

Safety Regulation Group



CAP 632

**Operation of 'Permit-to-fly' Ex-military Aircraft
on the UK Register**

www.caa.co.uk

CAP 632

Operation of 'Permit-to-fly' Ex-military Aircraft on the UK Register

© Civil Aviation Authority 2006

All rights reserved. Copies of this publication may be reproduced for personal use, or for use within a company or organisation, but may not otherwise be reproduced for publication.

To use or reference CAA publications for any other purpose, for example within training material for students, please contact the CAA at the address below for formal agreement.

ISBN 978 0 11792 226 6

First published October 1994

Second Edition April 1997

Third Edition February 2002

Fourth Edition April 2006

Fourth Edition incorporating amendments up to and including 1/2007 March 2007

Fourth Edition incorporating amendments up to and including 1/2009 March 2009

Enquiries regarding the content of this publication should be addressed to:
Flight Operations Inspectorate (General Aviation), Safety Regulation Group, Civil Aviation Authority,
Aviation House, Gatwick Airport South, West Sussex, RH6 0YR

The latest version of this document and all applicable amendments are available in electronic format at www.caa.co.uk/publications, where you may also register for e-mail notification of amendments.

Printed copies and amendment services are available from: Documedia Solutions Ltd, 37 Windsor Street, Cheltenham, Glos., GL52 2DG.

Printed copy available from:

TSO, PO Box 29, Norwich NR3 1GN

Telephone orders/General enquiries: 0870 600 5522

Fax orders: 0870 600 5533

www.tso.co.uk/bookshop

E-mail: book.orders@tso.co.uk

Textphone: 0870 240 3701

List of Effective Pages

Chapter	Page	Date	Chapter	Page	Date
	iii	March 2009			
Contents	1	March 2009			
Contents	2	March 2009			
Introduction	1	March 2007			
Chapter 1	1	March 2007			
Chapter 2	1	March 2007			
Chapter 3	1	March 2009			
Chapter 3	2	March 2007			
Chapter 4	1	March 2007			
Chapter 5	1	March 2007			
Chapter 5	2	March 2009			
Chapter 6	1	March 2007			
Chapter 6	2	March 2009			
Chapter 6	3	March 2009			
Chapter 7	1	March 2007			
Chapter 7	2	March 2007			
Chapter 7	3	March 2009			
Chapter 8	1	March 2007			
Annex A	1	March 2009			
Annex A	2	March 2009			
Annex B	1	March 2007			
Annex B	2	March 2007			
Annex B	3	March 2009			
Annex B	4	March 2009			
Annex C	1	March 2007			
Annex C	2	March 2007			
Annex D	1	March 2007			
Annex D	2	March 2007			
Annex E	1	March 2007			
Annex E	2	March 2007			
Annex E	3	March 2007			
Annex F	1	March 2009			
Annex F	2	March 2007			
Annex F	3	March 2007			
Annex F	4	March 2007			
Annex F	5	March 2009			
Annex F	6	March 2009			

INTENTIONALLY LEFT BLANK

Contents

	Introduction	
Chapter 1	Applicability	
Chapter 2	Scope of the CAP	
Chapter 3	General Requirements	
	Organisational Control Manual	1
Chapter 4	Technical Requirements	
Chapter 5	Specialised Equipment and Systems	
	General	1
	Oxygen Systems	1
	Aircraft Pressurisation	2
	Ejection Seats	2
	Flying Clothing	2
	Emergency and Back-up Systems	2
	External Equipment	2
Chapter 6	Pilot/Crew Qualification	
	Pilot Licensing - General Requirements	1
	Licence Type Rating Exemptions	1
	Pilot training on Jet and High Performance Propeller-driven Aircraft	2
	Pilot Currency	3
Chapter 7	Operational Requirements	
	Flight Test	1
	Operational Control	1
	Operational Limitations	1
	Low Flying	2
	Aircraft Fitted with Live Ejection Seats and Ejection Policy	2
	Aircraft Fitted with Jettisonable Drop Tanks	2
	Flying Clothing	2
	Flight in Excess of 250 Kt Below FL 100	3
	Carriage of Passengers	3
	Essential Training Requirements	3

Chapter 8	Recording and Audit Procedure	
	Recording	1
	CAA Audit	1
	Procedure for Withdrawing Agreement to an OCM Agreement	1
Annex A	Guide to the Compilation of the Organisational Control Manual	
	Introduction	1
	Overall Organisation	1
	Operational Organisation	1
	Maintenance Considerations	2
	Annexes	2
Annex B	CAP 632 Safety Management Checklist	
	Simple Risk Assessment Procedure Using a Matrix System	3
Annex C	Guidance on Experience Requirements to Fly Jet or High Performance Piston Engine Aeroplanes	
	Introduction	1
	Levels of Experience	1
	Minimum Recommended Experience Required Before a Pilot Should be Considered for Self Authorisation	1
	Self Authorisation	1
Annex D	Specimen Pre-Flight Briefing	
	General Handling Sorties	1
	Navigation Sorties	1
	Formation Sorties	2
Annex E	Guidance on Appropriate Flying Clothing and Safety Equipment (Dress to Survive)	
	Flying Clothing	1
	Other Survival Equipment	2
	Other Considerations	2
Annex F	Guidance on the Conduct of the Audit Visit	
	Introduction	1
	Frequency of Inspection	1
	The Audit Inspection	1
	Post Inspection Actions	4
	Appendix 1 to Annex F	5
	Appendix 2 to Annex F	6

Introduction

- 1 Ex-military aircraft or replicas thereof with either:
 - a) a maximum Take-off Weight Authorised (MTWA) in excess of 2730 kg; or
 - b) a piston engine with a rating of 800 hp or more; or
 - c) a turbine or turbojet engine;

on the UK register will normally be required to operate on a Permit-to-Fly. The Permit-to-Fly specifies various conditions, including:

"The aircraft shall be maintained by an Approved Organisation (BCAR A8-20) in accordance with a recognised maintenance programme/schedule based on the manufacturer's and/or the previous military authority's published maintenance requirements."

and

"The aircraft shall be operated in accordance with CAP 632 unless the CAA has confirmed in writing that compliance with the conditions of CAP 632 is not required."

NOTE 1: The BCAR A8-20 maintenance requirement applies to all ex-military helicopters.

NOTE 2: The CAP 632 operational requirements do not apply to ex-military helicopters with an MTWA below 2730 kg.

- 2 This CAP details the operational requirements applicable to these ex-military aircraft.
- 3 Ex-military aircraft on the UK register are not normally acceptable for the issue of a Certificate of Airworthiness. The CAA will grant a Permit-to-Fly if satisfied in accordance with British Civil Airworthiness Requirements (BCAR) Chapters A3–7, and A8–20.
- 4 A UK Permit-to-Fly is only valid for flight in UK airspace in accordance with the conditions on the Permit-to-Fly, unless an Exemption has been granted by the CAA to fly abroad. Permit-to-Fly aircraft must not be operated outside UK airspace for more than 3 calendar months in any calendar year, unless with the specific approval of the CAA. Flight in the airspace of any other State in a Permit-to-Fly aircraft will also require the specific permission, in writing, of that State since the aircraft does not hold an ICAO recognised Certificate of Airworthiness.

INTENTIONALLY LEFT BLANK

Chapter 1 **Applicability**

- 1 The operational requirements set out in this CAP are applicable to any ex-military aircraft or replicas thereof with either:
 - a) an MTWA in excess of 2730 kg; or
 - b) a piston engine with a rating of 800 hp or more; or
 - c) a turbine or turbojet engine (excluding helicopters under an MTWA of 2730 kg);operating on a Permit-to-Fly on the UK register except as outlined in paragraph 3 below (see Notes 1 and 2, Introduction, page 1).

- 2 Owners and operators of any ex-military aircraft or replicas thereof with either:
 - a) an MTWA in excess of 2730 kg; or
 - b) a piston engine with a rating of 800 hp or more; or
 - c) a turbine or turbojet engine (including helicopters under an MTWA of 2730 kg);on the UK register, whether powered by piston or turbine engines, will be required to meet the conditions set out in BCAR A8–20 and with conditions stated on the Permit-to-Fly for the aircraft concerned (see Notes 1 and 2, Introduction, page 1).

- 3 The provisions of this CAP will not normally be applicable to aircraft that are military variants of civil designs which have, or are being operated on, a UK Certificate of Airworthiness. Where, in the opinion of the CAA, there are significant differences between the military variant and its civil-certificated counterpart, the CAA may insist that the procedures set out in this CAP are followed.

INTENTIONALLY LEFT BLANK

Chapter 2 Scope of the CAP

- 1 This CAP specifies the operational requirements that an applicant for the issue of a Permit-to-Fly for an ex-military aircraft is required to meet. The maintenance requirements are set out in BCAR Chapters A3–7, and A8-20. Not only will certain provisions need to be met before the documentation can be issued, but a minimum operational and technical framework must remain in place for the Permit-to-Fly to remain valid.
- 2 This CAP has been divided into separate parts covering:
 - General Requirements.
 - Technical Requirements.
 - Specialised Equipment and Systems.
 - Pilot/Crew Qualifications.
 - Operational Requirements.
 - Audit Procedure.

INTENTIONALLY LEFT BLANK

Chapter 3 General Requirements

1 Organisational Control Manual

The operator will be required to compile and submit to the CAA an Organisational Control Manual (OCM). It is not intended that the contents of this manual should follow the detailed requirements necessary for an Air Operator's Certificate, but rather that it will set out the operational procedures under which it is proposed to operate the aircraft. As a guideline, the OCM should contain only the essential details necessary to comply with the requirements of this publication. Once the CAA is satisfied that the proposed operational procedures are acceptable, the OCM will be agreed by formal letter issued to the operator. Any subsequent amendments to the OCM must also be agreed by the CAA before they are incorporated. Any amendments must be clearly highlighted preferably with revision bars. Detailed requirements to be considered when preparing the OCM are given in Annex A. Should the operator fail to adhere to the agreed operating procedure the CAA may withdraw the agreement to the OCM until any deficiencies are addressed. This procedure is outlined in Chapter 8, paragraph 3.

1.1 Organisation

1.1.1 The operator shall set up an organisation, acceptable to the CAA, capable of safely managing the day to day operation of the aircraft. This organisation shall be capable of reviewing the following:

- The maintenance standard of the aircraft in conjunction with the BCAR A8–20 approved organisation nominated as being responsible for the particular aircraft maintenance and continued airworthiness.
- The suitability of the aircraft condition for the intended flight within the limitations laid down in the Permit-to-Fly.
- Compliance with the conditions of the Permit-to-Fly in relation to the intended flight.
- The currency and recency of the crew (including any supernumerary crew) in relation to the intended flight.
- Operational planning for the intended flight such as weather conditions, fuel requirements, diversion requirements etc.

1.1.2 Qualification and terms of reference for key personnel within the organisation should be detailed within the OCM. Complexity and/or number of aircraft will dictate staffing requirements and balance of permanent and part time staff.

1.2 Safety Management

1.2.1 Safety is of paramount importance in all areas of aviation. High safety standards are achieved not by the imposition of rules and regulations but through the development of a positive safety culture in all connected with the operation of aircraft. The development of such a culture can be achieved in a number of ways but that recommended by the CAA is the adoption of a Safety Management System (SMS). SMS allows an operator to assess his approach to safety and the risks to which his operation is open.

1.2.2 SMS can be tailored to meet the needs of small and large operations and in some form may already exist in organisations. The test of any organisation and its imbedded safety system is that it can withstand scrutiny in the event of incident and satisfy investigators that all reasonable safety measures have been taken.

- 1.2.3 The system developed by the General Aviation Department (GAD) to meet the specific requirements of the GA community is based on a combination of a prepared checklist and a simple risk assessment matrix. A suggested system is shown in Annex B.
- 1.2.4 The checklist consists of some 30 questions each of which can be answered either "Yes" or "No". An answer, "Yes" indicates a safe approach, whereas an answer of "No" requires review and corrective action. The suggested questions are not exhaustive in their coverage. However, it is considered that all the questions are most probably relevant to large operations, but for a small operation many would not be relevant. Using a checklist allows the operator to self-analyse his safety management processes and improve them if necessary. It is simple to use, not time consuming and cost free.
- 1.2.5 Alongside the checklist, and to be used in parallel with it, is a simple risk matrix. This is based on a subjective assessment, based on experience and evidence, of the likelihood of each identified hazard occurring coupled with the severity of the outcome. Multiplying likelihood by severity provides an initial risk assessment. Mitigating factors can then be applied to give a final risk assessment.
- 1.2.6 During audits the CAA Inspectors will discuss SMS with operators. Their discussions will be based around the checklist and validation questions at Annex B. The "Validation Questions" provides a suggested indication of how the effectiveness of a company SMS can be assessed.

1.3 Consultation with the CAA

Operators who propose to purchase an ex-military aircraft with the intention of obtaining a Permit-to-Fly are advised to consult the following CAA departments early in the planning cycle to determine if a Permit will be issued and under what limitations to operations.

- **Applications and Approvals Department** (Telephone 01293 768374 or Fax 01293 573860) on application, maintenance and procedural matters;
- **Aircraft Certification Department** (Telephone 01293 573726 or 573309 or Fax 01293 573976) on matters associated with the design and eligibility of the type;
- **Flight Ops Inspectorate (General Aviation)** (Telephone 01293 573540 or Fax 01293 573973) on operational and CAP 632 matters; and
- **Personnel Licensing Department (PLD)** (Telephone 01293 573700 or Fax 01293 573996) for licensing and training matters relating to turbine powered aeroplanes, multi-crew aeroplanes and all helicopters.
- **Appropriate Regional Office** (contact numbers in Airworthiness Notice 29).

1.4 Charges for the Issue and Renewal of a Permit-to-Fly

The CAA may in the future levy charges under this CAP which would be additional to the normal charges payable for the Issue or Renewal of any Permit-to-Fly. Charges apply to Type Rating Exemptions issued by PLD, and details can be found in the Official Scheme of Charges. The applicant may be required to pay for any additional work that proves necessary.

Chapter 4 Technical Requirements

1 The investigation of the aircraft by the CAA for the issue of a Permit-to-Fly will be carried out in accordance with BCAR Chapters A3–7, and or A8–20. Where the aircraft being considered is either:

- a) above an MTWA of 2730 kg; or
- b) has a piston engine with a rating of 800 hp or more; or
- c) has a turbine or turbojet engine;

the level of design investigation will be determined by the three groupings, Simple, Intermediate and Complex:

- **Simple:** single piston engine types.
- **Intermediate:** multiple piston engine or turbine (single or multiple) engine types with simple mechanical flying controls or with power controls having an independent back-up system which ensures continued safe flight.
- **Complex:** all other types, in particular those types having features which require a high degree of specialised knowledge and equipment to maintain (e.g. types with no independent back-up system to powered flying controls or with auto-stabilisation systems or electronic engine controls).

NOTE: Classification of a particular aircraft type is the responsibility of the CAA.

2 Maintenance, continued airworthiness and Permit-to-Fly renewal of ex-military aircraft or replicas thereof with either:

- a) an MTWA in excess of 2730 kg; or
- b) a piston engine with a rating of 800 hp or more; or
- c) a turbine or turbojet engine;

are to be controlled by a suitable approved BCAR A8–20 Organisation.

3 It is the operator's responsibility to ensure that proper agreements are in place, and regular liaison is carried out with their BCAR A8–20 maintenance organisation agreed for the aircraft type(s) concerned. Maintenance arrangements must be agreed with the CAA.

INTENTIONALLY LEFT BLANK

Chapter 5 Specialised Equipment and Systems

Many ex-military aircraft have specialised technical equipment or systems particular either to the role of the aircraft or the conditions under which it was designed to operate, or both. From design considerations for intermediate and complex types, the CAA will grant a Permit-to-Fly on the basis of a reasonable military service accident record (discounting military action and high-risk training). To maintain or better this record under civil control, it is expected that the aircraft will be operated as far as possible to the standards used in military service. For example, this would mean, that if a serviceable oxygen system was required in military service irrespective of the nature of the flight, the CAA would wish this to continue unless the CAA was totally satisfied that there were no hazards in operating without oxygen, even at low altitude (e.g. due to cockpit carbon monoxide levels). Specialised systems may include:

- Oxygen, either liquid or gaseous.
- Pressurisation.
- Ejection Seats.
- Flying Clothing.
- Emergency and back-up systems, brake-parachutes etc.
- External fuel tanks, pylons etc.

To support this principle, the aircraft should be operated in accordance with the instruction manuals used whilst in military service, e.g. Pilots Notes, Flight or Aircrew Manuals, Operating Data Manuals etc.

In some cases additional limitations or procedures may be necessary for operation in the civil environment. Where required, all such manuals, additional limitations or procedures will be specified as a condition on the Permit-to-Fly. These must be fully detailed in the OCM.

1 General

Where specialised equipment, facilities or personnel are required to ensure the serviceability of the equipment (e.g. ejection systems) these will be provided by, or be under the control of, the appropriate BCAR A8–20 Organisation.

2 Oxygen Systems

2.1 Piston Aircraft

It is recommended that piston engine aircraft have serviceable oxygen systems when operating above FL 100, or at all heights when adverse environmental conditions may exist.

2.2 Turbine Aircraft

It is recommended that the oxygen system be fully serviceable in all types of turbine-powered aircraft whether or not the operator proposes to fly the aircraft above FL 100. In the case of high performance aircraft, specific training, such as pressure breathing training, may be required.

3 Aircraft Pressurisation

It is recommended that pressurisation systems should be fully serviceable.

4 Ejection Seats

Where ejection seats are an integral part of the aircrew escape system, as specified in the relevant Pilots Notes, Flight or Aircrew Manuals, it is recommended that they be fully serviceable for all flights. Approval should be sought from the CAA (Application and Approvals) at the earliest opportunity if it is intended to operate with inert ejection seats (or other escape systems). It is unlikely that the CAA will allow swept-wing aircraft fitted with ejection seats to be flown unless the equipment is fully operational.

5 Flying Clothing

Certain items of flying clothing and personal equipment form an integral part of the aircraft safety equipment; life saving jacket with dinghy connections or Personal Equipment Connector with oxygen connections for example. Where the appropriate systems are required for flight, these additional items must also be available and fully serviceable.

6 Emergency and Back-up Systems

Such systems will invariably be an integral part of the aircraft build standard and will have been installed with certain emergencies in mind (i.e. emergency undercarriage lowering or hood opening/jettison). The CAA will require all such systems to be serviceable for all flights.

7 External Equipment

The carriage of external weapons or stores during flight will not be allowed. Flight with external jettisonable fuel tanks will be subject to agreement with the CAA. Empty wing pylons, where their carriage does not materially affect the flight characteristics of the aircraft, will be allowed provided that the pylon jettison circuits are inhibited.

Chapter 6 Pilot/Crew Qualification

1 Pilot Licensing - General Requirements

1.1 Ex-military aircraft on the UK register with a 'Permit-to-Fly' may be piloted by either private or professional licence holders. Pilots must hold a current civil licence with a current civil class or type rating appropriate to the ex military type[s] being flown or where no civil type rating exists, an Exemption from the need to hold a type rating. Any questions relating to licence matters should be addressed to CAA PLD Requirements.

1.2 The following general requirements are applicable to ex-military aircraft:

- **Single Engine Piston (SEP) Aeroplanes** - All ex-military SEP aeroplanes can be flown on a current SEP Class Rating with appropriate levels of complexity (retractable undercarriage, variable pitch propellers etc.). The OCM is to detail the minimum experience levels and training requirements for pilots converting to the type.
- **Multi Engine Piston (MEP), Single Pilot Aeroplanes** - All ex-military MEP, single pilot aeroplanes can be flown on a current MEP Class Rating with appropriate levels of complexity (retractable undercarriage, variable pitch propellers etc.). The OCM is to detail the minimum experience levels and training requirements for pilots converting to the type.
- **Multi Engine Piston (MEP), Multi Pilot Aeroplanes** - To fly any multi pilot aeroplane the pilots require to hold a type rating or, where no type rating exists, an Exemption from the need to hold a type rating. See paragraph 2 for details of obtaining an Exemption.
- **Any Turbine Powered Aeroplane** - To fly an ex-military turbine powered aeroplane a pilot must hold an Exemption from the need to hold a type rating. See paragraph 2 for details of obtaining an Exemption.
- **Any Helicopter** - To fly any ex-military helicopter a pilot requires a type rating or, where no type rating exists, an Exemption from the need to hold a type rating. See paragraph 2 for details of obtaining an Exemption.

2 Licence Type Rating Exemptions

2.1 Exemptions for Training

Prior to the start of training pilots are to agree with CAA PLD (Policy) the training syllabus appropriate to their experience levels and the name(s) of the person(s) responsible for the training; normally the Chief Pilot of the aircraft operating organisation. PLD will issue an Exemption for training which will specify the period of the training and the name of the person(s) responsible for the conduct of the training.

2.2 Full Exemptions

After suitable training and testing and on the recommendation of the Chief Pilot of the organisation, an Exemption against the requirement to hold an appropriate aircraft type rating will be issued by PLD. This Exemption will be renewed annually on production of evidence that no fewer than five separate flights as pilot in command have been completed on the type itself or a similar agreed type in the immediately preceding 12 months. However on a case-by-case basis where a pilot is current and experienced on a number of similar types (e.g. a test pilot), this requirement may be relaxed with the approval of the CAA Flight Ops Inspectorate (General Aviation).

- 2.3 Pilots operating on an Exemption must hold an otherwise appropriate valid licence which includes an appropriate valid class or type rating.
- 2.4 A Type Rating Exemption is issued for each specific type of aircraft.

2.5 **Applications for Aircraft Type Rating Exemptions**

Applications for an Aircraft Type Rating Exemption should be made on the form "CAP 632 Aircraft Rating Exemption - Application for Initial Issue and Re-issue", www.caa.co.uk/srg1306

The appropriate payment should be made using the form "PLD Payment Method Form SRG 1187", www.caa.co.uk/srg1187

These forms are also available from the CAA website www.caa.co.uk under Publications, Flight Crew Licensing, Forms.

The completed forms should be sent or faxed to:

FOI(GA), 1W
Civil Aviation Authority
Aviation House
Gatwick Airport South
West Sussex
RH6 0YR

Tel: 01293 573510
Fax: 01293 573973

3 Pilot training on Jet and High Performance Propeller-driven Aircraft

- 3.1 Pilots wishing to be accepted for flying jet and high performance propeller-driven aircraft should have the appropriate flying experience. Conversion, refresher and technical training requirements for these aeroplanes will be assessed on an individual basis and must be agreed in advance of training commencing with either CAA PLD (where an Exemption is required) or CAA FOI(GA) where no Exemption is needed. This latter requirement may be met by detailing the minimum experience levels and training requirements in the agreed OCM. Organisations will maintain a current list of pilots who have been accepted by the Authority.
- 3.2 Pilots who have little or no military jet or high-performance piston-engine experience will invariably be required to undergo rigorous and detailed conversion training including, where appropriate, specific aviation medicine training.
- 3.3 Guidance as to recommended experience levels for the training and supervision of pilots is given at Annex C.
- 3.4 Guidance as to the "essential training requirements" or "dual checks" is given in Chapter 7 paragraph 10.

4 Pilot Currency

4.1 Organisations are to specify in the OCM minimum requirements for pilot currency bearing in mind experience levels of the pilots concerned. Where possible, maximum advantage is to be taken of dual control aircraft in maintaining currency. The following criteria are recommended:

4.1.1 Experienced pilots - Aircraft operated on a Licence Exemption or Type Rating

- Licence Exemption or Type Rating expired, one year or more out of currency or less than 5 flights on type, or similar agreed types, within 12 months:
 - Training as specified by CAA (FOI(GA)) for the renewal of the Exemption or Type Rating.
- More than 6 months but less than one year out of currency with a valid Exemption or Type Rating:
 - Full ground briefing on aircraft systems, limitations, normal and emergency operations brief.
 - Dual check at the Chief Pilot's discretion taking account of pilot experience, currency on other types and availability of a suitable dual control representative type.
 - Supervised start/supervised solo at Chief Pilot's discretion.
 - Pilot current on type available in the tower or other appropriately experienced pilot designated by the Chief Pilot.
 - Solo General Handling flights and display practice, if appropriate, at the Chief Pilot's discretion.

4.1.2 Experienced pilots - Aircraft operated on a Class Rating (SEP and MEP)

The OCM is to detail the currency requirements depending upon aircraft complexity. The requirements above should be taken as guidelines for high performance aircraft.

4.1.3 Experienced pilots - All aircraft

More than 90 days since last flight on type - a general handling flight and, if appropriate, a display practice.

4.1.4 Inexperienced pilots

Until a pilot has met the requirements to be considered self-authorising on type (see Annex C) a dual check by the Chief Pilot/Training Captain will be required if they have not flown the aircraft within a 28 day period. Irrespective of currency, a dual check should also be carried out every 6 months.

4.2 Display Authorisation (DA)

Pilots who wish to take part in a flying display need to be in possession of a CAA Pilot Display Authorisation. Full details of the operation of the DA Scheme can be found in CAP 403 'Flying Displays: A Guide to Safety and Administrative Arrangements', www.caa.co.uk/cap403.

INTENTIONALLY LEFT BLANK

Chapter 7 Operational Requirements

1 Flight Test

Flight Testing of all ex-military aircraft operating on a Permit-to-Fly shall only be conducted to a schedule, and flown by pilots agreed by the CAA Flight Department.

2 Operational Control

- 2.1 Article 52 of the ANO (2005) as amended, places specific responsibilities on the commander of an aircraft before that aircraft takes off. The final decision on any proposed flight profile, or indeed whether or not to fly at all, rests with the aircraft commander, and there is no intention that his responsibilities should in any way be diluted.
- 2.2 Notwithstanding 2.1, the CAA requires that all relevant factors are taken into account before any flight takes place. In the case of inexperienced pilots, either on aircraft type or in the style of flying, it is essential that the organisation's Chief Pilot exercises a measure of operational control.
- 2.3 In the case of pilots new to high performance piston or any turbine engine aircraft, direct flight authorisation by a suitably qualified supervisor, ideally the organisation's Chief Pilot, will be required until the pilot has gained sufficient experience to be considered as self-authorising (see Annex C).
- 2.4 Organisations are to detail in the OCM how the level of supervision outlined in 2.2 and 2.3 is to be achieved and monitored.
- 2.5 Annex D contains a recommended example of a pre-flight brief which lists the basic points which should be considered before all flights.
- 2.6 Pilots may fly under the auspices of other OCMs as long as they meet the criteria of that organisation.

3 Operational Limitations

- 3.1 The CAA requires that aircraft operated under CAP 632 OCMs will do so in accordance with the limitations on their Permit-to-Fly and the appropriate edition of the relevant Pilot's Notes or Aircrew Manual, details of which should be included in the OCM. Where the aircraft is ex-RAF, the appropriate edition of AP 4099J or AP 101B (or the appropriate document for ex-RN and ex-Army aircraft) may be accepted as the master document.
- 3.2 The CAA or the operator may decide that an aircraft should not be operated up to the full limitations accepted by the military. There may be a case for limiting the maximum permitted IAS or 'g' loading or indeed the maximum cockpit or cabin differential pressure. Whatever limitations are imposed, they must be clearly stated in the OCM, and any curtailment of performance that is a consequential result of that decision must be clearly identified.
- 3.3 Owners and operators are encouraged to take into consideration the age, the rarity value and the need for continued preservation of an aircraft when considering any additional limitations. In general terms, additional limitations should be placed on the aircraft with sympathetic appreciation of the above factors whilst allowing the aircraft to be safely flown and, where appropriate, displayed.

4 Low Flying

Flying aircraft safely at low level requires extensive training and continuous practice. Significant hazards exist when operating at low level such as bird strike, the high workload of low level navigation, and the possible late sighting of other traffic. Further, the time available to resolve emergency situations is considerably reduced at low level. It is strongly recommended that ex-military aircraft operated under CAP 632 should not be flown at less than 1,000 ft above ground level except for the purpose of take off or landing or when practising for or taking part in a flying display.

5 Aircraft Fitted with Live Ejection Seats and Ejection Policy

- 5.1 Where an aircraft is fitted with live ejection seats, all occupants must be suitably trained in their use and be medically fit, before being allowed to fly in the aircraft. Moreover, operators are to ensure that occupants meet the seat manufacturers body-mass criteria for the seat type.
- 5.2 Forced landings should only be carried out in jet aircraft as a last resort, unless they can be made onto a suitable airfield. If ejection or abandonment is inevitable, every effort must be made to ensure that the aircraft falls into an unpopulated area. Where possible, ejection should be initiated over the coast with the aircraft pointing out to sea. If time permits, the engine(s) should be shut down prior to ejection or abandonment.
- 5.3 Where an aircraft is fitted with live ejection seats, Ejection Seat Safety Devices (e.g. seat pins) are to be carried in the aircraft on ALL flights and high speed taxi tests in a position where they can easily be identified by the emergency services without assistance from the aircraft's flight or ground crews.

6 Aircraft Fitted with Jettisonable Drop Tanks

- 6.1 Drop tanks should only be jettisoned as a last resort and when their retention would imperil the aircraft and crew and bring increased risk to persons on the ground. All premeditated jettisons are to be made over unpopulated areas, preferably over the sea, clear of shipping.
- 6.2 Pilots should be aware that empty drop tanks have a negligible effect on gliding or range performance of jet aircraft. Therefore, consideration should be given to retaining them in the event of forced landing.

7 Flying Clothing

- 7.1 The CAA requires that all occupants flying jet aircraft shall wear protective helmets equipped with suitable visors. For occupants of other aircraft, such helmets are considered to be highly desirable.
- 7.2 The pilots, crew and any passengers flying in ex-military aircraft should, in addition to wearing a suitable helmet equipped with visor, wear a fire-retardant flying suit, leather gloves and suitable boots. When flying in coastal areas a life jacket capable of withstanding aircraft abandonment should be worn. This should be capable of being inflated during a parachute descent. The wearing of an immersion suit and carriage of a life-raft is recommended in the appropriate circumstances.
- 7.3 Further guidance regarding appropriate flying clothing is given at Annex E.

8 Flight in Excess of 250 Kt Below FL 100

Aircraft can only be flown at speeds in excess of 250 kt below FL 100 with the specific permission of the CAA. Application for such permissions are to be made to the CAA Flight Ops Inspectorate (General Aviation) annually. Operators are to ensure that the conditions detailed on the permission are complied with.

9 Carriage of Passengers

9.1 It is strongly recommended that when passengers are flown in ex-military aircraft operated under CAP 632 the minimum height for flight, except for the purpose of take off or landing, is 1,000 feet above ground level.

9.2 Chief Pilots are to consider pilot experience levels before permitting pilots to fly with passengers. In general, it is recommended that pilots should be considered as being experienced and self authorising (see Annex C) before they fly with passengers.

9.3 OCMs should include a Passenger Brief covering all aspects of flight including use of safety equipment. Passengers' next of kin details should be recorded prior to flight.

10 Essential Training Requirements

Operators are strongly advised to develop an "essential training requirement", and to keep records for each pilot. The "essential training requirement" should require each pilot to practise each of the training elements at least a minimum of once per chosen period e.g. 6 months or 12 months. The following elements should be considered where appropriate:

- Ejection Seat Drills;
- Steep Turns;
- Stalling clean and approach configuration - fully developed or with recovery at the incipient stage;
- Incipient Spin Recognition and Recovery - essential if aerobatics are to be flown;
- Practise Forced Landing;
- In Flight Emergencies including:
 - Practise Fire drill;
 - Practise Engine Relight drill;
- Normal and Flapless Circuits and Crosswind Landing;
- Simulated Asymmetric Approach.

NOTE: This list is not exhaustive and should be tailored for each aircraft type.

INTENTIONALLY LEFT BLANK

Chapter 8 Recording and Audit Procedure

1 Recording

The OCM will detail the records the organisation intends to maintain. The operator will be required, at a minimum, to record:

- Aircraft flying hours/landings/cycles and details of maintenance accomplished (as required under Article 22 of the ANO (2005).
- Record of flights, including a record of each flight where 250 knots KIAS was exceeded.
- Operational and technical problems encountered and the measures taken to overcome them.
- Pilot (and crew) flying and ground training records.

2 CAA Audit

2.1 Operations under the provisions of this CAP will be subject to periodic audit by the CAA to satisfy itself that the aircraft continues to be operated in accordance with the procedures agreed between the CAA and the operator. As part of this requirement, the operator will be required to maintain certain operational and technical records and make these available to the CAA on request. The timing of the audit, normally annually, will be by mutual agreement although the CAA reserves the right to visit at any time.

2.2 Guidance on the conduct of the audit visit is given at Annex F. Examples of the Operational and Maintenance Support Arrangements checklists to be used during the audit are at Appendices 1 and 2 to Annex F.

3 Procedure for Withdrawing Agreement to an OCM Agreement

3.1 Following an audit where major or dangerous non-compliance with OCM requirements or where a significant breach of the agreement comes to the attention of the CAA the agreement to the OCM may be withdrawn. The procedure will be as follows:

3.2 The operator will be sent a letter outlining the concerns and stating what assurances/remedial actions are required within a set timescale. Included may be a formal notice temporarily withdrawing the agreement to the OCM which will have the effect of prohibiting any further operations under that particular OCM.

3.3 Once the deficiencies have been remedied to the satisfaction of the CAA, the agreement to the OCM will be reinstated.

INTENTIONALLY LEFT BLANK

Annex A **Guide to the Compilation of the Organisational Control Manual**

1 Introduction

- 1.1 The content of the OCM will reflect the size and complexity of the organisation and the type(s) operated. In general terms, the more complex and demanding the aircraft, the more detail that will be required in the OCM.
- 1.2 The OCM should cover three broad aspects, namely, details of the overall organisation followed by sections dealing with operational and applicable maintenance aspects. Where an organisation is responsible for operating more than one aircraft, operational information must be available for each individual aircraft unless they are of the same type. It is recommended that information common to all types is contained in the main body of the OCM and that type specific information is confined to appropriate annexes.
- 1.3 Where the operational policy of the organisation is that the aircraft will be operated in accordance with a recognised manual e.g. Pilot's Notes, the CAA will require a copy of this document.

2 Overall Organisation

The following headings should be covered within this Section:

- Appointments and responsibilities of key personnel.
- Operational organisation.
- Maintenance organisation.
- Audit and reporting procedures.
- Procedure for amending organisational control manual.

3 Operational Organisation

The following headings should be covered in the Section dealing with the operational organisation:

- Statement of operating policy for the aircraft.
- Operational control of flights and flight authorisation.
 - Pilots signature sheet - Pilots flying aircraft operated under the OCM are required to operate in accordance with the OCM and must sign the OCM to that effect.
- Crew composition and duties; crew duty limitations.
- Pilot / Crew Qualification including Type Rating Exemptions (Training and Full).
- Training:
 - Periodic checks;
 - Currency;
 - Pilot flight and technical training records;
 - Pilot final handling test report;

- Further training report;
- Formation/aerobatic clearance;
- Self authorisation approvals;
- Policy on carriage of passengers (including medical suitability and recording of next of kin details).
- Operational performance policy.
- Weight and CG considerations.
- Minimum fuel states.
- Weather minima - at base and for diversions.
- Diversion criteria.
- In-flight Emergencies - policy for handling:
 - Where ejection seats are operational - policy on forced landings / ejection;
 - Where jettisonable external tanks are approved and fitted – policy on tank jettison.
- Flying clothing/safety equipment.
- Display criteria (sequences are not required to be set out here).
- Reporting of incidents and occurrences.
- Recording of 250 KIAS exceedences.

4 Maintenance Considerations

The following headings should be covered in the section covering Maintenance Considerations:

- Proposed maintenance procedures in accordance with BCAR A8–20 with details of letters of agreement.
- Method by which maintenance and operational areas will interface with particular reference to interchange of relevant information on aircraft status.
- Policy for maintenance away from base, particularly safety precautions for ejection seats or other live explosive devices. Refuelling unless straightforward. Responsibility for completion of technical logs.
- Policy towards allowable deficiencies with associated flight limitations.
- Pilot maintenance items including certification of training by the appropriate BCAR A8-20 approved organisation.

5 Annexes

The annexes should include:

- A list of the aircraft to be operated including the registrations.
- Any type specific information not already covered.

Annex B CAP 632 Safety Management Checklist

The principle of the checklist is to allow operators to assess whether or not their organisation has a positive safety management culture. Affirmative answers indicate a positive situation. Negative responses always require corrective action.

During audits the CAA Inspectors will discuss Safety Management with operators. Their discussions will be based around the checklist and validation questions below. The "Validation Questions" also provide a suggested method of how the effectiveness of a Safety Management culture can be internally assessed.

NOTE: Not all questions will apply to all organisations.

CHECKLIST	VALIDATION QUESTIONS
POLICY/CULTURE	POLICY/CULTURE
Is the need for a Safety Management System (SMS) accepted as essential by all?	Ask company personnel.
Is safety accepted as the highest priority by all?	Ask company personnel.
Is there a safety policy statement, made by an accountable manager, in operating manuals?	Statement seen at audit.
Are safety responsibilities detailed?	Responsibility breakdown seen at audit.
Are all personnel aware of their responsibilities?	Ask company personnel.
Are safety procedures documented?	Records seen at audit.
Is it clearly stated that safety issues must be resolved immediately in priority order?	Checked.
Is there a procedure for resolving safety issues?	Procedure demonstrated and exemplified.
Is SMS regularly internally audited/checked?	Procedure demonstrated and exemplified.
Is there a robust, mandatory, internal occurrence reporting system? (In addition to MOR System.)	Procedure demonstrated and exemplified.
Are personnel encouraged to contribute safety ideas?	Evidence of action.
Is safety literature widely available to all?	Evidence seen at audit.
Is there a safety training programme for new personnel?	Checked.
Are training responsibilities clear?	Checked.
Are staff safety training needs regularly reviewed?	Check records.

CHECKLIST	VALIDATION QUESTIONS
<p>SAFETY STANDARDS</p> <p>Are safety standards clearly defined?</p> <p>Are safety standards reflected in operating procedures?</p> <p>Is there a procedure for amending operating procedures to reflect changing safety procedures?</p> <p>Is there a procedure for ensuring amendments are incorporated?</p> <p>Is there a procedure for ensuring amendments are read by personnel?</p> <p>Are operations and procedures regularly reviewed in relation to risk/hazard?</p> <p>Is the introduction of change accepted as a risk/hazard?</p> <p>Are risk/hazards considered before changes are implemented?</p> <p>Is there a process for reviewing the impact of environmental/work-place change on safety?</p> <p>Is risk/hazard management understood?</p> <p>Is there a procedure for managing risks/hazards?</p> <p>Are the limits for safe operation defined?</p> <p>Are the limits for safe operation accepted by all?</p> <p>Are the limits for safe operation adhered to by all?</p> <p>Is the safety reporting system used?</p> <p>Are safety reports recorded?</p> <p>Is there a procedure to ensure action is taken as a result of safety reports?</p> <p>Is the competence and performance of personnel responsible for implementing safety measures checked?</p>	<p>SAFETY STANDARDS</p> <p>Read definitions.</p> <p>Check examples.</p> <p>Procedure demonstrated and exemplified.</p> <p>Procedure demonstrated and exemplified.</p> <p>Ask company personnel.</p> <p>Review seen at audit.</p> <p>Ask company personnel.</p> <p>Ask company personnel.</p> <p>Procedure demonstrated and exemplified.</p> <p>Ask company personnel.</p> <p>Procedure demonstrated and exemplified - risk assessment process.</p> <p>Seen at audit.</p> <p>Ask company personnel.</p> <p>Ask company personnel.</p> <p>Check records</p> <p>Check records.</p> <p>Procedure demonstrated and exemplified.</p> <p>Procedure demonstrated and exemplified.</p>

1 Simple Risk Assessment Procedure Using a Matrix System

This simple procedure should suit the needs of most GA operators. If you require advice on risk assessment please contact the Flight Ops Inspectorate (General Aviation), Safety Regulation Group, CAA on 01293 573540.

The assessment process must be undertaken by someone who is aware of the risks associated with the activity being assessed and who will use sound judgment in the preparation of the assessment. The assessor should also be aware that, in the event of a subsequent accident or incident, their risk assessment process may be challenged.

Risk = The Severity of the Hazard X The Likelihood of Occurrence

1.1 Types of Hazard

The following list provides examples of CAP 632 operator hazards. It is not exhaustive merely an example of the types of hazard that should be considered:

Fire in the Air; Mid-Air Collision; Heavy Landing; Passenger Incapacitation in the Air; Fuel Exhaustion; Passenger Incapacitation on the Ground; Ditching; Lightning Strike; Pilot Incapacitation; Structural Failure; Control Failure, Aircraft Accidents Involving Crowd Casualties; Aircraft Crash; Articles Falling from Aircraft; Runway Blockage; Fire on the Ground; Contaminated Fuel; Loose Articles in Cockpit; Weather Diversion; Loss of Control.

1.2 Assessment

Assessment of severity of hazard and likelihood of occurrence is subjective and is based on personal experience of the activity under assessment or statistical evidence when available.

1.3 Severity of Hazard

The severity of a hazard should be assessed under the following headings, depending on the possible outcome should the hazard become a reality, and allocated a score:

Trivial	Minor Injury	Serious Injury	Up to 4 Fatalities	4 or more Fatalities
1	2	3	4	5

1.4 Likelihood of Occurrence

The likelihood of the hazard occurring should be assessed against the following headings and again allocated a score:

Highly Unlikely	Possible	Quite Possible	Likely	Highly Likely
1	2	3	4	5

1.5 Risk Rating

1.5.1 The Risk Rating is the figure obtained when the Severity assessment is multiplied by the Likelihood assessment.

1.5.2 A resultant figure of less than 6 indicates a low risk; a figure between 6 and 15 a medium risk; and a figure greater than 15 a high risk.

1.6 Mitigation

1.6.1 Mitigation action should be taken whenever possible to reduce risk ratings even when the risk is low.

1.6.2 High risk ratings should generally be deemed unacceptable and mitigation always sought to reduce the rating to an acceptable level - medium or better.

1.7 Matrix Production

Once Severity and Likelihood levels and mitigation measures (where appropriate) have been decided they should be entered in the matrix.

Hazard	Severity	Likelihood	Rating	Mitigation	M/Factor	Final Rating
Bird Strike	3	3	9	Use a helmet with a visor.	Severity reduced to 2	6
Fire in the Air	4	2	8	Good engineering practices	Likelihood reduced to 1	4
Aircraft Accident Involving Crowd Casualties	5	3	15	Adhere to separation distances, ensure crowd remain inside crowd line.	Likelihood reduced to 2	10

The content of the above table is for example only and does not imply or infer a risk level.

1.8 Risk Assessment Audit Trail

Organisations should record and retain the details of their risk assessment process.

Annex C **Guidance on Experience Requirements to Fly Jet or High Performance Piston Engine Aeroplanes**

1 **Introduction**

The notes below are intended to provide guidance to owners/operators of jet or high performance piston engine aircraft that are operated under CAP 632 as to the training and supervision which might be applied to the pilots operating such aircraft. It is intended only as guide for Chief Pilots. Due to the variation in skill and ability of different pilots there will be occasions when more or less training and supervision would be appropriate; in other words, each pilot must be judged on his or her individual merits.

2 **Levels of Experience**

Three levels of experience are recommended; the training and supervision of pilots with total experience falling between the designated levels should be adjusted accordingly.

- **Inexperienced** up to 50 hours PIC post licence issue.
- **Intermediate** between 50 hours PIC post licence issue and 450 hours PIC.
- **Experienced** Over 450 hours PIC.

3 **Minimum Recommended Experience Required Before a Pilot Should be Considered for Self Authorisation**

Experience Level at the start of training	Experience Level before consideration for Self Authorisation
Inexperienced	50 hours on type/similar types
Intermediate	50hrs on type/similar types reducing to 15hrs depending on hours PIC
Experienced	Training + 5 hours PIC on type/similar types

4 **Self Authorisation**

- 4.1 When considering pilots for self authorisation, Chief Pilots should take into account the pilot's experience levels, as outlined above, the abilities of the pilot concerned and the complexity of the aircraft being flown. Further, self authorisation should not initially be blanket clearance covering all flights. It would be appropriate for a pilot to be approved to self authorise local flights in the first instance but not land away flights or aerobatics/formation until such time as sufficient experience was gained in these areas.

- 4.2 It is recommended that any pilot in the "inexperienced" and "intermediate" experience levels be subjected to such authorisation restrictions and that "experienced" pilots should also be so restricted if their background experience warrants it. For example, it would be inappropriate for a pilot with over 450 hours PIC on simple single engine piston class aeroplanes to fly some of the available jet aeroplanes without some restrictions being applied.

Annex D Specimen Pre-Flight Briefing

The following non-exhaustive list is a guide to the items that should be checked prior to flight. It is recommended that such a list is easily accessible wherever pre-flight planning is undertaken.

1 General Handling Sorties

- OCM SIGNED.
- FLIGHT CORRECTLY AUTHORISED - (Self authorisation approved?).
- HOME AIRFIELD INFORMATION - Runway in use? Work in progress? etc.
- CHECK LATEST MET FOR HOME AIRFIELD AND OPERATING AREA.
- DIVERSION CHOSEN - AIRFIELD INFORMATION - Is it open? Will they accept you? Runway in use? Work in progress?
- LANDING FUEL AT BASE FOR CHOSEN DIVERSION.
- DEPARTURE DETAILS PASSED TO ATC.
- ROYAL FLIGHTS.
- LOCAL NAV WARNINGS.
- PASSENGER BRIEFED - NEXT OF KIN DETAILS - SICK BAG.
- ARE YOU WITHIN CURRENCY LIMITS?
- ARE YOU PHYSICALLY AND MEDICALLY FIT TO FLY?
- ARE YOU FATIGUED OR RUSHED?
- ARE YOU DRESSED TO SURVIVE?
- LIFE JACKET, IMMERSION SUIT, LIFERAFT?
- CHECK ALL LATEST INFORMATION ON OPERATING PROCEDURES.
- CURRENT MAPS AND CHARTS.
- TECH LOG.
- EMERGENCIES – in current practice.

2 Navigation Sorties

(additional to 1 above)

- ROUTE WEATHER FORECAST.
- BAD WEATHER PLAN.
- NOTAMS CHECKED.
- DESTINATION NOTIFIED.
- DESTINATION AIRFIELD - WEATHER/AIRFIELD INFORMATION.
- DIVERSION AT DESTINATION - BOOKED - LANDING FUEL.
- DOCUMENTATION - TECH LOG.
- PILOT MAINTENANCE CERTIFICATE.

3 Formation Sorties (additional to 1 and 2 above)

- QUALIFIED.
- FORMATION BRIEFING.
- FORMATION POSITIONS.
- FORMATION CHANGES.
- EMERGENCIES, LOSS OF LEADER?

Annex E Guidance on Appropriate Flying Clothing and Safety Equipment (Dress to Survive)

1 Flying Clothing

1.1 Use of the correct flying clothing is an important factor in the safe operation of ex-military aircraft. This class of aircraft, even the older piston engine types, are capable of operating at speeds and heights well in excess of the average light aircraft and in-service experience has led to the development of specifically designed flying clothing. Military aircrew are equipped and trained to survive accidents and incidents: civilian operators of ex-military aircraft are strongly encouraged, and in certain circumstances, required, to follow the survival best practice developed by the services.

1.2 Flying Suits

1.2.1 Flying suits are the only practical garment for flying in ex-military aircraft. In addition to protection, they also assist with the storage of maps and documents and prevent loose articles falling into the cockpit, particularly important in aircraft without cockpit floors or storage areas, such as the Spitfire, the Corsair or even the Harvard.

1.2.2 Flying suits offer protection in the case of abandonment or ejection and, if properly fireproofed, in the case of fire. Given the possible close proximity between fuel and the pilot, particularly in piston engine ex-military aircraft, wearing of a fire resistant flying suit such as those made of Nomex is very desirable and highly recommended.

1.3 Flying Boots

The use of correctly sized boots specifically designed to give good ankle support is particularly important in the abandonment or ejection scenario. Good ankle support is very beneficial in a parachute landing and it is important that, in the case of an ejection, the boots are not lost on ejection.

1.4 Flying Helmets

1.4.1 Flying helmets are required for flying in all jet aircraft and highly recommended for all other ex-military aircraft (see paragraph 8.7.1).

1.4.2 The helmet clearly offers protection during abandonment, ejection and the subsequent parachute landing. However, it also has an important head protection role during a forced landing and, with an adequate visor in the down position, in the event of a bird strike. Given the speeds of ex-military aircraft, even when limited to 250 knots, a bird strike in the cockpit area can, and has in the past, caused pilot incapacitation.

1.5 Flying Gloves

Cape leather or USAF style flying gloves offer considerable protection against cockpit fires and should be worn for all flights.

1.6 Immersion Suits

1.6.1 The sea temperature around UK only exceeds +10°C for a relatively short period during the summer months. Survival times in the sea fall rapidly as the water temperature falls below +10°C and, equally importantly, the ability to carry out any task, such as climbing into a life raft, becomes very rapidly impaired.

- 1.6.2 The current military practice is that all fast jet aircrew will wear immersion suits for all flights in the UK throughout the period that the sea temperature is below +10°C, irrespective of whether the flight is planned to be over the sea or not.
- 1.6.3 Operators of jet aircraft, particularly those based near the sea or who regularly fly in coastal areas, should give serious consideration to the use of immersion suits at appropriate times.

2 Other Survival Equipment

2.1 Life Jackets

- 2.1.1 For many years it has been a standard military practice for life jackets to be worn on all fast jet flights in the UK. Given that the furthest distance inland from the sea that can be achieved in the UK is about 70 nm and the speed of jet aircraft, this would seem a sensible precaution to take.
- 2.1.2 A life jacket should be worn at all times for any flying over, or near, the sea in any aircraft.
- 2.1.3 The life jacket should be adequate for the task, which, in the case of ex-military piston engine aircraft, means that it should be strong enough to withstand the likely forces involved in an abandonment and parachute descent. It is unlikely that a jacket designed for use in light aircraft would be robust enough for this purpose. For aircraft fitted with an ejection seat, the correct style of military life jacket is the only one suitable for the purpose. If a life raft is carried, the life jacket must have suitable connections to attach the raft to the jacket.

2.2 Life Raft

Most ex-military aircraft are designed to carry a life raft, normally in a seat pack which can be attached to the life jacket. The life raft considerably increases the chances of survival in a sea or remote area survival situation.

2.3 Ejection Seats

As discussed in Chapter 5 paragraph 4, most ex-military aircraft fitted with ejection seats will be required to have them serviceable. For those where this is not mandatory, mainly the Jet Provost aircraft, it is highly recommended that operators give serious consideration to the survival advantages of live ejection seats.

2.4 Parachutes

- 2.4.1 Parachutes should be worn on all flights in ex-military aircraft. The only exception to this might be large multi-engine aircraft such as the B17 or B25 but even in these cases carriage of suitable parachutes may be a prudent precaution.
- 2.4.2 In those jet aircraft where the ejection seat is inhibited, a parachute should still be worn by all occupants of the aircraft.

3 Other Considerations

3.1 Training

It is of little value to carry expensive and beneficial safety equipment if the potential user, be it pilot, crew or passenger, cannot use it because of lack of knowledge or training. It is imperative that correct training, both initial and refresher training, is carried out on all safety equipment in use. For those occupants who do not have an appropriate military background this training must be comprehensive, particularly when advanced survival aids such as ejection seats are being used.

3.2 **Equipment Serviceability**

Safety equipment will only be required for use on one occasion but when called upon to work, it must work. Serviceability of the equipment is therefore vital. Some equipment such as ejection seats will require servicing as part of the general aircraft maintenance but other equipment such as flying suits, flying helmets, parachutes and life jackets will be the responsibility of the operator or individual pilot. Common sense dictates that these items should be serviced in accordance with the manufacturers' recommendations or, where no recommendation exists, at regular intervals and at least annually.

INTENTIONALLY LEFT BLANK

Annex F Guidance on the Conduct of the Audit Visit

1 Introduction

The notes below are designed to assist owners/operators of aircraft that are operated under CAP 632 in preparing for the annual audit inspection. Not all aspects covered below will be applicable to every operation but the detailed scope of the paperwork to be inspected will be as defined in the agreed OCM.

2 Frequency of Inspection

2.1 Audit inspection visits are made on a pre-planned basis on a date that is mutually convenient to both the CAA FOI(GA) and the organisation.

2.2 Audit inspection visits will be made on approximately an annual basis. Some degree of flexibility on the timing of the visit is inevitable due to the FOI(GA)'s seasonal workload and availability of management personnel within the organisation to be inspected.

3 The Audit Inspection

The audit inspection is a formal review of the organisation's operation and paperwork as laid down in CAP 632 and as specified in the OCM. The size and complexity of the organisation needs to be in keeping with the number and types of aircraft operated and the experience levels of the pilots involved. The following areas are, where relevant, to be addressed.

3.1 Operational Organisation

The organisation has adequate facilities to enable all appropriate pre-flight information to be gathered and pre-flight decisions to be made. Specifically, the following must be available, either in-house or easily accessible on the aerodrome, to pilots, operations staff and supervisors:

- a) Meteorological information.
- b) Flight planning information including:
 - i) Up to date charts;
 - ii) Up to date flight planning documents;
 - iii) Access to NOTAMs;
 - iv) Access to AICs.
- c) Aircraft documentation for planning purposes (Aircrew Manuals, Pilots Notes, Operational Data Manuals and any specific, more stringent limitations imposed by the Permit-to-Fly and/or the owner/operator).
- d) Aircraft technical documentation (Technical log, deferred defects list, Release to Service etc).
- e) Pilot currency information (see sub-paragraph 3.4.1 below) including:
 - i) Licence and medical currency;
 - ii) Licence Exemption currency, if applicable;

- iii) Date of last flight on type, or similar types;
 - iv) Date of last display on type, or similar types, if relevant;
 - v) Date of next dual check, if appropriate;
 - vi) Authorisation requirements.
- f) The Organisation Control Manual - complete including all amendments. OCM must be signed by all current pilots.

3.2 **General Documentation**

Historical documentation relating to previous flights, training, technical requirements and carriage of passengers must be retained by the organisation for audit purposes. The level of documentation will be specified in the OCM and will vary depending on the scope of the OCM.

3.3 **Documentation - Technical**

3.3.1 **Aircraft Technical Log**

An Aircraft Technical Log must be kept in accordance with ANO Article 17. The specific layout of the Technical Log will be agreed with the A8-20 Maintenance Organisation and may principally be used as a maintenance document. However, particularly in some smaller organisations, the Technical Log may also be the principal method of recording all flight times.

3.3.2 **Permit Maintenance Release**

A maintenance document as detailed in the BCAR A3-7. It must be readily accessible to pilots.

3.3.3 **Deferred Defects List**

There must be a means whereby pilots can ascertain the status of unserviceabilities, rectification carried out, and any defects, including any associated limitations, where rectification has been deferred.

3.3.4 **Authorisation Sheets**

Many organisations will choose to record all flights on authorisation sheets, usually to the standard RAF pattern.

3.4 **Documentation - Pilot and Training**

3.4.1 **Pilot Licence and Personal Details Record**

To include all licence, DA and Exemption expiry dates.

3.4.2 **Aircraft Documentation for Training and Reference Purposes**

All appropriate Pilots Notes, Aircrew Manuals, ODM's plus any training notes or other aids must be easily accessible and available for all pilots.

3.4.3 **Groundschool Technical Record**

A record of all type conversion or continuation groundschool training and tests carried out.

3.4.4 **Pilot Flight Training Records**

Details of all flying training carried out including a post flight assessment by the instructor.

3.4.5 **Pilot Final Handling Test Report**

Record of post conversion FHT including certification by Chief Pilot/Chief Inspector of pilot competency.

3.4.6 **Further Training Report**

Details of any continuation training carried out. Can also include formation/aerobatic clearance and self authorisation approval.

3.4.7 **Pilot Maintenance Authorisation**

Clearance by the A8-20 approved organisation for the named pilot to carry out maintenance items outside the scope of pre and post flight checks such as air and oxygen charging, changing bulbs etc.

3.5 **Documentation - Other**

3.5.1 Recording of occasions when 250 knots was exceeded below FL100.

3.5.2 Carriage of Passenger form.

3.6 **Inspection of Documentation - Technical**

It will normally not be necessary to inspect all the documentation generated in any one year. Sample flights will be chosen at random to be fully investigated in terms of:

- a) Was the aircraft serviceable and in check at the time of the flight?
- b) Was the pilot competent and current to carry out the flight?
- c) Was all post flight action fully carried out?

3.7 **Inspection of Documentation - Pilots and Training**

The organisation retains records of pilots currency and training. This will vary in depth and content dependant on the complexity of the organisation, the scope of the OCM and the experience levels of the pilots. The information can be maintained in any agreed format including individual pilot folders or, where only experienced pilots are involved, on a comprehensive record board. Information on a cross-section of pilots will be inspected to ensure compliance with the OCM.

3.8 **Maintenance Arrangements**

3.8.1 **Airworthiness Responsibility and Co-ordination**

A review of the Maintenance Agreement. Including liaison contact and defined engineering responsibilities. Do the arrangements actually work in practice?

This may include a survey of the aircraft in service, i.e. ready to fly and not on maintenance.

3.8.2 **Aircraft Maintenance Program**

Does the agreed maintenance program reflect the current usage and operation of the aircraft?

3.8.3 **Aircraft Documentation**

Copies of all appropriate aircraft documentation, Permit-to-Fly, Exemptions, Inspection Status must be easily accessible and available for all pilots.

4 Post Inspection Actions

4.1 Verbal Debrief

The management of the organisation will be given a verbal debrief on the major findings of the inspection visit prior to departure. Any significant non-conformities will be brought to the management's attention during this debrief with the indication that a written report will follow. Any good features will also be commented upon.

4.2 Follow-up Action

4.2.1 Observations Made and Notified for Information Purpose Only

The CAA inspector will notify the organisation management of any observation he may have on the operation. Such observations are not non-conformities, and require no follow-up action.

4.2.2 Identified Significant Non-Conformities

Significant non-compliances will be brought to the attention of the organisation management in writing. A set period of time, dependent of the importance of the error, will be given to rectify the matter.

4.2.3 Identified Serious Non-Conformities in Need of Immediate Remedial Action

Consideration will be given to the agreement to the OCM until major or dangerous non-compliances are remedied. The management of the organisation will be given clear evidence, in writing, of the errors and the steps that are being considered will be confirmed. The management will be required to submit a written explanation of the circumstances leading to the failure to meet the OCM requirements and the measures they intend to put into place to rectify the problems.

Appendix 1 to Annex F

Operational Arrangements - Check List

Operator: EMA:	Date: Location:	
Flight Planning		
The operator must have a system for the supply and review of flight planning information and documentation for all pilots. The operator must have documentation specific to aircraft type, including Aircrew Manuals, Pilots Notes, Permit-to-Fly. These must be available for the review of all pilots.	Meteorological Information	
	Flight Planning Documents	
	Charts	
	AIC's / Notams	
	Aircraft Planning Documentation	
Comments:		
Pilot Information		
The operator must have a system in place to be able to confirm a pilots licence, personal details, currency, flight and daily maintenance authorisation status.	Licence and Personal Details	Pilot reviewed:
	Currency	Dual Check/ETR
	Flight / Maintenance Authorisations	
	Comments:	
Operation Control Manual (OCM)		
The operator must have a CAA agreed OCM. which must be available to all pilots. A system must be in place to confirm that all pilots have read the OCM.	Agreed Amendment State	OCM version:
	Signed by Pilots	
	Comments:	
Technical Log Records		
The operator must have a Technical Log for each aircraft operated. Pilots should be given guidance on its completion.	Technical Log	Sector 1: Sector 2:
	250 Knot record	
	Carriage of passenger record	
	Comments:	
Pilot Training		
The operator must have a CAA agreed training schedule. This must include a system for the recording of all pilot, ground and flight training, including results whether satisfactory or not.	Training Schedule/Syllabus	
	Technical Exams	
	Flight Records	
	FHT Report	
	Further Training	
Comments:		
Continuing Airworthiness Arrangements		
The operator must have a Maintenance Agreement with an A8-20 organisation.	Point of contact with A8-20	Name & Position
	Maintenance Agreement	Current-Yes/No
	Frequency of submitting auth sheet/flying hours to A8-20	At base Away from base
	Process for A8-20 to notify operator of next maintenance due-hrs/date/dgs	
	Process for handling defects	At base Away from base
	Process for handling LTOs & MPDs	
Comments:		

Appendix 2 to Annex F

Maintenance Support Arrangements - Check List

Operator: EMA:	Date /Location: Aircraft type:	Complex/Intermediate/Simple
Airworthiness Responsibility		
The operator must hold copies of the Pre-flight/Daily check sheets reflecting the maintenance schedule. The operator will be required to record Operational and technical problems encountered and the measures taken to overcome them. The operator is responsible for ensuring the aircraft is in compliance with the Maintenance Program and Mandatory Permit Directives.	Pre-flight Checks	
	Daily Checks	
	Defect Rectification	
	Maintenance Program	
	MPDs	
Comments:		
Airworthiness Co-ordination		
The Operator must hold appropriate approvals to maintain its own aircraft or have a contract with an Approved BCAR A8-20 Organisation, for which it is able to review the capability for the particular aircraft maintenance and continuing airworthiness (M5/E4) approvals. Qualification and terms of reference for the key personnel within the organisation should be detailed within the OCM. This contract must define each party's responsibilities.	Maintenance Liaison Contact	
	Maintenance Agreement	
	Operator Capability to review maintenance Standards	
	Key personnel Terms of Reference	
	Defined Ops/Eng. Responsibilities	
Comments:		
Aircraft Maintenance Program		
The operator must have the Aircraft maintained to an Agreed Maintenance Program	Check Cycle	
	Program Review	
	Program Accepted by CAA	
Comments:		
Aircraft Technical Log		
The Operator must have a Technical Log for each aircraft operated. Crews should be given guidance on its completion. Policy towards allowable deficiencies with associated flight limitations.	Format	
	Permit Maintenance Release	
	Deferred Defects	
Comments:		
Maintenance Records		
The Operator must make arrangements to maintain the aircraft records including Maintenance Records, Flying Times, Inspection Status, Exemptions, Flight Test.	Aircraft Records	
	Flying Times	
	Permit-to-Fly (PMR)	
	Exemptions	
Flight Test (PFRC)		
Comments:		