

The amendments described in this document are not believed to introduce any additional costs to Service Providers or have previously been published elsewhere (as described within the document) and are therefore provided for **information only**.

All new text is shown in **blue**; deletions are shown in ~~red-strikethrough~~.

NOTE: A search and replace will be conducted throughout the book to show the formation of the new 'Aerodrome and Air Traffic Standards Division'. All references to 'Air Traffic Standards Division' will be replaced with 'Air Traffic Standards Department'.

Abbreviations

AATSD Aerodrome and Air Traffic Standards Division

ATSD Air Traffic Standards ~~Division~~ Department

~~mb~~ — Millibars

Directory

Addresses will be updated to reflect the formation of AATSD.

Part A – The Regulatory Framework

No changes anticipated in Part A, apart from updates to reflect the formation of AATSD.

Part B – Generic Requirements and Guidance

Part B, Section 1 – ATS Approval – Documents

APP 02 Maintenance Arrangements

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6 Personal Technical Certificates

In the absence of an alternate and accepted competency scheme the Personal Technical Certificate scheme will apply (1698).

ANSPs using the PTC scheme are still required to comply with ESARR 5 requirements and with the SES Common Requirements Annex 2 ~~11~~, paragraph 3.3, Safety requirements for engineering and technical personnel undertaking operational safety related tasks.

Part B, Section 2 – Air Traffic Control

ATC 01 ATC Support Systems and Facilities

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2.4.1 Pressure measurement equipment or a method of obtaining pressure setting (16), and an indicator displaying pressure setting are to be provided (17). The required accuracy of measurement or observation shall be ± 0.5 ~~mb~~ (hPa) (18). Detailed information can be obtained from CAP 746 and ICAO Annex 3.

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ATC 02 ATC Documentation

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1.3.10 Temporary Operating Instructions (TOI) should be used to notify changes of a short-term nature and NOT for changes to actual procedures (158). For example a TOI would be issued to promulgate the non-availability of a piece of Air Traffic Control equipment. **The maximum period of TOI validity is six months, therefore a TOI ~~Temporary Operating Instructions~~ should be dated. With documented justification, a TOI may be re-issued after it has expired to cover periods of greater than six months** (159).

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5.6 Military units employing civil ATCOs are to hold documents listed in column (a) of the following table, and hold documents as required by the operational role of the unit listed in column (b) as agreed between the unit and the Regional Manager ATS Safety Regulation (1753).

REQUIRED DOCUMENTS (a)	OPTIONAL DOCUMENTS (b)
JSP 550 JSP 552 RA 2000 Series FLY MANUAL OF MILITARY AIR TRAFFIC MANAGEMENT RAF FLIPs MATS Pt 1 MATS Pt 2 ANO	CAP 168 CAP 772 ICAO Doc 8126 ICAO Doc 7910 ICAO Doc 8400 ICAO Doc 8585
REQUIRED DOCUMENTS (a)	OPTIONAL DOCUMENTS (b)
UK Integrated AIP AICs NOTAM CAP 670 CAP 413 ICAO Doc 4444	ICAO Doc 8643 ICAO Doc 7030 Plus Selected documents from RAF ATCEB list

ATC 02 – Annex A

CHAPTER 4 FLOW REGULATION

~~As stipulated by parent ACC or adjacent airfields.~~ Detail compliance with applicable requirements of Commission Regulation (EU) No 255/2010 which details the Common Rules on air traffic flow management.

Part B, Section 4 – Generic Requirements and Guidance

NOTE: This new Section incorporates text previously published as IN-2011/029 on 9 May 2011 (www.caa.co.uk/IN2011029). IN-2011/029 will be withdrawn upon publication of Amendment 12 to CAP 670.

GEN 04 Malicious Software Issues with External Storage Devices

1. Introduction

1.1 There have been instances of malicious or unwanted software being transferred to operational ATS equipment through the use of external storage devices.

2. Scope

2.1 This document addresses the use of portable storage devices with operational ATS equipment.

2.2 Any storage device used to transfer information to or from a system should be considered a potential source of harmful software. This may include (but is not limited to) floppy disks, USB memory drives, external hard drives, memory cards and optical media.

3. Further Information

3.1 External memory devices should be controlled, preferably being dedicated to one system and not used for any other purpose.

3.2 Where it is necessary to use a device not normally associated with a specific equipment, suitable precautionary measures should be taken to ensure that no malicious software is transferred to either device (use of virus checking software before and after transfer and write protection being two such processes). The use of devices by external bodies, e.g. manufacturers and external maintenance organisations, should also be controlled by the same processes.

3.3 Where unwanted software is found on a device, any systems that may have come into contact with this device will need checking to verify their status and appropriate remedial action taken. This may include systems belonging to other organisations.

ANSPs should review the potential risks to systems from malicious software introduced by external devices in line with their Safety and Security Management Systems and introduce precautionary processes as necessary.

Part C

Part C, Section 1 – Communication

COM 01 Voice/Data Recording Equipment

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4.1.2 **Acceptable Means of Compliance:** This may be achieved by means of suitably resilient internal storage, e.g. Hard Disk Drives or Solid State Drives, network Storage, removable archive media or by a combination of these.

Note: Attention is drawn to CAP 670 GEN 04 on precautions to be taken with external storage media.

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COM 02 VHF Aeronautical Radio Stations

NOTE: This text has been previously published as CAP 670 Supplementary Amendment 2011/01 (www.caa.co.uk/CAP670SA201101). CAP 670 SA 2011/01 will be withdrawn upon publication of Amendment 12 to CAP 670.

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7 Specific Requirements

7.1 Communications Availability

Adequate safety assurance, risk assessment and mitigation shall be performed by the Service Provider to ensure that the equipment and system ~~The~~ design, installation, operation and maintenance ~~of equipment and systems shall be such as to~~ ensures an availability of communications appropriate for the Air Traffic Services and environment in which it is being provided (394).

Guidance: The availability of communications is dependent on the radio system design, including equipment configuration and power supply arrangements. The selection of equipment with the appropriate duty cycle can also reduce equipment failure. The provision of alarm / status indications is also important in ensuring that appropriate actions are taken to restore communications when a failure occurs.

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7.1.1.2 The maximum field strength outside the DOC, as specified in the frequency assignment, shall not be exceeded (396).

Acceptable Means of Compliance: Evidence to demonstrate that the defined quality of service and any other conditions associated with the frequency assignment have been met within the radio service area.

For **communications in support of Air Traffic Control and Traffic/Deconfliction/Procedural Services Communications**, a combination of radio service area predictions and functional tests would be acceptable. For other Air Traffic Services limited functional tests would be acceptable.

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7.1.2.1 The equipment configuration shall be such as to ensure the availability of communications appropriate to the service being provided (399).

NOTE: The configuration of equipment includes associated antennas, cables, filters, commutation units and other equipment necessary for the operation of the equipment and systems.

Acceptable Means of Compliance:

Air Traffic Control Services – The provision of main, ~~standby~~ and emergency equipment ~~redundancy together with system and location dependent redundancy measures~~.

UK Flight Information Services:

Deconfliction and Procedural Service – The provision of main and emergency equipment.

Traffic Service – The provision of main equipment only.

Basic Service – The provision of main equipment only.

Aerodrome FIS (AFIS) – The provision of main equipment only.

NOTE 1: Equipment provided in addition to the above would be considered to be 'Contingency Equipment', formerly known as 'standby equipment', which is installed for business continuity purposes.

NOTE 2: Wherever a service is provided using main equipment only, it shall be explicitly shown how the risks of ATS radiotelephony failure have been adequately mitigated, taking account of: the local airspace environment, specific ATS task, aircraft characteristics and needs and flight crew procedures. Where appropriate mitigation cannot be demonstrated, it is expected that emergency radiotelephony equipment and/or additional contingency equipment will be provided.

NOTE 3: It shall also be clearly demonstrated how services will be managed during periods of planned withdrawal of single systems to provide for such things as periodic maintenance.

7.1.2.2 The equipment type shall be appropriate for the service being provided and be compatible with the equipment configuration (400).

Guidance: Whilst it is feasible to use transceivers and separate receivers to derive Off-Air Sidetone for Air Traffic Control and the output for Voice Recording, the lack of redundancy in the modules within typical transceivers and the likelihood of an intermittent duty cycle restriction on the transmitter and power supply mean that transceivers are not generally suitable for use in Air Traffic Control Services as main or standby equipment, although they may be suitable for emergency equipment in particular situations.

For ~~AFIS Flight Information Services~~, a transceiver or separate transmitter and receiver are considered suitable as main equipment, with a hand held or portable transceiver being used for emergency equipment.

NOTE: Main and ~~Standby~~ contingency equipment may be operated as 'System A' and 'System B' where either may be considered as Main whilst in operational service and the other is considered as ~~Standby~~ contingency, awaiting selection in the event of failure of the Main equipment or when the Main equipment is taken out of service for maintenance.

7.1.2.3 The planned temporary or permanent withdrawal of main and emergency radiotelephony equipment shall be considered a significant safety related change to current operations and the requirements of CAP 670 APP 01 covering safety assurance and CAP 670 Part A Section 5.9 Change Notification Requirements shall apply.

7.1.3 Duty Cycle - Radio Transmitters / Power Supply Units

The duty cycle for Radio Transmitters and associated Power Supply Units shall be appropriate for the service being provided (401).

Guidance: Air Traffic Control and Traffic/Deconfliction/Procedural Services are likely to generate peaks in use which may exceed the duty cycle of equipment rated for intermittent use and thus continuously rated equipment with a duty cycle of 100% is likely to be required. VHF Radio Transmitters used for ATIS and VOLMET obviously require continuously rated equipment.

7.1.4 ~~For an Air Traffic Control Service,~~ The power supply for the emergency equipment shall be independent of that for the main equipment (402).

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7.1.4.3 **Recommendation:** For an Air Traffic Control and Traffic/Deconfliction/Procedural Services a primary and alternative power supply should be provided to increase the availability of power to equipment and systems in the event of an interruption to one of the power supplies (405). Change over between supplies should be on a 'no break' basis (406). The primary and alternative supplies should be independent of each other for a known period of time (407). An indication of failure for each power supply should be provided to the user (408) and corrective action taken in the event of failure (409). MATS Part 2 procedures should instruct the user of actions necessary in the event of failure (410).

[ICAO Annex 10 Aeronautical Telecommunications Volume I Paragraph 2.9 Secondary power supply for radio navigation aids and communication systems.]

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7.1.5 For an Air Traffic Control and Traffic/Deconfliction/Procedural Services, the system shall provide an indication of system failure that may have an effect on the service being provided, in a timely manner (411), so that actions can be taken to ensure the safe continued provision, ~~of an ATC Service~~ or if necessary, the controlled withdrawal of the service (412).

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Part C, Section 2 – Navigation

ILS 01 ILS Monitors

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10 ~~Glidepath~~ Commissioning Alarm Conditions

10.1 ~~Glidepath~~

10.~~1.1~~ At commissioning the alarm condition given in Table 3 shall be set and checked by flight inspection.

10.2 ~~Localiser~~

10.2.1 At commissioning the Alignment and Displacement Sensitivity alarm shall be checked by field or Flight Inspection.

Rename Table 3 from 'Phase Advance and Retard' to '~~Commissioning Flight Inspection Alarm Conditions~~'.

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12 Alarm testing following Engineering Work

12.1 Following any engineering work involving the aerial distribution unit, feeder cables, aerials or monitor-combining unit, the following glidepath alarm condition shall be set and checked by flight inspection:

- a) Angle low and width wide simultaneously (1867);
- b) Phase advance alarm (1868); and
- c) Phase retard alarm (1869).

NOTE 1: If the monitor phase tests are not successful and transmitter adjustments are required, parts of the normal flight inspection will have to be repeated. ~~Unless staff are highly confident that all phasing is correct, it is advisable to consult the guidelines given in Annex 1 before starting the main flight inspection.~~ Guidance on Sideband Reference Phase Testing can be found in Appendix 1 to ILS 01.

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ILS 03 EU OPS 1 General Requirements

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1.4 Subpart E also allows suitably approved aircraft operators to benefit from the use of Enhanced Vision Systems (EVS). Operators will be able to conduct Category 1 Precision Approaches and Approaches with Vertical Guidance (APV) in reduced RVR conditions.

The ATS Requirements Overview web pages (www.caa.co.uk/ATSRequirementsOverview) provide guidance and links to Safety Requirements for ATS providers and Aerodrome Licence Holders wishing to implement Lower than Standard CAT I, Other than Standard CAT II or Enhanced Vision Systems (EVS) Operations.

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4.2 Operations to an RVR between 549 m and 450 m

NOTE: The following requirements support the ICAO Classification I/T/1.

4.2.1 The Localiser shall meet the Localiser Course Structure requirement for Category 2 as detailed in ILS 02 Table 1 (2358).

4.2.2 The Localiser Sensitive Area shall be defined to protect the CAT II course structure requirements of ILS 02 Table 1 (2359).

4.3 Operations to an RVR between 449 m and 400 m

NOTE: The following requirements support the ICAO Classification II/D/2.

4.3.1 The Localiser and Glidepath shall meet the Category 2 requirements in ILS 01 **except for those in Section 5 Far Field Monitor** (2360).

4.3.2 The Localiser and Glidepath shall meet the Category 2 requirements in ILS 02 (2361).

4.3.3 The Localiser shall comply with ILS 10 paragraph 13.1.4 (2362).

4.3.4 The Glidepath Sensitive Areas shall be defined to protect the CAT II course structure requirements in ILS 02 Table 2 (2363).

4.3.5 The Localiser Sensitive Area shall be defined to protected the CAT III course structure requirements of ILS 02 Table 1 and ILS 10 paragraph 13.1.4 (2364).

5 Other Than Standard Category 2 Operations

~~5.1 The Localiser offset shall be less than or equal to 3 degrees (2365).~~

5.2 1 Operations to an RVR between 450 m and 350 m

NOTE: The following requirements support the ICAO Classification II/D/2.

~~5.2 1.1~~ The Localiser shall comply with ILS 10 paragraph 13.1.4 (2366).

~~5.2 1.2~~ The Localiser Sensitive Area shall be set to protect the CAT III course structure requirements of ILS 02 Table 1 and ILS 10 paragraph 13.1.4 (2367).

NAV 07 ATS Requirements for RNAV(GNSS) Instrument Approach Procedures

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6.1 ATS providers wishing to introduce RNAV(GNSS) IAPs should, with the Aerodrome Licence Holder's permission, apply to the CAA's Directorate of Airspace Policy (DAP) in accordance with the process described in the Instrument Flight Procedures section of the Airspace **Design and Change -Policy** area of the CAA website (www.caa.co.uk/dap).

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- 6.4 An essential aspect to be addressed in the safety assurance documentation is that of the suitability of the performance of the GPS Signal in Space (SiS) to support the intended operation. It is recognised that a performance assessment of the GPS SiS is not a trivial task and is unlikely to be achieved by individual service providers in the short term. With this in mind, the CAA will make available data from monitoring carried out over recent years to allow assurance to be gained that the performance of the SiS is suitable to meet ICAO requirements for the support of Instrument Approach procedures. This or other suitable third party data may be used in the development of safety assurance documentation to argue the acceptability of the GPS to support the approach procedure. [The data may also be used to ensure the performance of the GPS SiS remains suitable to support the approach procedure.](#)

Note: Real time monitoring of the GPS signal is vested in the RAIM algorithm of the aircraft receiver and is not the responsibility of the ANSP.

Part C, Section 3 – Surveillance

SUR 07 Aerodrome Traffic Monitor Safety Requirements

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6.5 Display Orientation

NOTE 1: The orientation of the picture in relation to the view from the VCR will depend on the tasks carried out by the Controller. At a unit where the controller has clearly defined and fairly narrow tasks to perform the orientation is to be such that the runway on the aerodrome traffic monitor is aligned with the view of the runway from the control position (632).

NOTE 2: In such cases where the ~~SMR~~ ATM picture is not aligned with the view of the runway from the VCR then the Human Factors risks that this may pose shall be addressed in the supporting Safety Assurance Documentation (2383).

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SUR 10 Requirements for the Recording, Retention and Replay of ATS Surveillance Data

NOTE: Please see separate Consultation document. This Section has been revised and should be read in its entirety, and comments are welcome on this Section (SUR 10).

Part C, Section 5 – Information and Alerting Systems

IAS Information and Alerting Systems

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3 Status Indicators

Any equipment or facility which has a direct effect on aircraft safety shall have a display showing its status, if not readily apparent, visible to the controller (205).

Recommendation: Where indications of system failures are presented at multiple controller work stations, an adequate safety assessment should be undertaken related to the effects of multiple audible or flashing indicators, the cancellation process for multiple alarms including the cancellation of alarms in other remote locations, the need to cancel alarms at unmanned positions, and any distraction that may be caused to operational tasks.

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