



**CAP632 EDITION 8 DRAFT  
OPERATION OF  
PTF EX-MILITARY AIRCRAFT ON THE UK REGISTER  
FEEDBACK SUBMISSION**

**1. Position**

1.1 The Historic Aircraft Association (HAA) is established for the promotion of the restoration, preservation and safe flying of historic aircraft in the UK including ex-military aircraft as specified in CAP632.

1.2 There will likely be a number of feedback submissions from various operators of ex-military historic piston powered and turbine/turbojet powered aircraft. In particular the HAA liaises closely with various operators of ex-military aircraft including the Jet Operators Association that has provided a detailed Feedback Submission of its own. The HAA fully endorses the content of that submission compiled by Astral Aviation Consulting and has obtained permission to use it as a reference document.

**2. General Comments**

2.1 The HAA welcomes the opportunity to provide feedback on this proposed draft of Edition 8 of CAP632.

2.2 The HAA considers that the proposed document should concentrate on operational matters concerning ex-military aircraft and should not contain the additional content proposed that covers airworthiness and maintenance issues. These matters are adequately covered in BCAR's and specific airworthiness regulations provided in the 28-24/24 and A8-25 series of regulations. To repeat extracts from the BCAR's in the CAP632 is inappropriate, and should it be necessary to focus the attention of operators on airworthiness aspects of flight operations, then a cross reference to CAP 553 and the BCAR's is all that should be required.

2.3 In a similar vein it should not be necessary to "cut and paste" sections of the principles of SMS and Human Factors where these topics are adequately dealt with in other publications. Cross reference to these publications should be sufficient.

2.4 There are many examples of phrases such as:

- Before the CAA permits...it must be satisfied...
- The CAA will grant ...if satisfied...

- Where, **in the opinion of the CAA**
- If the response is **deemed by the CAA to be inadequate...**
- Once the application has been....**deemed acceptable by the CAA**
- ...and **accepted by** the CAA
- Refuelling **unless straightforward**. Who decides what is "straightforward"?

In the view of the HAA such phrases mean that the final decision will be based upon the opinion of a CAA person or persons. We believe that such decisions should be based on compliance with Performance Based Regulations. Phraseology such as "subject to compliance with the requirement of this regulation, permission shall be granted", or "Operations of ex-military aircraft must meet the operational procedures, the personnel, maintenance and airworthiness management provisions as specified in this CAP" are much preferred.

2.4 The HAA recommends that the use of "etc" should be avoided. The expression "etc" is often used by the author of a document in an attempt to cover anything that perhaps ought to be listed, but at the time of writing the author is unsure of what else should be listed! It is an inappropriate expression in a CAP that is a regulatory document.

### **3. Chapter 1 Introduction**

3.1 In the Introduction of the Draft at paragraph 1.1 the HAA considers the wording to be vague and almost lecturing the reader on the responsibilities to the aircraft that form part of the UK heritage. The HAA would suggest that paragraphs 1.1 and 1.2 might be better worded as follows:

- 1.1 Ex-Military aircraft are generally regarded as possessing such technical features, flying qualities and operational or historic associations as to warrant uncommon knowledge or skill when preserving for use in representative working order and for use in display flying. The operation of such aircraft needs to be conducted to the highest standards respectful that these particular requirements are likely to be not commonly known and will need to be learned anew.
- 1.2 Ex-Military aircraft were built and operated with the support of complex military systems that are not likely to be available to the civil operator. There are many factors associated with all aspects of their operation and flight that need to be considered in order to meet as far as is practicable modern aviation safety standards.

### **4. Chapter 2 Legal Requirements**

4.1 The HAA notes that Paragraph 2.7 repeats what has already been set out in the document contents. It is therefore not required and we recommend that it should be removed.

4.2 The HAA would question why “Applications for CAP632 Approval” is a topic listed under “Legal Requirements” when it clearly is not. We suggest that Applications should be a separate chapter and paragraphs 2.8 to 2.17 inclusive would be better placed in this new chapter.

## **5. Grammar and Spelling**

There are numerous grammatical errors and spelling mistakes in the document. The HAA would recommend that a thorough proof reading of the proposed CAP632 Edition 8 is carried out before publication. The Astral Aviation Consulting Response has highlighted a number of these errors for ease of reference.

## **6. Chapter 3 General Requirements**

6.1 The HAA considers that there is much detail in Chapter 3 that needs close scrutiny and change. Please refer to the detailed changes suggested by Astral Aviation Consulting for Chapter 3 that the HAA fully endorses. In particular the HAA considers that the use of modern technology such as through iPad, iPhone, and laptop computer with information from recognised service providers should be acceptable in place of “paper versions” of manuals, charts, NOTAMS and AIC’s.

6.2 The HAA notes that the use of a “simple hazard log” and its application to produce a “risk score” is almost identical to the risk analysis contained in the Self-Administration Manual that was presented to the CAA GAU by the HAA in 2014. The HAA thoroughly supports the principles of risk assessment and risk management and will continue to advocate the application of the risk assessment and permit index system as a best practice for the operators of CAP632 aircraft.

6.3 The sections dealing with Documentation – Aircraft Technical Log are not specific to CAP632 aircraft and are covered by Article 226 of the ANO and detailed in BCAR’s. A cross reference to these standard Aircraft Technical Log requirements and the fact that the specific layout shall be agreed with the CAMO is all that is necessary to insert in Chapter 3.

## **7. Chapter 4 Technical Requirements**

7.1 The HAA considers that this chapter is not subject matter for an operational CAP. Technical requirements are appropriately covered in BCAR’s and CAP 1640. Consideration of any technical requirements should be through cross-reference in CAP632 when it is considered necessary to emphasise special conditions or needs in restoration and airworthiness maintenance. The HAA recommends this chapter should be removed.

7.2 The mention of Human Factors in paragraph 4.5 and cross reference to CAP718 seems to have been added as a “catch all” entry. Whilst the HAA is fully supportive of measures that take into consideration human factors in both operations and maintenance, guidance on human factors is available in other CAA publications that can be cross referred. Since the HAA recommends deletion of Chapter 4, consideration of human factors elsewhere in the document should be included as cross-referencing to the appropriate CAA publication.

## 8. Chapter 5 Specialised Equipment and Systems

8.1 Whilst the HAA would support the general principle that an ex-military aircraft ought to be restored and maintained as far as possible to the standards used in the military service, the HAA believes that to prescribe it should be operated under a PtF to the same standards used in military service is inappropriate. Operation of an ex-military aircraft should be based upon the civilian use of the aircraft and the purpose to which it will be used. For each ex-military technical system incorporated in the aircraft a risk assessment should be conducted to the satisfaction of the operator and the CAA that the risk is ALARP.

8.2 Probably the most vexing item to owners and operators of swept wing jet aircraft is that of having to maintain serviceable ejection seats. The HAA has a view that the safety of the pilot is not the important issue in the operations of CAP632 aircraft. If the pilot and the operator accept the risk of not being able to eject from a swept wing aircraft and the aircraft is operated to mitigate any risk to the public, then in the view of the HAA a serviceable ejection seat is not essential but only desirable. It might be for certain category of flight eg ferry flight or positioning flight, a swept wing ex-military type could be flown without serviceable ejector seat(s). Paragraph 5.9 should be reworded in the last sentence to state that **"The CAA may allow swept-wing aircraft to fly fitted with ejection seats that are inert subject to a risk assessment being carried out that ensures the risk to the public as being ALARP"**.

8.3 Paragraphs 5.10, 5.11, 5.13 and 5.14 are maintenance issues that are covered elsewhere in BCAR's and therefore should be either removed or cross-referenced to the correct BCAR document.

8.4 The HAA endorses the proposed changes to Chapter 5 made by Astral Aviation Consulting.

## 9. Chapter 6 Pilot/Crew Qualification

9.1 The HAA endorses the suggested changes from the Astral Aviation Consulting submission under Serial numbers 68 to 78 inclusive. The HAA also wishes to take this opportunity to highlight the current shortage of DAE's on jet aircraft types but regrets that can see no immediate solution to this problem.

9.2 At paragraph 6.21 the use of the word rigorous seems to be unnecessary embellishment and the HAA recommends this be deleted. Also to make the conversion training a responsibility of the Chief Pilot is not always appropriate especially if the ex-military type is flown by its owner. The HAA suggests that the sentence should read **"Pilots who have little or no military jet or high-performance piston-engine experience shall be required to undergo appropriate conversion training to type that may include aviation medicine training"**.

9.3 For paragraph 6.28 – Pilot Currency – the HAA agrees with Astral Aviation Consulting that this should be changed to: **"CAP 632 operators must ensure that pilots remain current on the type of aircraft flown. This is especially important for jet and high-performance aircraft where currency flights should include appropriate sortie content depending on the type of aircraft flown."**

## 10. Chapter 7 Operational Requirements

10.1 Test flights and check flights are a subject for the organisations maintaining CAP632 aircraft. Again the HAA considers this subject is more appropriate to BCAR's than to an operational document such as this, and recommends paragraphs 7.1 and 7.2 be removed.

10.2 The section titled "Operational Control" reads as if the ex-military aircraft type operator is a large organisation with several pilots and a Chief Pilot. The HAA recognises that there are large organisations to which this section would be meaningful, but for the single aircraft, single owner, single pilot operation this section would not be so meaningful except where the basic ANO responsibilities of Pilot in Command are relevant.

10.3 The HAA considers that the single pilot operation should be given guidance in this CAP as to where and how to acquire the necessary experience to operate a CAP632 ex-military aircraft type safely. Some additional wording might be necessary to take account of the single aircraft/single owner/ single pilot case. Appendix B Introduction states that the guidance is only for Chief Pilots.

10.4 Paragraph 7.8 in the CAP632 Edition 8 Draft needs to be more specific and the HAA suggests that it should be re-worded as follows: "Pilots that fly CAP 632 aircraft for one operator may fly for another CAP 632 operator at the discretion of that operator providing they are suitably qualified to fly that operator's aircraft type."

10.5 With reference to Paragraph 7.11 the HAA would sympathize with the CAA for offering guidance in this CAP on continued preservation of an historic aircraft through additional limitations to those originally prescribed by the military operator. However, the HAA has to recognize that this guidance is inappropriate in a regulatory document but would be better published elsewhere in general guidance material to heritage and historic aircraft owners, for example through the HAA website and advisory material. The HAA therefore supports Astral Aviation Consulting in its suggestion to delete Paragraph 7.11.

10.6 Low Flying and Paragraph 7.12 is not very well worded in the opinion of this Association. The HAA recognizes what the author is trying to achieve but considers it would be better worded as follows: "Aircraft operated under CAP 632 **may** fly at low level in compliance with the normal rules of the air, however, to do so safely requires extensive training and continuous practice. Operators **should** consider and mitigate the significant hazards that exist when operating at low level where the time available to resolve emergency situations is considerably reduced. Hazards such as the high workload of low-level navigation, bird strike, possible late sighting of other traffic, and possible engine failure all pose threats that should be taken into consideration."

10.7 The section titled "Aircraft fitted with live ejection seats and ejection policy" is clearly grappling with a difficult aspect of CAP632 operations. In paragraph 8.2 of this submission the HAA expresses a view that the regulator should not necessarily be overly concerned with the safety of the pilot(s) flying CAP632 aircraft. The carriage of passengers in CAP632 aircraft ought to be covered by SSAC requirements. Accepting that the CAA considers it has a duty of care to pilots, who may accept the risk of flying an aircraft fitted with an ejector seat whether it is serviceable or not,

then the HAA agrees that all occupants must be suitably briefed but not necessarily trained. The suitable training becomes an area of opinion as to what is suitable and what is not. A suitable briefing can be committed to writing in compliance with PBR and then there is no doubt. As to medical fitness this again needs to be defined. It would not be necessary to require a passenger to undergo a medical examination to establish a level of fitness unless that level was defined. The HAA agrees that a more important criteria is body-mass for the ejection seat type.

10.8 The HAA finds puzzling why jet aircraft fitted with ejector seats are treated as a special case for forced landings in Paragraph 7.14 when there are a number of piston powered aircraft of mass and performance that generate the same kinetic energy levels as jet aircraft. The HAA considers that the subject of Forced Landings should be applicable to all CAP632 aircraft and would probably merit a dedicated section in Chapter 7.

10.9 The Carriage of passengers section in Paragraphs 7.22 to 7.28 is probably now outdated by the introduction of SSAC. It would seem to the HAA that any passenger carried in a CAP632 PtF aircraft ought to be subject to SSAC. Therefore this section becomes redundant other than to offer reference to SSAC.

10.10 If the content of Paragraph 7.26 is to remain some explanation to the rationale for a minimum height for flight of 1000ft AGL when carrying passengers would be helpful. It might be better to qualify the height as above surface level rather than confine the definition to "ground level"

## **11. Chapter 8 Recording and audit procedure**

11.1 The proposed changes to Audit Cancellations in Paragraphs 8.14 to 8.16 appear to be driven by Airworthiness phraseology since reference to an Accountable manager is not defined in the Terminology and Definitions table which leads one to suspect that some "cut and paste" wording has been applied here. As CAP632 is an operations document should this not refer to the "Operator" or the "OCM Administrator"

11.2 The HAA endorses the recommendations made by Astral Aviation Consulting with regard to Auditing procedures and has nothing further to add.

## **12. Appendices**

12.1 Generally the Appendices need to be changed to remove the Airworthiness and Maintenance references as these are well covered in BCAR's as mentioned above.

12.2 In Appendix D Guidance on appropriate flying clothing and safety equipment the wording frequently refers to ex-military aircraft when it should be referring to CAP632 PtF aircraft. There are many ex-military aircraft that do not fall into the categories of CAP632 aircraft and the suggestion for example that "Flying suits are the only practical garment for flying ex-military aircraft." is not correct. The HAA suggests that where the text states "ex-military aircraft" it should read "CAP632 PtF aircraft". The problem here is that there are larger multi-engine ex-military aircraft where the wearing of flying clothing other than a Flying Suit is acceptable and does provide a level of safety. The writer of this section seems to have focussed on single engine

aircraft and overlooked the multi-engine ex-military types and the fact that this guidance is applicable to CAP632 PtF aircraft and not all ex-military types. The hAA suggests a review of Appendix D to correctly address the guidance for CAP632 types.

12.3 In Appendix E Guidance on the conduct of the audit visit, at paragraph E5 the word "investigated" would be better substituted with the word "Reviewed" or "Audited". At Paragraph E7 the last sentence is a question unanswered and the HAA suggests that this would be better worded "...responsibilities to ascertain that the arrangements in place do actually work in practice."

12.4 Appendix G Continuing Airworthiness and Maintenance Contract – the HAA is uncomfortable with this appendix since the CAP632 is essentially an operational document and the insertion of large sections of Airworthiness and Maintenance seems to be misplaced. There are other existing documents that deal with airworthiness requirements such as CAP553, BCAR A8-23, A8-24 and A8-25 and where required these should be cross referenced in the body of the CAP632. The HAA sees this Appendix as being superfluous and inappropriate to CAP632. Should the CAA deem that it is necessary to retain Appendix G then we would recommend incorporating the changes suggested by Astral Aviation Consulting

12.5 Similarly the HAA considers that Appendix J should not be required in this CAP as it deals with Maintenance that is covered adequately in other CAA documents. A cross-reference should be all that is necessary in the main document probably in Chapter 4 if required. Normally this would be the responsibility of the maintenance organisation under the terms of A8-25 not of the operator.

### **13. Conclusion**

13.1 In conclusion the HAA finds that the proposed changes need to be reviewed carefully before going to final print. The feedback provided in this paper combined with that of Astral Aviation Consulting represents the suggestions from the Historic Aircraft Association in conjunction with those suggestions from the Jet Operators Association. The British Air Display Association will likely have submitted their feedback also.

13.2 It might be worth considering holding a meeting of those representatives from the ex-military operators including HAA, BADA and the JOA to work through the CAP632 for an agreed outcome to achieve best safety practices and procedures. The HAA offers that thought to the CAA GAU for consideration.

T Elkins  
Secretary  
Historic Aircraft Association

Email: [timelkins58@outlook.com](mailto:timelkins58@outlook.com)  
Web: <https://www.haa-uk.aero>