

Issued: 24 July 2017

Aerodrome Rescue and Fire Fighting Service – Provision of Fire Extinguishing Agents

This Information Notice contains information that is for guidance and/or awareness.

Recipients are asked to ensure that this Information Notice is copied to all members of their staff who may have an interest in the information (including any 'in-house' or contracted maintenance organisations and relevant outside contractors).

Applicability:	
Aerodromes:	All Licensed/Certificated Aerodrome Operators
Air Traffic:	Not primarily affected
Airspace:	Not primarily affected
Airworthiness:	Not primarily affected
Flight Operations:	Not primarily affected
Licensed/Unlicensed Personnel:	Not primarily affected

1 Introduction

- 1.1 **CAP168** (Licensing of Aerodromes) makes provision for all aerodrome operators to substitute complementary fire extinguishing agent or water at given substitution rates. In addition, at aerodromes where the selected complementary agent is a dry powder, a further concession to reduce the quantity provided is allowed when a high performance type is used.
- 1.2 The purpose of this Information Notice (IN) is to inform aerodrome operators that the CAA intends to withdraw UK Alternative Means of Compliance (AltMoC) 4 (see **CAP1168**), and change CAP168 Chapter 8 to align the complementary extinguishing agent requirements at UK licensed and certificated aerodromes with the standards and recommended practices of ICAO Annex 14, and EASA acceptable means of compliance (AMC) to Commission Regulation (EU) No 139/2014 (hereafter referred to as Part 139).

2 Scope

- 2.1 Aerodrome operators at licensed or certificated aerodromes are required to review the provision of complementary extinguishing agent to ensure the quantities provided comply with the changed requirements described below by the stated implementation dates (see para 3.13)

3 Further Information

- 3.1 EASA Part 139, and its supporting AMC, is aligned to ICAO annex 14 in respect of the provision of complementary extinguishing agent.

- 3.2 ICAO Annex 14 and Part 139 allow up to 100% of the minimum quantity of water required at RFFS category 1 and 2 aerodromes, to be substituted with complementary agent at specified substitution rates.
- 3.3 Until now CAP168 has not limited the provision for substitution of extinguishing agents to RFFS category 1 and 2 aerodromes; in addition, CAP168 states that complementary agent or water may be replaced through substitution.
- 3.4 There is also a concession in CAP168 that allows the required amount of dry powder to be reduced by 50% if a 'high performance' type is used. Neither ICAO Annex 14 nor EASA Part 139 makes provision for this concession.
- 3.5 In order to retain the UKs different requirements in respect of the provision of complementary agent, a difference was filed with ICAO, and an alternative means of compliance (AltMoC) to the EASA Part 139 AMC was proposed, this AltMoC was subsequently published in CAP1168.
- 3.6 As part of the EASA standardisation process the CAA has been asked to review the AltMoC to determine whether it is still required, and to ensure that, if an aerodrome operator makes use of the AltMoC, an equivalent level of safety can be achieved.
- 3.7 As a part of the review the CAA carried out an assessment and an online survey to determine the possible impact of withdrawing the AltMoC and removing the concessions from CAP168 Chapter 8. Details of the survey results can be found at [Appendix 2](#).
- 3.8 As a result of the review of the UK AltMoC, and the subsequent impact assessment, the CAA intends to withdraw the AltMoC and cancel the difference that has been filed with ICAO. Further to this, the CAA also intends to make changes to CAP168 to align the requirements of UK licensed aerodromes with ICAO Annex 14 requirements. This will have the effect of harmonising the requirements for the provision of complementary extinguishing agents at all licensed and certificated aerodromes in the UK (See [Appendix 1](#) for details of the revisions to CAP168).
- 3.9 Changes to CAP168 will limit the concession to substitute up to 100% of water for complementary agent, to RFFS category 1 and 2 aerodromes only.
- 3.10 The concession to reduce the amount of dry powder by providing a high performance type will be removed for all aerodromes.
- 3.11 EASA aerodrome operators who wish to reduce the amount of dry powder by providing a high performance type have the option to submit an AltMoC to the CAA for approval in accordance with ADR.OR.A.015.
- 3.12 Aerodromes who operate to the requirements of CAP168, and who wish to reduce the amount of dry powder by providing a high performance type, may apply to the CAA for such a concession. The application must be supported by an assessment that shows how the aerodrome operator is assured that the lower quantity of dry powder can provide an equivalent level of fire extinguishing performance for the types of fires where complementary agent is expected to be used.
- 3.13 To make provision for aerodrome operators to plan for the implementation of the changes, the following time-line will be applied:

01 January 2020 – all aerodromes operating to EASA Part ADR.139 requirements must meet the minimum complementary extinguishing agent quantity outlined in AMC4 ADR.OPS.B.010(a)(2) or have in place an AltMoC approved by CAA (see 3.11 above)

01 January 2020 – UK AltMoC4 ADR.OPS.B.010(a)(2) will be removed from CAP1168.

01 January 2020 – all aerodromes operating to the requirements of CAP168 must comply with the requirements of the revisions contained in [Appendix 1](#) of this IN.

01 January 2020 – the revisions to CAP168 contained in [Appendix 1](#) of this IN will come into force and will be included in CAP168 at the next scheduled update.

4 Queries

- 4.1 Any queries or requests for further guidance as a result of this communication should be addressed to:

Airspace, ATM and Aerodromes
Safety and Airspace Regulation Group
Civil Aviation Authority
1NE Aviation House
Gatwick Airport South
RH6 0YR

E-mail: aerodromes@caa.co.uk

5 Cancellation

- 5.1 This Information Notice will remain in force until further notice.

Appendix 1: CAP168 – Licensing of Aerodromes (Edition 10) Amendments

The amendments to CAP 168 Chapter 8 detailed below, which have been made to ensure alignment with the requirements of ICAO Annex 14 Vol 1 (7th Edition), will come into effect on 01 January 2020.

The text of the amendment is arranged to show deleted, new or amended text, as shown below:

(a) deleted text is marked with strike through;

(b) new or amended text is highlighted in grey; and

(c) an ellipsis (...) indicates that the remaining text is unchanged in front of or following the reflected amendment

CAP168 – Chapter 8

Complementary extinguishing agents

(...)

~~8.76 For media substitution a maximum of 50% of complementary media or water may be replaced according to the following rates when using performance level B foam:~~

~~1 kg of gaseous agent or dry powder = 0.66 litres of water.~~

~~2 kg of CO₂ = 0.66 litres of water.~~

~~8.776~~ If a 'high performance' dry powder is used the amount required may be reduced by 50% it may be permissible to reduce the minimum amount provided.

8.77 If an aerodrome operator wishes to reduce the quantity of dry powder provided (as outlined in 8.76 above) they must apply to CAA for such a concession. The application must be supported by an assessment that shows how the aerodrome operator is assured that the lower quantity of dry powder can provide an equivalent level of fire extinguishing performance for the types of fires where the agent is expected to be used.

Note: High performance dry powders should be produced in accordance with the EN 615 standard. In tests 1.5 kg of powder should extinguish a 144B tray with a surface area of 4.52 m².

(...)

CAP168 – Chapter 8 Appendix 8A – Surface Level Heliports

Extinguishing agents

(...)

26. ~~For media substitution a maximum of 50% of complementary media or water may be replaced according to the following rates when using performance level B foam:~~ At a surface-level heliport it is permissible to replace all or part of the amount of water for foam production by complementary agents. For the purpose of replacing water for foam production with complementary agent the following equivalents should be used:

1 kg of gaseous agent or dry powder = 0.66 litres of water for the production of a foam meeting performance level B.

2 kg of CO₂ = 0.66 litres of water for the production of a foam meeting performance level B.

27. If a 'high performance' dry powder is used the amount required may be reduced by 50%. it may be permissible to reduce the minimum amount provided. For details see Chapter 8 paragraph 8.77 above.

(...)

CAP168 – Chapter 8 Appendix 8B – RFFS Requirements at category 1 and 2 Aerodromes

Extinguishing agents

(...)

19. For media substitution a maximum of 50% of complementary media or water may be replaced according to the following rates when using performance level B foam: At aerodrome categories 1 and 2 up to 100% of the water may be substituted with complementary agents. For the purpose of substitution the following equivalents should be applied:

1 kg of gaseous agent or dry powder = 0.66 litres of water for the production of a foam meeting performance level B.

2 kg of CO₂ = 0.66 litres of water for the production of a foam meeting performance level B.

20. If a 'high performance' dry powder is used the amount required may be reduced by 50%. it may be permissible to reduce the minimum amount provided. For details see Chapter 8 paragraph 8.77 above.

(...)

Appendix 2: Response to extinguishing agent survey

Q1	Does your aerodrome RFFS provide the minimum quantity of principal fire extinguishing agent (water and foam) as required for your promulgated RFFS category (without the need to use media substitution)?	
	Yes	98%
	No	2%
Q2	(only answered by those aerodromes who answered 'no' to Q1) As you answered no to the previous question, please state whether you meet the principal fire extinguishing agent requirements for your promulgated RFFS category by using 'media substitution'	
	Yes we use media substitution	67%
	No we do not use media substitution	33%

Q3	Does your aerodrome occasionally provide a higher level of RFFS for movements by larger aircraft (e.g aerodrome promulgating RFFS category 6 occasionally accepts movement of RFFS category 8 aircraft)?	
	Yes	71%
	No	29%

Q4	(only answered by those aerodromes who answered 'yes' to Q3) Does your aerodrome RFFS provide the minimum quantity of principal fire extinguishing agent (water and foam) as required for the higher RFFS category (without the need to use media substitution)?	
	Yes	97%
	No	3%

Q5	(only answered by those aerodromes who answered 'no' to Q4) As you answered 'No' to the previous question, please state whether you meet the principal fire extinguishing agent requirements for the higher RFFS category by using 'media substitution'	
	Yes	75%
	No	25%

Q6	Does your aerodrome RFFS provide the minimum quantity of complementary fire extinguishing agent (dry powder or gaseous agent) as required for your promulgated RFFS	
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	category (without the need to use media substitution or the high performance dry powder concession)?	
	Yes	82%
	No	18%

Q7	(only answered by those aerodromes who answered 'no' to Q6) As you answered 'No' to the previous question, please state whether you meet the complementary extinguishing agent requirements for your promulgated RFFS category by using 'media substitution'	
	Yes	100%
	No	0%

Q8	Does your aerodrome occasionally provide a higher level of RFFS for movements by larger aircraft (e.g aerodrome promulgating RFFS category 6 occasionally accepts movement of RFFS category 8 aircraft)?	
	Yes	71%
	No	29%

Q9	(only answered by those aerodromes who answered 'yes' to Q8) Does your aerodrome RFFS provide the minimum quantity of complementary fire extinguishing agent (dry powder or gaseous agent) as required for the higher RFFS category (without the need to use media substitution or the high performance dry powder concession)?	
	Yes	63%
	No	37%

Q10	For the promulgated RFFS category at your aerodrome, does the RFFS provide a lower quantity of dry powder than the minimum quantity normally required, by providing a high performance type?	
	Yes	24%
	No	76%

Q10	For occasions when your aerodrome operates a higher RFFS category than the promulgated one, does the RFFS provide a lower quantity of dry powder than the minimum quantity normally required, by providing a high performance type?	
	Yes	31%
	No	47%
	N/A	22%

Qualitative comments from Survey	CAA response
The answers completed do depend on which appliance/s are available & on line & the answers correspond to our lowest amounts of complementary media that would be available.	Comment noted, a lead in period has been proposed to allow aerodrome operators to address any shortfalls without causing a short term impact.(see para 3.13 above)
We currently meet our complimentary agent requirement through a combination of High Performance DP and CO2.	Comment noted
Exception to above would be when reserve vehicle is in operation. Lower quantity of powder carried & quantities of dry powder then complimented by provision of CO2.	Comment noted, a lead in period has been proposed to allow aerodrome operators to address any shortfalls without causing a short term impact.(see para 3.13 above)
Although we are not presently using the substitution rates for complementary extinguishing agents, it remains a useful management tool.	Comment noted
cat 6 = 24000 litres water 3000 litres type B foam concentrate 450 kg monnex fixed units 12 kg DP extinguishers 5 kg CO2 extinguisher	Information noted
XXXXXX utilise Monnex DP	Comment noted
XXXXXX RFFS use Monnex High Performance Dry Powder and also utilise 30Kg of CO2 to supplement Dry Powder as a gaseous agent.	Comment noted
<p>The discharge rates as shown in ICAO table 2-3 give 2.25kg/sec for Cat 7 and 4.5kg/sec for Cat 8. Due the loss of the Water/powder exchange, this could significantly affect smaller aerodromes when Increasing Cat. To meet the discharge rate for example for Cat 8 would require 2 Powder nozzles but I would think most Airfields combination would fall short of 4.5 kg/sec. This also would require the AFS to train with a minimum of 2 branches for dealing with Cat 8 Incidents. As technology moves forward this could well be resolved by HRET etc. but in the short term It is an area worthy of note during the transitional period requiring clarification In respect of Media required to be carried and its effective application/discharge.</p> <p>If the loss of the Media exchange goes ahead It will affect the media available should a vehicle be OTR that is a main powder carrier as In our case the Rosenbauer Panther would leave us short for Cat 8 Ops. It would be advantageous for the dispensation to remain as It would be much simpler when rotating vehicles In the short term when maintenance Issues arise due to unforeseen faults and negates the requirement for the hire of replacement vehicles which can host many safety and regulatory shortfalls.</p> <p>These problems as highlighted earlier are more prevalent to Aerodromes which are themselves transitioning up through various categories and may not have the sufficient resources or ability to react as efficiently as large Aerodromes can.</p>	Comments noted however, the concessions afforded by the substitution of extinguishing media, and the provision of high performance dry powder, applies to quantities only. Required minimum discharge rates for each aerodrome RFFS category remain as per Table 8.3 of CAP168 or AMC4 ADR.OPS.B.010(a)(2) Table 1. Also, a lead in period has been proposed to allow aerodrome operators to address any shortfalls without causing a short term impact.(see para 3.13 above)
Company objective is to maintain a level above the minimum media requirement	Comment noted

