation members who haven't flown together before or had an opportunity to practice together</p>	<p>The rise in the use of Drones/UAVs in the vicinity of display venues and the risk of MAC with an aero-system.</p>
<p>Ridiculous and impractical restrictions placed on various sites, causing potentially wildly unstable flight paths and reducing the pilot's capacity in focusing on the primary task of flying the aircraft. It appears at times that the persons who produce the Permissions have no grasp of the essentials or practical experience of display flying.</p>	<p>Some of the best pilots are the older ones but those responsible for supervision need to carefully monitor for any signs of slowing up or other age related issues. Separately, any signs of over-confidence, arrogance or non-acceptance of criticism are warning signs.</p>
<p>Participants who fail to properly prepare for each individual display venue by reading the pilots notes / operation order in full and digesting the information in good time ahead of the event</p>	<p>Pilots flying too many shows in a short period of time. Therefore not having enough time to focus on the specific operating procedures for one specific site.</p>
<p>Undue pressure on participants caused by the fear of 'STOP' calls</p>	<p>The lack of a just culture from the CAA. The CAA have demonstrated their resolve in the past to punish people for making mistakes, therefore nobody will talk to them any more and we don't all get the opportunity to learn from events that could prevent accidents unless you seek out the individuals involved if they and you are willing / comfortable.</p>

Good Practice

- Like last year, we saw some really great things over the course of this DS
- Some FDDs/FCCs were excellent, pre-briefing the next item, display minima, minimum separation distance, who is looking at what etc.
- Minima matrices so that all FCC know what each item is cleared to
- FDD use of Dropbox for pilot documents
- Positive Display Pilot / FDD pre-display interactions

Good Practice

- Early FDD planning
- Suitably large Display Areas
- Simple A and B Display Areas
- Display Areas that were free of avoids



Prevents pilots having to worry about multiple heights and multiple avoids
enables them to concentrate on flying a good safe display

Trends

- FDD/FCC
 - Large variation in the quality of the Pilot's Notes
 - Poor or lack of Display Line markings
 - Variation in FDD scrutiny of Display Pilot submissions
 - FDD/FCC monitoring of the Flying Display in the round
 - FDD/FCC awareness of Display Minima

Trends

- Warning Calls
 - Use your judgement, an opportunity may present itself to make the call to the pilot during the display, other times it may have to wait until the debrief.
 - You are there to help the pilot get their eye in, they might be having a bad day and they just need a little bit of help

Remember, CAP 403 states: *FDDs should consider **the safest and most appropriate time** to make a Warning, Terminate or STOP Call and to not jeopardise safety by causing an unnecessary distraction for the pilot at a critical point during their display.*

Trends

- Pilots
 - Large variation on SRG 1327 submitted by DAs
 - Vital information such as latent hazards missing
 - Forms illegible
 - Incorrect dates on forms
 - DA numbers missing



Good Practice – Military

- Early designation of Display Areas and dissemination of Pilots Notes
- Early identification of hazards and nomination of mitigation ownership
- Comprehensive briefings with detailed review of the Flying Programme
- Flying Control Committee oversight of Formation Briefings
- Flying Control Committee Maintenance of Situational Awareness
- Flying Control Committee Management of Regulatory Infringements

Trends and Lessons - Military

Only 2nd year using risk-based assurance methodology

- Delayed confirmation of RN/RAF/JHC Events Team commitments for 2019
- Notification of MAA assurance visits was issued much later than anticipated

Foreign Military Approvals presented the greatest challenge

- Limited information provided on display sequences and national approvals
- Limited scrutiny by Flying Display Directors prior to submission to MAA
- The timelines associated with some foreign military approvals were short
- FDD to consider regulatory compliance and suitability for their venue
- MAA assessment of pilot competence and their national approval
- Validations for limited experience or to check regulatory compliance

Incident Reporting (DASOR) identification (#flying_display)

- Limited ability to identify incidents and share lessons in timely manner

Automated submission of RA 2335 Form's was ineffective

Trends and Lessons - Military

Arrivals and Departures – supervision before and after major events

Risk Assessments - hazard identification and mitigation / management

Display Line Marking – must be visible for all participants / 450m line

Display Monitoring

- Monitoring the Display Line from the crowd line is challenging
- Warning and Stop Calls are intended to assist the Display Pilot
- FDD and FCC should apply judgement on when to make a call
- Record and debrief Warning Calls not made by the FDD or FCC

Forward Look

- CAP 403 Ed 17
 - Public consultation began on **4 November 2019**
 - No major changes to affect Display Season 2020
- CAP 1724, Display Standards Document
 - Reworked some areas of ambiguity
 - Made it clearer
 - Overhauled DA renewal requirements
 - Planned issue date for consultation with you is **18 November 2019 – Monday!**



Forward Look

- Complete review of DA and DAE system
 - Building on work started last year

- Complete review of all the application forms for everything!
 - Tweaks to the online Flying Display Application form
 - Amendment to SRG 1300
 - Amendment to SRG 1328

- Issuing of CAP 403 and CAP 1724
 - CAP 403 scheduled to be issued in its final form on or before 10 January
 - CAP 1724 scheduled to be issued on or before 31 January

Please contribute to the consultations – we need your input!

Forward Look

- Continued alignment of LTEs to calendar year
 - Please apply for your LTEs/LTPs **this month** and we will then issue you them for the whole of 2020
- Pre- Season Symposium dates: **17-18 March 2020**
- Analysis of the recently issued Safety Survey
 - Results will be made available via the CAA website
 - Thank you to those of you who participated!

Forward Look

- **Flying Display Director Accreditation Courses** are now managed and delivered by TSA Consulting Ltd on behalf of the CAA and MAA
- The CAA/MAA retain responsibility for the FDD Accreditation Process
- Dates:
 - 7 Oct – FDD Website went live (www.fddtraining.co.uk)
 - 1 Dec 19 – Closing Date for Refresher Course Applications
 - 5 Dec 19 – FDD Refresher Course Joining Instructions issued
 - 1 Jan 20 – Closing Date for Initial Course Applications
 - 8 Jan 20 – FDD Initial Course Joining Instructions issued
 - 16 Jan 20 – FDD Refresher Course (Shrivenham)
 - 1 Feb 20 – FDD Refresher Course (Sywell Aerodrome)
 - 18-19 Feb 20 – FDD Initial Course (Shrivenham)

Forward Look

- **AFDD Courses**

- Details for AFDD course will be promulgated by Easter 2020
- Likely to be an online course of some description
- Course completion window will be 14 March – 31 May 2020
- For 2020 – AFDDs are **strongly recommended** to complete the course

From 2021 the course will be mandatory for all DA holders wishing to conduct an AFDD role

Forward Look - Military

- RA 2335 – Flying Displays and Flypasts
 - Notice of Proposed Amendments (NPA) by **4 December 2019**
 - Enable alignment with amendments to CAP 403
 - Anticipated amendments for Display Season 2020
 - Revise RA 2335 Forms to provide further information on events (Form 1) and more display sequence information for foreign military approvals (Form 2)
 - Alignment of MAA and CAA Post Display Feedback Form (Form 4)
- Development of Flying Display Director Accreditation process
 - Increase Flying Display Director experience
 - Identification of Flying Display Director Mentors

MAA Priorities

- Continue to work together with the display community and the CAA to develop and deliver an appropriate and consistent approach to Flying Display regulation
- Improve Foreign Military Approvals process
- Improve the FDD Accreditation process
- Publish the Display Flying Handbook

CAA Priorities

- Continue to work together with the display community for the benefit of the display community
- Continue to build on the success of the FDFG
- Continue to work hard for you



How you can help

- Apply for your Flying Display 42 days or greater from the date of the event
- Continue to provide us with FDD feedback within 7 days
- Feedback through whatever means you can, email, telephone etc
- Engage with the CAP 403 and DSD consultations, we want your inputs!
- Volunteer to be part of the CAA Flying Display Focus Group, be part of the solution!

Final points

- We want you all, and the public, to have a safe DS20. How do we **all** achieve this?
- It needs EOs and FDDs to consider the hazards associated with their event and do their best to minimize them
- It needs FDDs to understand what affects a pilot during a display
- It needs pilots to stick to their limits and understand the pertinent risks at events

..... and finally

- It needs pilots to be able to concentrate on flying their display and not focus on avoids
- It needs the CAA and MAA to support you through active engagement
- If, in the run up to, or during DS20, we are not supporting you, then please let us know!

Any Questions?

GA@caa.co.uk

DSA-MAA-Displays@mod.gov.uk

Sign up to Skywise