EUROPEAN ORGANISATION
FOR THE SAFETY OF AIR NAVIGATION

EUROCONTROL

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(EAM/GUI)

EAM 5 / GUI 1

EXPLANATORY MATERIAL ON ESARR 5 REQUIREMENTS ON AIR TRAFFIC CONTROL OFFICERS

PART B

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Abstract :

This guidance material has been prepared by the Safety Regulation Commission to provide guidance for ATM safety regulators and support the implementation of ESARR 5.

The main purpose of this document is to provide guidance about the provisions established in ESARR 5 and more specifically in its Section 5 'Safety Requirements', sub sections 5.1 and 5.2 addressing air traffic controllers. Each requirement is illustrated by giving explanatory material that includes a rationale, the most significant implications mainly for Regulator but also sometimes for Provider, and information about further development.

This is one element of a series of guidance documents to be developed by SRC to support the implementation of ESARR 5.

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F.3 DOCUMENT APPROVAL

The following table identifies all management authorities who have approved this document.

AUTHORITY	NAME AND SIGNATURE*	DATE
Quality Control (SRU)	***signed by Daniel Hartin*** (Daniel HARTIN)	05-Mar-04
Head Safety Regulation Unit (SRU)	***signed by Peter Stastny*** (Peter STASTNY)	05-Mar-04
Chairman Safety Regulation Commission (SRC)	***signed by Martin Radusch*** (Martin RADUSCH)	05-Mar-04

* In order to reduce the size of files, all documents placed on the SRC Website do not contain signatures. However, please note that all management authorities have signed the master copies held by the SRU. Requests for copies of master documents should be e-mailed to: sru@eurocontrol.int.

F.4 DOCUMENT CHANGE RECORD

The following table records the complete history of this document.

EDITION NUMBER	EDITION DATE	REASON FOR CHANGE	PAGES AFFECTED
0.01	25-Nov-02	Creation of the document (not formatted as EAM)	All
0.02	11-Feb-03	Formatting previous version of the document	All
0.03	09-May-03	Incorporation of the comments received from the first consultation within ASP Working Group and from ALRG. Addition, of explanatory notes for ESARR 5, Section 5.1, General Requirements.	All
0.04	16-Oct-03	Title change to reflect the subject being ATCOs; editorials; incorporation of AGAS action with regard to training on safety nets; creation of Parts A and B of EAM 5 / GUI 1.	All
0.1	16-Dec-03	Document sent to SRC for comment following incorporation of comments received from consultation with the ATM Services personnel Working Group (RFC 0355).	All
0.2	11-Feb-04	Final SRU quality check. Document status amended to 'Proposed Issue' and sent to SRC Commissioners for approval by correspondence.	All
1.0	05-Mar-04	Document formally issued.	All

F.5 CONTENTS

F.6 EXECUTIVE SUMMARY

This guidance material has been prepared by the Safety Regulation Commission to provide guidance for ATM Safety Regulators and to support the implementation of ESARR 5.

Within their national legislative arrangements, ATM safety regulators shall have in place ESARR 5 related safety regulatory functions, resources and procedures in order to enforce and verify compliance with ESARR 5.

The main purpose of this document is to provide clarifications on provisions established in ESARR 5, and more specifically in its Section 5 'Safety Requirements', sub sections 5.1 and 5.2 addressing air traffic controllers. Guidance material for engineering and technical personnel undertaking safety related task will be developed later. Each requirement is illustrated by giving explanatory material that includes a rationale, the most significant implications mainly for Regulator but also for Provider, and when applicable, information about further development.

This documents forms part of a series of guidance documents being developed by SRC in order to support the implementation of ESARR 5.

Part A of the document deals with explanatory notes for ESARR 5 requirements in Section 5, sub-section 5.1 and 5.2.

Part B of the document introduces the rating requirements for those ratings listed in ESARR 5. In order to facilitate the reading of the document Part B has been kept separate for those interested in having guidance on how to determine the necessary training requirements based on tasks analysis for each rating.

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1. INTRODUCTION

Rating requirements documented within Part B of EAM 5 / GUI 1 provides the necessary guidance to Providers of air traffic services and Designated Authorities to conduct the same process at national level. This will help in defining the training objectives (see also Common Core content Training Objectives) and to establish the safety related tasks in provision or supporting air traffic services.

States shall use this document as guidance material and modifications/amendments to rating requirements should be taken into account when necessary.

This document has been developed by the team from the United Kingdom's Civil Aviation Authority who were contracted to develop the Harmonised European ATC Licence. The work was overseen by the Licensing Work Group (LWG), which contained members from Germany, Portugal, France, the Netherlands, Ireland and Denmark. Each Member was allocated a number of other States with whom they liaised during the project.

The LWG developed the concept of the new ratings and rating endorsements and, to validate their proposals, the UK team undertook an analysis of the controller's task in all rating disciplines. This analysis was based on work already completed in the UK to develop more relevant initial ATC training courses and to put in place processes to ensure the courses were updated to meet changing operational requirements. This analysis was not in a format acceptable to the LWG and, while changing the format, the UK team took the opportunity to review and update the analysis to produce the Rating Requirements. The task analysis was a one off project conducted to justify the new Ratings and Rating Endorsements in the European ATC Licence.

The analysis has not been updated since then, but this could the subject for further work later, if necessary. ECAC States identifying the need for an update of the proposed analysis shall carry out that process using their personnel involved in the national licensing activities.

The 'Essential Knowledge' relates to the United Kingdom because it was copied, with a number of amendments, from the original UK task analysis. Should States wish to use the Rating Requirements in the development of training courses and competence assessments, the Essential Knowledge will have to be changed to refer to ICAO and national documents. Reference also needs to be made to the Common Core Content courses, which had not been developed at the time the Rating Requirements were produced. The Common Core Content Training, when developed, will consider the analysis and mapping between relevant tasks and the topics/sub-topics can be identified within the document Guidelines for Common Core Content Training Objectives for Air Traffic Controllers.

Within the Rating Requirements there are some missing references (i.e. Aerodrome Control Visual rating does not contain reference to IFR Flights) which determined changes within the document itself. The anomalies you may find within the document are a result of failure to incorporate amendments and additions made to a particular rating in the other rating requirements as appropriate.

The rating requirements have been subject to consultation with the Member States of the Licensing Work Group prior to publication, which removed most of the discrepancies and typing errors. However, the depth analysis of each individual could bring reasons for amendment at later stage.

2. RATING REQUIREMENTS

2.1 Background

This document is derived from the Requirements for Air Traffic Controllers developed for the European ATC Licence harmonisation project. The terminology used was developed by Drafting Group 4 of the Common Core Content Task Force.

There is a direct correlation between the terminology used in this document and that in use in the previous editions of CAP 624 (the UK Standards for Air Traffic Controllers) which this document supersedes:-

Requirements = Standards

Rating = Key Purpose

Key Role = Key Role

Topic = Unit of Competence

Sub Topic = Element of Competence

Performance Objective = Performance Criteria

Conditions = Range Statement

The **Requirements** are the outcome of a functional analysis of the controller's job, which produced a series of statements called **Performance Objectives** which describe the actions, behaviours or outcomes that the controller should be able to demonstrate.

Each control discipline contains a number of **Key Roles**. For instance a key role common to all ratings is to 'Correlate information useful for the safe and efficient conduct of flights'. This key role is divided into two **Topics**, one dealing with Meteorological information and the other with Aeronautical information. Each Topic is then divided into **Sub-topics,** in this case to 'collect, to collate and to disseminate the information'.

Topics common to more than one discipline, Aerodrome, Approach or Area control, can be identified and credit given to staff who have already undergone training in a those topics in a different discipline. As not all topics are applicable to every discipline, the numbering used will not necessarily be sequential.

Each sub-topic contains a number of Performance Objectives.

Each Performance Objective is qualified by a statement of **Conditions**. Conditions describe the context in which the Performance Objectives apply, which means in its simplest form 'can the controller act with equal ability by day or night, and in good or poor weather conditions?'

Finally the Requirements contain detail of the Essential Knowledge, that is, the knowledge and understanding a controller needs to carry out the task. In order to separate aircraft, the controller must not only know the separation standard to be applied, he must also understand how to apply it. Similarly the controller needs to understand some aspects of the formation of thunderstorms in order to be able to predict their effect on operations and to make allowance for those effects when exercising control.

Determining Competence by Assessment

In order to determine Competence an Assessor (Examiner) seeks evidence of performance [Can the trainee controller actually do the job] both by direct observation and by reference to the training records. Assessment differs from an examination system, by taking a longer more detailed view of performance, rather than taking an intense but short sample of the trainees' work. Performance is assessed in all areas under all conditions seeking to prove that the trainee can perform reliably and consistently to the required level of competence.

Performance must be assessed against the Performance Objectives on sufficient occasions to ensure competence has been demonstrated across all the Conditions for which performance evidence is required. Where performance is tested in only some of the contexts in the conditions, the application of knowledge must be tested by questioning for the remainder.

All items listed, as Content must be tested to prove an understanding of the knowledge, the underlying principles and the application of the knowledge to performance in the workplace. A Trainee who demonstrates practically that he can do the job and can explain his reasons for acting in a particular manner, thereby demonstrating understanding has fulfilled all the requirements without the need for additional written testing. It is essential that the Assessor (Examiner) determine understanding, rather than pure knowledge, when determining competence.

Summary of Terms

Key Role

Describes in broad terms, the principal components of the controller's job.

Topic

Divides the Key Role into definable common areas.

Sub-Topic

Defines specific areas of the topic.

Performance Objective

Describes the actions of the controller that demonstrate the correct performance of the Sub-Topic.

Conditions

Describes the contexts in which the Performance Objective apply.

Essential Knowledge

The fundamental knowledge and understanding necessary to perform to the Requirements and to transfer the skills from one situation to another.

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2.2 Rating Requirements for ATCOs – Aerodrome Visual Rating

KEY ROLES AND TOPICS FOR AERODROME CONTROL VISUAL RATING

KEY ROLES	TOPICS
KEY ROLE A COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES	A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT A2 COMMUNICATE FROM A VISUAL CONTROL ROOM
KEY ROLE B ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY	B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY B2 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR AERODROME CONTROL
KEY ROLE C CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS	C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
KEY ROLE D SELECT THE DIRECTION OF LANDING AND TAKE OFF	D1 SELECT THE RUNWAY IN USE AND APPROPRIATE VISUAL AIDS
KEY ROLE G MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC	G1 MANAGE FLIGHTS OPERATING IN THE VICINITY OF THE AERODROME G2 MANAGE AERODROME SURFACE MOVEMENTS G8 EFFECT LIAISON WITH OTHER AGENCIES G9 HANDLE DIVERSIONS G10 WORK AS A TEAM MEMBER ON THE AERODROME CONTROL OPERATIONAL POSITION
KEY ROLE H MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES	H1 MANAGE DEVELOPED EMERGENCIES FROM THE AERODROME CONTROL UNIT H2 MANAGE DOMESTIC CONTINGENCIES IN AN AERODROME VISUAL CONTROL ROOM

TOPICS AND SUB-TOPICS FOR AERODROME CONTROL VISUAL RATING

KEY ROLE A	**COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES**
TOPICS	**SUB-TOPICS**
A1 Check and operate communications equipment	A1.1 Establish and monitor the communications equipment serviceability A1.2 Use the communications equipment
A2 Communicate from a visual control room	A2.1 Use standard phraseology applicable to aerodrome control.
KEY ROLE B	**ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY**
TOPICS	**SUB-TOPICS**
B1 Correlate flight data into appropriate proforma for display	B1.1 Obtain flight data information B1.2 Insert flight data into the appropriate proforma
B2 Maintain a representative flight data display for aerodrome control	B2.1 Correlate flight data into a display for aerodrome control B2.2 Update the aerodrome control flight data display
KEY ROLE C	**CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS**
TOPICS	**SUB-TOPICS**
C1 Obtain, interpret and disseminate meteorological information	C1.1 Obtain meteorological information C1.2 Interpret meteorological information C1.3 Disseminate meteorological information

TOPICS	**SUB-TOPICS**
C2 Obtain, interpret and disseminate aeronautical information.	C2.1 Obtain aeronautical information C2.2 Interpret aeronautical information C2.3 Disseminate aeronautical information
KEY ROLE D	**SELECT THE DIRECTION OF LANDING AND TAKE OFF**
TOPICS	**SUB-TOPICS**
D1 Select the runway in use and appropriate visual aids	D1.1 Select the runway in use D1.2 Operate aerodrome lighting
KEY ROLE G	**MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC**
TOPICS	**SUB-TOPICS**
G1 Manage flights operating in the vicinity of the aerodrome	G1.1 Manage flights operating under the visual flight rules G1.2 Manage flights operating under the instrument flight rules
G2 Manage aerodrome surface movements	G2.1 Control aircraft on the manoeuvring area and aprons and vehicles and personnel on the manoeuvring area
G8 Effect liaison with other agencies	G8.1 Liaise with non ATC agencies G8.2 Liaise with the safety services
G9 Handle diversions	G9.1 Handle diversions
G10 Work as a team member on the aerodrome control operational position	G10.1 Accept responsibility for the operational position G10.2 Monitor performance whilst responsible for the operational position G10.3 Transfer responsibility for the operational position

KEY ROLE H	**MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES**
TOPICS	**SUB-TOPICS**
H1 Manage developed emergencies from the aerodrome control unit	H1.1 Manage radio failures H1.2 Manage situations arising from unlawful interference H1.3 Manage Aircraft Emergencies H1.4 Provide Alerting Service
H2 Manage domestic contingencies in an Aerodrome Visual Control room	H2.1 Safely evacuate the control room.

Topic A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT
Sub-Topic A1.1 ESTABLISH AND MONITOR THE COMMUNICATIONS EQUIPMENT SERVICEABILITY

Performance Objectives	Conditions	Essential Knowledge
A1.1.1 Visual and/or aural indications are checked whilst making and receiving transmissions for indications of normal operation. A1.1.2 Documentation confirming equipment status is checked. A1.1.3 Malfunctions and defects are recorded and reported to the appropriate authority according to standing procedures.	**Procedures**: Unit specific.	**Local procedures** Equipment visual and aural indications. Watch log entries. Local standing procedures for reporting equipment faults. ***Underpinning knowledge*** Deriving information from NOTAMS.

Topic A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT
Sub-Topic A1.2 USE THE COMMUNICATIONS EQUIPMENT

Performance Objectives	Conditions	Essential Knowledge
A1.2.1 The readability of transmissions is assessed. A1.2.2 Standard speech technique is adhered to. A1.2.3 The appropriate frequency is selected and used. A1.2.4 Transmit and intercom switches are used in accordance with standard procedures. A1.2.5 The appropriate telephone is used. A1.2.6 Ancillary telephone equipment is used in accordance with standard procedures.	**Communication methods:** Radiotelephony, Telephone.	**Manual of Air Traffic Services Part 1 (General)** Communications technique Speech technique. Test transmissions.

Topic A2 COMMUNICATE FROM A VISUAL CONTROL ROOM
Sub-Topic A2.1 USE STANDARD PHRASEOLOGY APPLICABLE TO AERODROME CONTROL

Performance Objectives	Conditions	Essential Knowledge
A2.1.1 Standard phraseology is employed wherever possible in communications. A2.1.2 Composition of messages is concise and unambiguous. A2.1.3 Station identity is used correctly. A2.1.4 Acknowledgements and readbacks are obtained and verified when required. A2.1.5 Abbreviated phraseology is used when appropriate.	**Communication by:** Radiotelephone, telephone. **Message Types:** Clearances, instructions, information.	**Manual of Air Traffic Services Part 1 (General)** Standard aerodrome control phraseology Standard speech abbreviations. Radiotelephony callsigns. Communication with aircraft. Transfer of communications. Transmission of company messages.

Topic B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY
Sub-Topic B1.1 OBTAIN FLIGHT DATA INFORMATION

Performance Objectives	Conditions	Essential Knowledge
B1.1.1 Flight data information is extracted from all appropriate sources. B1.1.2 Relevant flight data is included at the earliest opportunity. B1.1.3 Flight data is checked to ensure completeness. B1.1.4 Any significant deficiency in flight data is rectified.	**Methods of Display:** Flight progress strips. Electronic data displays.	**Doc. 4444 Appendix 2** Content of full and abbreviated flight plans ATS service messages. **Doc. 7910** ICAO location indicators **Doc.8585** ICAO abbreviations **Manual of Air Traffic Services Part 1 (General)** Filing of flight plans Non standard routes Repetitive flight plan Exemptions and non standard flights **Local procedures** Flight plan processing

Topic B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY
Sub-Topic B1.2 INSERT FLIGHT DATA INTO THE APPROPRIATE PROFORMA

Performance Objectives	Conditions	Essential Knowledge
B1.2.1 Strip marking is legible and conforms to standard procedures. B1.2.2 Correct message entry formats are used. B1.2.3 Relevant flight data is included at the earliest opportunity.	**Methods of Display:** Flight progress strips. Electronic data displays.	**Doc. 7910** ICAO location indicators **Doc. 8585** ICAO abbreviations **Local procedures** Conventional strip marking

Topic B2 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR AERODROME CONTROL
Sub-Topic B2.1 CORRELATE FLIGHT DATA INTO A DISPLAY FOR AERODROME CONTROL

Performance Objectives	Conditions	Essential Knowledge
B2.1.1 All relevant traffic is included on the display. B2.1.2 Flight progress strips are organised in a manner that reflects the traffic situation in accordance with laid down procedures. B2.1.3 Electronic flight data displays are organised in accordance with laid down procedures.	**Methods of Display:** Flight progress strip displays. Electronic flight data displays.	**Local procedures** Layout and use of flight progress strips. Layout and use of electronic flight data displays.

Topic B2 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR AERODROME CONTROL
Sub-Topic B2.2 UPDATE THE AERODROME CONTROL FLIGHT DATA DISPLAY

Performance Objectives	Conditions	Essential Knowledge
B2.2.1 Information is extracted from all relevant sources. B2.2.2 The display is updated using information received. B2.2.3 Clearances and instructions passed to aircraft and other agencies are recorded. B2.2.4 Co-ordination agreed with other agencies is recorded. B2.2.5 The integrity of EDD performance and data is monitored.	**Sources of information:** Pilot reports. Information from other controllers. Information from other agencies. Computer derived information. **Methods of display:** Flight progress strips. Electronic data displays.	Aircraft performance. **Local procedures** Report formats. EDD display parameters.

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.1 OBTAIN METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.1.1 Current and forecast weather information is obtained before taking over watch. C1.1.2 Current and forecast weather information is monitored during the watch. C1.1.3 Weather information and reports from pilots are recorded..	**Types of briefing:** Self and Met office briefing. **Types of report:** Routine and special reports. Met Warnings. Reports from pilots.	**Manual of Air Traffic Services Part 1 (General)** Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (General)** Windshear. **Manual of Air Traffic Services Part 1 (General)** Meteorological services:- Briefing of controllers. Explanation of terms. Supply of information. Aerodrome meteorological reports (Routine) Aerodrome meteorological reports (Special) Coded aerodrome weather reports. SIGMET. Forecasts ***Underpinning knowledge*** Meteorology:- Wind, cloud, thunderstorms, microbursts, icing, line squalls. Pilot in flight reports (PIREPS) Low level charts. Significant weather charts. Aerodrome warnings

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.2 INTERPRET METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.2.1 Significant weather changes are recognised. C1.2.2 The relevance of meteorological information to individual flights or agencies is established.	**Significant weather:** Surface wind. Thunderstorms and Cumulonimbus clouds . Freezing rain. Moderate / Severe icing. Severe turbulence. Severe mountain waves. Low visibility. Low level wind shear.	**Manual of Air Traffic Services Part 1 (General)** Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (General)** Windshear. **Manual of Air Traffic Services Part 1 (General)** Meteorological services:- Briefing of controllers. Explanation of terms. Supply of information. Aerodrome meteorological reports (Routine) Aerodrome meteorological reports (Special) Coded aerodrome weather reports. SIGMET. Forecasts ***Underpinning knowledge*** Meteorology:- Wind, cloud, thunderstorms, microbursts, icing, line squalls. Pilot in flight reports (PIREPS) Low level charts. Significant weather charts. Aerodrome warnings

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.3 DISSEMINATE METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.3.1 Aircraft are advised of significant changes in weather information. C1.3.2 Other agencies are advised of significant changes in weather information.	**Significant weather:** Surface wind. Thunderstorms and Cumulonimbus clouds. Freezing rain. Moderate / Severe icing. Severe turbulence. Severe mountain waves. Low visibility. Low level wind shear.	**MATS Part 1 Section 2** Windshear ***Underpinning knowledge*** Effects of weather on flight operations. Meteorology:- Wind, cloud, thunderstorms, microbursts, icing, line squalls.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.1 OBTAIN AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.1.1 Aeronautical information is obtained before taking over watch. C2.1.2 Aeronautical information is monitored during the watch. C2.1.3 Pilots' requests for information are promptly and appropriately responded to. C2.1.4 Required information is obtained promptly from appropriate agencies.	**Sources of information:** AIP, NOTAMS, Local notices. Airspace restrictions. Visual observation.	**AIP** Content and use of AIP, NOTAM. Aeronautical information circulars. Restricted, prohibited airspace. Danger areas. Aeronautical charts

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.2 INTERPRET AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.2.1 Significant changes are recognised. C2.2.2 The relevance of aeronautical information to individual flights or agencies is established.	**Operating conditions:** Normal conditions. Unserviceable navigation aids. Unserviceable approach and landing aids. Reduction of safety services cover. Surface contamination.	***Underpinning knowledge*** Communication and navigation systems, uses and limitations. Conditions affecting operations at aerodromes. Airspace restrictions.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.3 DISSEMINATE AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.3.1 Aircraft are advised of significant changes in aeronautical information. C2.3.2 Other agencies are advised of significant changes in aeronautical information.	**Operating conditions:** Normal conditions. Unserviceable navigation aids. Unserviceable approach and landing aids. Reduction of safety services cover. Surface contamination.	**Manual of Air Traffic Services Part 1 (General)** Flight information service. **Manual of Air Traffic Services Part 1 (General)** Essential aerodrome information. ***Underpinning knowledge*** Communication and navigation systems, uses and limitations. Conditions affecting operations at aerodromes. Airspace restrictions.

Topic D1 SELECT THE RUNWAY IN USE AND APPROPRIATE VISUAL AIDS
Sub-Topic D1.1 SELECT THE RUNWAY IN USE

Performance Objectives	Conditions	Essential Knowledge
D1.1.1 The prevailing weather conditions are evaluated. D1.1.2 The availability of essential aids is evaluated. D1.1.3 Surface conditions are evaluated. D1.1.4 Operational requirements of aircraft are evaluated. D1.1.5 The runway selected is the most suitable.	**Operating conditions:** Day. Night. Low Visibility.	**Manual of Air Traffic Services Part 1 (General)** Landing direction and runway in use. Runway changes. ***Underpinning knowledge*** Take off and landing performance of aircraft. Approach and landing aids use and limitations.

Topic D1 SELECT THE RUNWAY IN USE AND APPROPRIATE VISUAL AIDS
Sub-Topic D1.2 OPERATE AERODROME LIGHTING

Performance Objectives	Conditions	Essential Knowledge
D1.2.1 The prevailing weather conditions are evaluated. D1.2.2 The serviceability of lighting aids is evaluated. D1.2.3 Lighting is operated in accordance with laid down procedures. D1.2.4 Failure or irregular operation of aerodrome lighting is notified in accordance with laid down procedures.	**Operating conditions:** Day. Night. Low Visibility.	**Manual of Air Traffic Services Part 1 (General)** Aerodrome lighting aids:- Lighting systems in use at UK aerodromes. Operation of lighting systems and intensity controls. Periods of display. **Local Procedures** Notification of unserviceabilities.

Topic G1 MANAGE FLIGHTS OPERATING IN THE VICINITY OF THE AERODROME
Sub-Topic G1.1 MANAGE FLIGHTS OPERATING UNDER THE VISUAL FLIGHT RULES

Performance Objectives	Conditions	Essential Knowledge
G1.1.1 Flight data is assessed for actual and potential traffic conflictions. G1.1.2 Traffic is visually monitored to detect actual and potential conflictions. G1.1.3 The runway is safeguarded to ensure the safety of aircraft taking off and landing. G1.1.4 Traffic information is passed to enable pilots to position themselves in the traffic pattern. G1.1.5 Immediate action is taken to restore wake turbulence spacing when it has been eroded. G1.1.6 ATC procedures are adjusted to allow for the effects of weather on flight operations G1.1.7 ATC procedures are adjusted to allow for the effect of degradation of essential communication services on flight operations.	**Airspace category :** C,D,E and G. **Types of separation:** Departing aircraft. Reduced separation in the vicinity of aerodromes. **Types of Flight:** Fixed and Rotary Wing. VFR. Arriving, Departing, Local. **Wake Turbulence Categories:** Light, Medium, Heavy, Small. **Weather conditions:** VMC Suspension of VFR operations.	**Rules of the Air** General flight Rules - rules for avoiding aerial collisions, right hand traffic rule, choice of IFR or VFR Visual Flight Rules Instrument Flight Rules Aerodrome traffic rules. Aerodrome signals and markings. **Manual of Air Traffic Services Part 1 (General)** Aerodrome control:- Provision of services. Responsibilities. Airspace classification. Effect of weather on operations. Essential aerodrome information. Control of surface traffic. Taxying aircraft. Awaiting take off. Line up clearance. Take off clearance. Critical positions in the traffic circuit. Arriving aircraft. Exemptions from separation minima in the traffic circuit. Missed approach restrictions. Closure or restricted operation of aerodromes. Work on the manoeuvring area. Aerodrome inspections.

Performance Objectives	Conditions	Essential Knowledge
		Manual of Air Traffic Services Part 1 (General) Longitudinal separation - departing aircraft. Vortex wake spacing requirements. Reduced separation - in the vicinity of aerodromes, search and rescue aircraft, loss of separation. Essential traffic information Altimeter setting and vertical reference **Manual of Air Traffic Services Part 1 (General)** All applicable current instructions. ***Underpinning knowledge*** Aircraft performance. Effects of weather on flight operations. Use and limitations of navigation and communications aids.

Topic G1 MANAGE FLIGHTS OPERATING IN THE VICINITY OF THE AERODROME
Sub-Topic G1.2 MANAGE FLIGHTS OPERATING UNDER THE INSTRUMENT FLIGHT RULES

Performance Objectives	Conditions	Essential Knowledge
G1.2.1 Flight data is assessed for actual and potential traffic conflictions. G1.2.2 A control strategy is developed to achieve separation with the least average delay to flights. G1.2.3 The runway is safeguarded to ensure the safety of aircraft taking off and landing. G1.2.4 Departing aircraft separation is applied. G1.2.5 The applied separation is the most appropriate taking into account safety and expedition. G1.2.6 Traffic is visually monitored to detect actual and potential conflictions. G1.2.7 Traffic information is passed to enable pilots operating with visual reference to position themselves in the traffic pattern. G1.2.8 Immediate action is taken to restore separation when it has been eroded. G1.2.9 Immediate action is taken to restore wake turbulence spacing when it has been eroded. G1.2.10 Appropriate essential traffic information is passed without delay.	**Airspace category :** C,D,E and G **Types of separation:** Departing aircraft. Reduced separation in the vicinity of aerodromes. **Types of Flight:** Fixed and Rotary Wing. IFR, SpVFR. Arriving, Departing, Local. **Wake Turbulence Categories:** Light, Medium, Heavy, Small. **Weather conditions:** VMC, IMC and Low Visibility.	**Rules of the Air** General Flight Rules - rules for avoiding aerial collisions, right hand traffic rule, choice of IFR or VFR Visual Flight Rules Instrument Flight Rules Aerodrome traffic rules. Aerodrome signals and markings. **Manual of Air Traffic Services Part 1 (General)** Provision of services. Responsibilities. Airspace classification. Effect of weather on operations. Essential aerodrome information. Control of surface traffic. Taxying aircraft. Awaiting take off. Line up clearance. Take off clearance. Critical positions in the traffic circuit. Arriving aircraft. Exemptions from separation minima in the traffic circuit. Missed approach restrictions. Closure or restricted operation of aerodromes. Work on the manoeuvring area. Aerodrome inspections.

Performance Objectives	Conditions	Essential Knowledge
G1.2.11 ATC procedures are adjusted to allow for the effects of weather on flight operations. G1.2.12 ATC procedures are adjusted to allow for the effect of degradation of essential navigational and communication services on flight operations.		**Manual of Air Traffic Services Part 1 (General)** Separation standards:- Longitudinal separation - departing aircraft. Vortex wake spacing requirements. Reduced separation - in the vicinity of aerodromes, search and rescue aircraft, loss of separation. Essential traffic information Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (General)** All applicable current instructions. ***Underpinning knowledge*** Aircraft performance. Effects of weather on flight operations. Use and limitations of navigation and communications aids.

Topic G2 MANAGE AERODROME SURFACE MOVEMENTS
Sub-Topic G2.1 CONTROL AIRCRAFT ON THE MANOEUVRING AREA AND APRONS AND VEHICLES AND PERSONNEL ON THE MANOEUVRING AREA

Performance Objectives	Conditions	Essential Knowledge
G2.1.1 Aerodrome surface is monitored for potential conflictions. G2.1.2 Clearances issued achieve the most expeditious flow consistent with safety. G2.1.3 The condition of the airfield surface is evaluated when permitting movements. G2.1.4 Flow management requirements are met. G2.1.5 Requests for work on the airfield are evaluated and appropriately met.	**Surface movements:** Aircraft. Vehicles. Personnel. **Monitoring of surface movements:** Visually. **Communication by:** Radiotelephony. Light signals.	**Rules of the Air** General Flight Rules - choice of IFR or VFR Aerodrome traffic rules. Aerodrome signals and markings. **Manual of Air Traffic Services Part 1 (General)** Aerodrome control:- Provision of services. Responsibilities. Airspace classification. Effect of weather on operations. Essential aerodrome information. Control of surface traffic. Taxying aircraft. Work on the manoeuvring area Aerodrome inspections. ***Underpinning knowledge*** Flow management procedures Aircraft limitations on ground manoeuvring.

Topic G8 EFFECT LIAISON WITH OTHER AGENCIES
Sub-Topic G8.1 LIAISE WITH NON ATC AGENCIES

Performance Objectives	Conditions	Essential Knowledge
G8.1.1 The sources of requests are verified. G8.1.2 Requests are evaluated for their effect on aerodrome operations. G8.1.3 Information on the status of the aerodrome and its associated aids is disseminated in accordance with local procedures.	**Non ATC Agencies:** Aerodrome Authority. Customs and Immigration. Police.	**Manual of Air Traffic Services Part 1 (General)** Aerodrome emergency services Local procedures.

Topic G8 EFFECT LIAISON WITH OTHER AGENCIES
Sub-Topic G8.2 LIAISE WITH THE SAFETY SERVICES

Performance Objectives	Conditions	Essential Knowledge
G8.2.1 The need for safety services call-out is identified in accordance with laid down criteria. G8.2.2 Call-outs are initiated in accordance with local procedures. G8.2.3 The category of call-out initiated is appropriate to the circumstances. G8.2.4 The sources of requests for off airfield attendance are verified. G8.2.5 Requests for off airfield attendance are evaluated for their effect on aerodrome operations. G8.2.6 Off airfield attendance is permitted in accordance with local procedures.	**Safety services:** Aerodrome fire and rescue services. Civil fire, ambulance and police.	**Manual of Air Traffic Services Part 1 (General)** Aerodrome fire service. **Manual of Air Traffic Services Part 1 (General)** Aerodrome emergency services. **Manual of Air Traffic Services Part 1 (General)** Aerodrome rescue and fire fighting. Heliport fire fighting categories.

Topic G9 HANDLE DIVERSIONS
Sub-Topic G9.1 HANDLE DIVERSIONS

Performance Objectives	Conditions	Essential Knowledge
G9.1.1 Information necessary to facilitate the diversion is obtained. G9.1.2 Other relevant agencies are informed of the diversion. G9.1.3 Flight plan data is amended. G9.1.4 Diversion messages are issued when appropriate.	**Types of diversion:** Pilot initiated. Company initiated. ATC initiated.	**Manual of Air Traffic Services Part 1 (General)** -Diversion procedures. **Manual of Air Traffic Services Part 1 (General)** - Aerodrome actions **Manual of Air Traffic Services Part 1 (General) -** ATCC actions. ***Underpinning knowledge*** Background on weather minima. Background on fuel management.

Topic G10 WORK AS A TEAM MEMBER ON THE AERODROME CONTROL OPERATIONAL POSITION
Sub-Topic G10.1 ACCEPT RESPONSIBILITY FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G10.1.1 Compliance with licensing and medical requirements is confirmed. G10.1.2 Pre task briefing is carried out. G10.1.3 The current and projected traffic situation is obtained from the duty controller. G10.1.4 Current and projected workload is evaluated to determine whether the resources available are appropriate. G10.1.5 Action is taken to ensure resources are adequate for the task.	Initial arrival for duty period. Return following fatigue break.	**Aeronautical information circulars** Effects of drugs, medicines, fatigue, stress, medical conditions. **Air Navigation Order** Licensing requirements. Certification of competence **Manual of Air Traffic Services Part 1 (General)** Actions before taking over an operational position.

Topic G10 WORK AS A TEAM MEMBER ON THE AERODROME CONTROL OPERATIONAL POSITION
Sub-Topic G10.2 MONITOR PERFORMANCE WHILST RESPONSIBLE FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G10.2.1 Assistance is called for in sufficient time to ensure personal capabilities are not exceeded. G10.2.2 Assistance provided to other team members is appropriate to the circumstances. G10.2.3 Current and projected workload is evaluated to determine whether the resources available are appropriate. G10.2.4 Action is taken to ensure resources are adequate for the task. G10.2.5 Rest/fatigue break requirements are complied with. G10.2.6 Concentration is maintained at an appropriate level for the task. G10.2.7 Indications of reduced or inadequate performance are acted upon in an appropriate manner.	**Traffic flow:** Light, Medium, Heavy.	**CAP 670 Part D Annex C** Scheme for regulation of the hours of civil ATCOs in the UK ***Underpinning knowledge*** Indications of stress Indications of fatigue. Workload sharing.

Topic G10 WORK AS A TEAM MEMBER ON THE AERODROME CONTROL OPERATIONAL POSITION
Sub-Topic G10.3 TRANSFER RESPONSIBILITY FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G10.3.1 The current traffic situation is clearly communicated to the relieving controller. G10.3.2 The current and projected operating conditions are clearly communicated to the relieving controller. G10.3.3 Current and projected workload is evaluated to determine whether the resources available are appropriate. G10.3.4 Action is taken to ensure resources are adequate for the task.	Running handover.	**CAP 670 Part D Annex C** Scheme for regulation of the hours of civil ATCOs in the UK **Manual of Air Traffic Services Part 1 (General)** Actions when handing over an operational position

Topic H1 MANAGE DEVELOPED EMERGENCIES FROM THE AERODROME CONTROL UNIT
Sub-Topic H1.1 MANAGE RADIO FAILURES

Performance Objectives	Conditions	Essential Knowledge
H1.1.1 Aircraft radio failure is recognised from available information. H1.1.2 Standard radio failure procedures are implemented.	**Types of failure:** Ground radio. Partial and complete aircraft radio. **Environment:** Radar and non-radar environment.	**Manual of Air Traffic Services Part 1 (General)** Pilot actions in the event of loss of communications. ATC procedures in the event of loss of communications. **Manual of Air Traffic Services Part 1 (General) -** Reporting actions. **Manual of Air Traffic Services Part 1 (General) -** Availability of supplementary flight plan information.

Topic H1 MANAGE DEVELOPED EMERGENCIES FROM THE AERODROME CONTROL UNIT
Sub-Topic H1.2 MANAGE SITUATIONS ARISING FROM UNLAWFUL INTERFERENCE

Performance Objectives	Conditions	Essential Knowledge
H1.2.1 The possibility of unlawful interference is recognised from available information. H1.2.2 Standard procedures are adhered to when dealing with aircraft subject to unlawful interference.	Aircraft intending to land. Aircraft on ground.	**Manual of Air Traffic Services Part 1 (General) -** Hi-jacking and the unlawful use of aircraft. **Manual of Air Traffic Services Part 1 (General) -** Availability of supplementary flight plan information. **Manual of Air Traffic Services Part 1 (General) -** Reporting action.

Topic H1 MANAGE DEVELOPED EMERGENCIES FROM THE AERODROME CONTROL UNIT
Sub-Topic H1.3 MANAGE AIRCRAFT EMERGENCIES

Performance Objectives	Conditions	Essential Knowledge
H1.3.1 The possibility of an emergency situation existing is recognised from available information. H1.3.2 The nature of the emergency is determined. H1.3.3 The level of priority over other traffic is evaluated	**Types of emergency:** Engine. Airframe. Fuel based. Medical.	**Manual of Air Traffic Services Part 1 (General)** Aircraft emergencies. Aircraft lost. **Manual of Air Traffic Services Part 1 (General)** Reporting action **CAP 382** MOR scheme ***Underpinning knowledge*** Aircraft performance and performance limitations.

Topic H1 MANAGE DEVELOPED EMERGENCIES FROM THE AERODROME CONTROL UNIT
Sub-Topic H1.4 PROVIDE ALERTING SERVICE

Performance Objectives	Conditions	Essential Knowledge
H1.4.1 Available information is evaluated to determine the phase of emergency existing. H1.4.2 Actions follow laid down procedures appropriate to the phase of the emergency.	**Phases of emergency:** Uncertainty. Alert. Distress.	**Manual of Air Traffic Services Part 1 (General)** Alerting service. Overdue aircraft. **Manual of Air Traffic Services art 1 (General)** Reporting action.

Topic H2 MANAGE DOMESTIC CONTINGENCIES IN AN AERODROME VISUAL CONTROL ROOM
Sub-Topic H2.1 SAFELY EVACUATE THE CONTROL ROOM

Performance Objectives	Conditions	Essential Knowledge
H2.1.1 Available information is evaluated to determine the need to evacuate the control room. H2.1.2 Traffic is disposed of in accordance with laid down procedures. H2.1.3 Evacuation is conducted in accordance with laid down procedures.	**Reasons for evacuation:** Fire and Bomb Warnings.	**Local procedures** Evacuation of control room.

2.3 Rating Requirements for ATCOs – Aerodrome Control Instrument Rating

KEY ROLES AND TOPICS FOR AERODROME CONTROL INSTRUMENT RATING (Tower Control Endorsement)

KEY ROLES	TOPICS	
KEY ROLE A COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES	A1 A2	CHECK AND OPERATE COMMUNICATIONS EQUIPMENT COMMUNICATE FROM A VISUAL CONTROL ROOM
KEY ROLE B ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY	B1 B2	CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR AERODROME CONTROL
KEY ROLE C CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS	C1 C2	OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
KEY ROLE D SELECT THE DIRECTION OF LANDING AND TAKE OFF	D1	SELECT THE RUNWAY IN USE AND APPROPRIATE VISUAL AIDS
KEY ROLE G MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC	G1 G2 G3 G8 G9 G10	MANAGE FLIGHTS OPERATING IN THE VICINITY OF THE AERODROME MANAGE AERODROME SURFACE MOVEMENTS CO-ORDINATE WITH OTHER ATC OPS POSITIONS EFFECT LIAISON WITH OTHER AGENCIES HANDLE DIVERSIONS WORK AS A TEAM MEMBER ON THE AERODROME CONTROL OPERATIONAL POSITION
KEY ROLE H MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES	H1 H2	MANAGE DEVELOPED EMERGENCIES FROM THE AERODROME CONTROL UNIT MANAGE DOMESTIC CONTINGENCIES IN AN AERODROME VISUAL CONTROL ROOM

TOPICS AND SUB-TOPICS FOR AERODROME CONTROL INSTRUMENT RATING (Tower Control Endorsement)

KEY ROLE A	**COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES**
TOPICS	**SUB-TOPICS**
A1 Check and operate communications equipment	A1.1 Establish and monitor the communications equipment serviceability A1.2 Use the communications equipment
A2 Communicate from a visual control room	A2.1 Use standard phraseology applicable to aerodrome control.
KEY ROLE B	**ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY**
TOPICS	**SUB-TOPICS**
B1 Correlate flight data into appropriate proforma for display	B1.1 Obtain flight data information B1.2 Insert flight data into the appropriate proforma
B2 Maintain a representative flight data display for aerodrome control	B2.1 Correlate flight data into a display for aerodrome control B2.2 Update the aerodrome control flight data display
KEY ROLE C	**CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS**
TOPICS	**SUB-TOPICS**
C1 Obtain, interpret and disseminate meteorological information	C1.1 Obtain meteorological information C1.2 Interpret meteorological information C1.3 Disseminate meteorological information
C2 Obtain, interpret and disseminate aeronautical information	C2.1 Obtain aeronautical information C2.2 Interpret aeronautical information C2.3 Disseminate aeronautical information

KEY ROLE D	**SELECT THE DIRECTION OF LANDING AND TAKE OFF**
TOPICS	**SUB-TOPICS**
D1 Select the runway in use and appropriate visual aids	D1.1 Select the runway in use D1.2 Operate aerodrome lighting
KEY ROLE G	**MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC**
TOPICS	**SUB-TOPICS**
G1 Manage flights operating in the vicinity of the aerodrome	G1.1 Manage flights operating under the visual flight rules G1.2 Manage flights operating under the instrument flight rules
G2 Manage aerodrome surface movements	G2.1 Control aircraft on the manoeuvring area and aprons and vehicles and personnel on the manoeuvring area
G3 Co-ordinate with other ATC operational positions	G3.1 Co-ordinate with approach control operational positions
G8 Effect liaison with other agencies	G8.1 Liaise with non ATC agencies G8.2 Liaise with the safety services
G9 Handle diversions	G9.1 Handle diversions
G10 Work as a team member on the aerodrome control operational position	G10.1 Accept responsibility for the operational position G10.2 Monitor performance whilst responsible for the operational position G10.3 Transfer responsibility for the operational position

KEY ROLE H	**MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES**
TOPICS	**SUB-TOPICS**
H1 Manage developed emergencies from the aerodrome control unit	H1.1 Manage radio failures H1.2 Manage situations arising from unlawful interference H1.3 Manage Aircraft Emergencies H1.4 Provide Alerting Service
H2 Manage domestic contingencies in an aerodrome visual control room	H2.1 Safely evacuate the control room

KEY ROLES AND TOPICS FOR AERODROME CONTROL INSTRUMENT RATING (Ground Movement Control Endorsement)

KEY ROLES	TOPICS
KEY ROLE A COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES	A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT A2 COMMUNICATE FROM A VISUAL CONTROL ROOM
KEY ROLE B ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY	B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY B2 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR AERODROME CONTROL
KEY ROLE C CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS	C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
KEY ROLE G MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC	G2 MANAGE AERODROME SURFACE MOVEMENTS G3 CO-ORDINATE WITH OTHER ATC OPERATIONAL POSITIONS G8 EFFECT LIAISON WITH OTHER AGENCIES G10 WORK AS A TEAM MEMBER ON THE AERODROME CONTROL OPERATIONAL POSITION
KEY ROLE H MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES	H1 MANAGE DEVELOPED EMERGENCIES FROM THE AERODROME CONTROL UNIT H2 MANAGE DOMESTIC CONTINGENCIES IN AN AERODROME CONTROL ROOM

TOPICS AND SUB-TOPICS FOR AERODROME CONTROL INSTRUMENT RATING (Ground Movement Control Endorsement)

KEY ROLE A	**COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES**
TOPICS	**SUB-TOPICS**
A1 Check and operate communications equipment	A1.1 Establish and monitor the communications equipment serviceability A1.2 Use the communications equipment
A2 Communicate from a visual control room	A2.1 Use standard phraseology applicable to aerodrome control.
KEY ROLE B	**ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY**
TOPICS	**SUB-TOPICS**
B1 Correlate flight data into appropriate proforma for display	B1.1 Obtain flight data information B1.2 Insert flight data into the appropriate proforma
B2 Maintain a representative flight data display for aerodrome control	B2.1 Correlate flight data into a display for aerodrome control B2.2 Update the aerodrome control flight data display
KEY ROLE C	**CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS**
TOPICS	**SUB-TOPICS**
C1 Obtain, interpret and disseminate meteorological information	C1.1 Obtain meteorological information C1.2 Interpret meteorological information C1.3 Disseminate meteorological information
C2 Obtain, interpret and disseminate aeronautical information	C2.1 Obtain aeronautical information C2.2 Interpret aeronautical information C2.3 Disseminate aeronautical information

KEY ROLE D	**SELECT THE DIRECTION OF LANDING AND TAKE OFF**
TOPICS	**SUB-TOPICS**
D1 Select the runway in use and appropriate visual aids	D1.2 Operate aerodrome lighting
KEY ROLE G	**MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC**
TOPICS	**SUB-TOPICS**
G2 Manage aerodrome surface movements	G2.1 Control aircraft on the manoeuvring area and aprons and vehicles and personnel on the manoeuvring area.
G8 Effect liaison with other agencies	G8.1 Liaise with non ATC agencies G8.2 Liaise with the safety services
G10 Work as a team member for the aerodrome control operational position	G10.1 Accept responsibility for the operational position G10.2 Monitor performance whilst responsible for the operational position G10.3 Transfer responsibility for the operational position
KEY ROLE H	**MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES**
TOPICS	**SUB-TOPICS**
H1 Manage developed emergencies from the aerodrome control unit	H1.1 Manage radio failures H1.2 Manage situations arising from unlawful interference H1.3 Manage Aircraft Emergencies H1.4 Provide Alerting Service
H2 Manage domestic contingencies in an aerodrome control room.	H2.1 Safely evacuate the control room

KEY ROLES AND TOPICS FOR AERODROME CONTROL INSTRUMENT RATING (Air Control Endorsement)

KEY ROLES	TOPICS	
KEY ROLE A COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES	A1 A2	CHECK AND OPERATE COMMUNICATIONS EQUIPMENT COMMUNICATE FROM A VISUAL CONTROL ROOM
KEY ROLE B ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY	B1 B2	CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR AERODROME CONTROL
KEY ROLE C CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS	C1 C2	OBTAIN INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
KEY ROLE D SELECT THE DIRECTION OF LANDING AND TAKE OFF	D1	SELECT THE RUNWAY IN USE AND APPROPRIATE VISUAL AIDS
KEY ROLE G MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC	G1 G3 G8 G9 G10	MANAGE FLIGHTS OPERATING IN THE VICINITY OF THE AERODROME CO-ORDINATE WITH OTHER ATC OPERATIONAL POSITIONS EFFECT LIAISON WITH OTHER AGENCIES HANDLE DIVERSIONS WORK AS A TEAM MEMBER ON THE AERODROME CONTROL OPERATIONAL POSITION
KEY ROLE H MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES	H1 H2	MANAGE DEVELOPED EMERGENCIES FROM THE AERODROME CONTROL UNIT MANAGE DOMESTIC CONTINGENCIES IN THE AERODROME CONTROL ROOM

TOPICS AND SUB-TOPICS FOR AERODROME CONTROL INSTRUMENT RATING (Air Control Endorsement)

KEY ROLE A	**COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES**
TOPICS	**SUB-TOPICS**
A1 Check and operate communications equipment	A1.1 Establish and monitor the communications equipment serviceability A1.2 Use the communications equipment
A2 Communicate from a visual control room	A2.1 Use standard phraseology applicable to aerodrome control.
KEY ROLE B	**ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY**
TOPICS	**SUB-TOPICS**
B1 Correlate flight data into appropriate proforma for display	B1.1 Obtain flight data information B1.2 Insert flight data into the appropriate proforma
B2 Maintain a representative flight data display for aerodrome control	B2.1 Correlate flight data into a display for aerodrome control B2.2 Update the aerodrome control flight data display
KEY ROLE C	**CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS**
TOPICS	**SUB-TOPICS**
C1 Obtain, interpret and disseminate meteorological information	C1.1 Obtain meteorological information C1.2 Interpret meteorological information C1.3 Disseminate meteorological information
C2 Obtain, interpret and disseminate aeronautical information	C2.1 Obtain aeronautical information C2.2 Interpret aeronautical information C2.3 Disseminate aeronautical information

KEY ROLE D	**SELECT THE DIRECTION OF LANDING AND TAKE OFF**
TOPICS	**SUB-TOPICS**
D1 Select the runway in use and appropriate visual aids	D1.1 Select the runway in use D1.2 Operate aerodrome lighting
KEY ROLE G	**MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC**
TOPICS	**SUB-TOPICS**
G1 Manage flights operating in the vicinity of the aerodrome	G1.1 Manage flights operating under the visual flight rules G1.2 Manage flights operating under the instrument flight rules
G3 Co-ordinate with other ATC operational positions	G3.1 Co-ordinate with approach control operational positions
G8 Effect liaison with other agencies	G8.1 Liaise with non ATC agencies G8.2 Liaise with the safety services
G9 Handle diversions	G9.1 Handle diversions
G10 Work as a team member for the aerodrome control operational position	G10.1 Accept responsibility for the operational position G10.2 Monitor performance whilst responsible for the operational position G10.3 Transfer responsibility for the operational position
KEY ROLE H	**MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES**
TOPICS	**SUB-TOPICS**
H1 Manage developed emergencies from the aerodrome control unit	H1.1 Manage radio failures H1.2 Manage situations arising from unlawful interference H1.3 Manage Aircraft Emergencies H1.4 Provide Alerting Service

KEY ROLES AND TOPICS FOR AERODROME CONTROL RATING (Aerodrome Radar Control Endorsement)

KEY ROLES	TOPICS
KEY ROLE E SET UP AND USE SURVEILLANCE RADAR EQUIPMENT	E4 SELECT AND SET UP AERODROME CONTROL RADAR E5 USE AERODROME CONTROL RADAR
KEY ROLE G MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC	G4 MANAGE FLIGHTS OPERATING IN THE VICINITY OF THE AERODROME WITH THE AID OF AERODROME CONTROL RADAR

TOPICS AND SUB-TOPICS FOR AERODROME CONTROL RATING (Aerodrome Radar Control Endorsement)

KEY ROLE E	**SET UP AND USE SURVEILLANCE RADAR EQUIPMENT**
TOPICS	**SUB-TOPICS**
E4 Select and set up aerodrome control radar	E4.1 Select and set up aerodrome control radar
E5 Use aerodrome control radar	E5.1 Use aerodrome control radar
KEY ROLE G	**MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC**
TOPICS	**SUB-TOPICS**
G4 Manage flights operating in the vicinity of the aerodrome with the aid of aerodrome control radar	G4.1 Manage flights operating under the visual flight rules G4.2 Manage flights operating under the instrument flight rules

KEY ROLES AND TOPICS FOR AERODROME CONTROL RATING (Ground Movement Surveillance Control Endorsement)

KEY ROLES	TOPICS
KEY ROLE E SET UP AND USE SURVEILLANCE RADAR EQUIPMENT	E6 SELECT AND SET UP SURFACE MOVEMENT RADAR E7 USE SURFACE MOVEMENT RADAR
KEY ROLE G MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC	G5 OPERATE SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEMS G6 MANAGE AERODROME SURFACE MOVEMENTS IN LOW VISIBILITY WITH THE AID OF SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEMS G7 MANAGE AERODROME SURFACE MOVEMENTS WITH THE AID OF SURFACE MOVEMENT RADAR

TOPICS AND SUB-TOPICS FOR AERODROME CONTROL RATING (Ground Movement Surveillance Control Endorsement)

KEY ROLE E		**SET UP AND USE SURVEILLANCE RADAR EQUIPMENT**	
TOPICS		**SUB-TOPICS**	
E6	Select and set up surface movement radar	E6.1	Select and set up surface movement radar
E7	Use surface movement radar	E7.1	Use surface movement radar
KEY ROLE G		**MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC**	
TOPICS		**SUB-TOPICS**	
G5	Operate surface movement guidance and control systems.	G5.1	Operate surface movement guidance and control systems
G6	Manage aerodrome surface movements in low visibility with the aid of surface movement guidance and control systems	G6.1	Control aircraft on the manoeuvring area and aprons and aircraft and personnel on the manoeuvring area in low visibility
G7	Manage aerodrome surface movements with the aid of surface movement radar	G7.1	Control aircraft on the manoeuvring area and aprons and vehicles and personnel on the manoeuvring area

Topic A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT
Sub-Topic A1.1 ESTABLISH AND MONITOR THE COMMUNICATIONS EQUIPMENT SERVICEABILITY

Performance Objectives	Conditions	Essential Knowledge
A1.1.1 Visual and/or aural indications are checked whilst making and receiving transmissions for indications of normal operation. A1.1.2 Documentation confirming equipment status is checked. A1.1.3 Malfunctions and defects are recorded and reported to the appropriate authority according to standing procedures.	**Procedures**: Unit specific.	**Local procedures** Equipment visual and aural indications. Watch log entries. Local standing procedures for reporting equipment faults. ***Underpinning knowledge*** Deriving information from NOTAMS.

Topic A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT
Sub-Topic A1.2 USE THE COMMUNICATIONS EQUIPMENT

Performance Objectives	Conditions	Essential Knowledge
A1.2.1 The readability of transmissions is assessed. A1.2.2 Standard speech technique is adhered to. A1.2.3 The appropriate frequency is selected and used. A1.2.4 Transmit and intercom switches are used in accordance with standard procedures. A1.2.5 The appropriate telephone is used. A1.2.6 Ancillary telephone equipment is used in accordance with standard procedures.	**Communication methods:** Radiotelephony, Telephone.	**Manual of Air Traffic Services Part 1 (Gen)** Communications technique Speech technique. Test transmissions.

Topic A2 COMMUNICATE FROM A VISUAL CONTROL ROOM
Sub-Topic A2.1 USE STANDARD PHRASEOLOGY APPLICABLE TO AERODROME CONTROL

Performance Objectives	Conditions	Essential Knowledge
A2.1.1 Standard phraseology is employed wherever possible in communications. A2.1.2 Composition of messages is concise and unambiguous. A2.1.3 Station identity is used correctly. A2.1.4 Acknowledgements and readbacks are obtained and verified when required. A2.1.5 Abbreviated phraseology is used when appropriate.	**Communication by:** Radiotelephone, telephone. **Message Types:** Clearances, instructions, information.	**Manual of Air Traffic Services Part 1 (Gen)** Standard aerodrome control phraseology Standard speech abbreviations. Radiotelephony callsigns. Communication with aircraft. Transfer of communications. Transmission of company messages.

Topic B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY
Sub-Topic B1.1 OBTAIN FLIGHT DATA INFORMATION

Performance Objectives	Conditions	Essential Knowledge
B1.1.1 Flight data information is extracted from all appropriate sources. B1.1.2 Relevant flight data is included at the earliest opportunity. B1.1.3 Flight data is checked to ensure completeness. B1.1.4 Any significant deficiency in flight data is rectified.	**Methods of Display:** Flight progress strips. Electronic data displays.	**Doc. 4444 Appendix 2** Content of full and abbreviated flight plans ATS service messages. **Doc. 7910** ICAO location indicators **Doc.8585** ICAO abbreviations **Manual of Air Traffic Services Part 1 (Gen)** Filing of flight plans Non standard routes Repetitive flight plan Exemptions and non standard flights **Local procedures** Flight plan processing

Topic B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY
Sub-Topic B1.2 INSERT FLIGHT DATA INTO THE APPROPRIATE PROFORMA

Performance Objectives	Conditions	Essential Knowledge
B1.2.1 Strip marking is legible and conforms to standard procedures. B1.2.2 Correct message entry formats are used. B1.2.3 Relevant flight data is included at the earliest opportunity.	**Methods of Display:** Flight progress strips. Electronic data displays.	**Doc. 7910** ICAO location indicators **Doc. 8585** ICAO abbreviations **Local procedures** Conventional strip marking

Topic B2 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR AERODROME CONTROL
Sub-Topic B2.1 CORRELATE FLIGHT DATA INTO A DISPLAY FOR AERODROME CONTROL

Performance Objectives	Conditions	Essential Knowledge
B2.1.1 All relevant traffic is included on the display. B2.1.2 Flight progress strips are organised in a manner that reflects the traffic situation in accordance with laid down procedures. B2.1.3 Electronic flight data displays are organised in accordance with laid down procedures.	**Methods of display:** Flight progress strip displays. Electronic flight data displays.	**Local procedures** Layout and use of flight progress strips. Layout and use of electronic flight data displays.

Topic B2 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR AERODROME CONTROL
Sub-Topic B2.2 UPDATE THE AERODROME CONTROL FLIGHT DATA DISPLAY

Performance Objectives	Conditions	Essential Knowledge
B2.2.1 Information is extracted from all relevant sources. B2.2.2 The display is updated using information received. B2.2.3 Clearances and instructions passed to aircraft and other agencies are recorded. B2.2.4 Co-ordination agreed with other agencies is recorded. B2.2.5 The integrity of EDD performance and data is monitored.	**Sources of information:** Pilot reports. Information from other controllers. Information from other agencies. Computer derived information. **Methods of display:** Flight progress strips. Electronic data displays.	Aircraft performance. **Local procedures** Report formats. EDD display parameters.

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.1 OBTAIN METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.1.1 Current and forecast weather information is obtained before taking over watch. C1.1.2 Current and forecast weather information is monitored during the watch. C1.1.3 Weather information and reports from pilots are recorded.	**Types of briefing:** Self and Met office briefing. **Types of report:** Routine and special reports. Met Warnings. Reports from pilots.	**Manual of Air Traffic Services Part 1 (Gen)** Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (Gen)** Windshear. **Manual of Air Traffic Services Part 1 (Gen)** Meteorological services:- Briefing of controllers. Explanation of terms. Supply of information. Aerodrome meteorological reports (Routine) Aerodrome meteorological reports (Special) Coded aerodrome weather reports. SIGMET. Forecasts ***Underpinning knowledge*** Meteorology:- Wind, cloud, thunderstorms, microbursts, icing, line squalls. Pilot in flight reports (PIREPS) Low level charts. Significant weather charts. Aerodrome warnings

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.2 INTERPRET METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.2.1 Significant weather changes are recognised. C1.2.2 The relevance of meteorological information to individual flights or agencies is established.	**Significant weather:** Surface wind. Thunderstorms and Cumulonimbus clouds. Freezing rain. Moderate / Severe icing. Severe turbulence. Severe mountain waves. Low visibility. Low level wind shear.	**Manual of Air Traffic Services Part 1 (Gen)** Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (Gen)** Windshear. **Manual of Air Traffic Services Part 1 (Gen)** Meteorological services:- Briefing of controllers. Explanation of terms. Supply of information. Aerodrome meteorological reports (Routine) Aerodrome meteorological reports (Special) Coded aerodrome weather reports. SIGMET. Forecasts ***Underpinning knowledge*** Meteorology:- Wind, cloud, thunderstorms, microbursts, icing, line squalls. Pilot in flight reports (PIREPS) Low level charts. Significant weather charts. Aerodrome warnings

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.3 DISSEMINATE METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.3.1 Aircraft are advised of significant changes in weather information. C1.3.2 Other agencies are advised of significant changes in weather information.	**Significant weather:** Surface wind. Thunderstorms and Cumulonimbus clouds. Freezing rain. Moderate / Severe icing. Severe turbulence. Severe mountain waves. Low visibility. Low level wind shear.	**Manual of Air Traffic Services Part 1 (Gen)** Windshear ***Underpinning knowledge*** Effects of weather on flight operations. Meteorology:- Wind, cloud, thunderstorms, microbursts, icing, line squalls.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.1 OBTAIN AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.1.1 Aeronautical information is obtained before taking over watch. C2.1.2 Aeronautical information is monitored during the watch. C2.1.3 Pilots' requests for information are promptly and appropriately responded to. C2.1.4 Required information is obtained promptly from appropriate agencies.	**Sources of information:** AIP, NOTAMS, Local notices. Airspace restrictions. Visual observation.	**AIP** Content and use of AIP, NOTAM. Aeronautical information circulars. Restricted, prohibited airspace. Danger areas. Aeronautical charts

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.2 INTERPRET AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.2.1 Significant changes are recognised. C2.2.2 The relevance of aeronautical information to individual flights or agencies is established.	**Operating conditions:** Normal conditions. Unserviceable navigation aids. Unserviceable approach and landing aids. Reduction of safety services cover. Surface contamination.	***Underpinning knowledge*** Communication and navigation systems, uses and limitations. Conditions affecting operations at aerodromes. Airspace restrictions.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.3 DISSEMINATE AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.3.1 Aircraft are advised of significant changes in aeronautical information. C2.3.2 Other agencies are advised of significant changes in aeronautical information.	**Operating conditions:** Normal conditions. Unserviceable navigation aids. Unserviceable approach and landing aids. Reduction of safety services cover. Surface contamination.	**Manual of Air Traffic Services Part 1 (Gen)** Flight information service. **Manual of Air Traffic Services Part 1 (Gen)** Essential aerodrome information. ***Underpinning knowledge*** Communication and navigation systems, uses and limitations. Conditions affecting operations at aerodromes. Airspace restrictions.

Topic D1 SELECT THE RUNWAY IN USE AND APPROPRIATE VISUAL AIDS
Sub-Topic D1.1 SELECT THE RUNWAY IN USE

Performance Objectives	Conditions	Essential Knowledge
D1.1.1 The prevailing weather conditions are evaluated. D1.1.2 The availability of essential aids is evaluated. D1.1.3 Surface conditions are evaluated. D1.1.4 Operational requirements of aircraft are evaluated. D1.1.5 The runway selected is the most suitable.	**Operating conditions:** Day. Night. Low Visibility.	**Manual of Air Traffic Services Part 1 (Gen)** Landing direction and runway in use. Runway changes. ***Underpinning knowledge*** Take off and landing performance of aircraft. Approach and landing aids use and limitations.

Topic D1 SELECT THE RUNWAY IN USE AND APPROPRIATE VISUAL AIDS
Sub-Topic D1.2 OPERATE AERODROME LIGHTING

Performance Objectives	Conditions	Essential Knowledge
D1.2.1 The prevailing weather conditions are evaluated. D1.2.2 The serviceability of lighting aids is evaluated. D1.2.3 Lighting is operated in accordance with laid down procedures. D1.2.4 Failure or irregular operation of aerodrome lighting is notified in accordance with laid down procedures.	**Operating conditions:** Day. Night. Low Visibility.	**Manual of Air Traffic Services Part 1 (Gen)** Aerodrome lighting aids:- Lighting systems in use at UK aerodromes. Operation of lighting systems and intensity controls. Periods of display. **Local Procedures** Notification of unserviceabilities.

Topic E4 SELECT AND SET UP AERODROME CONTROL RADAR
Sub-Topic E4.1 SELECT AND SET UP AERODROME CONTROL RADAR

Performance Objectives	Conditions	Essential Knowledge
E4.1.1 Appropriate aerodrome control radar equipment is selected. E4.1.2 Controls are adjusted to provide best available performance. E4.1.3 Accuracy of aerodrome radar information is checked against laid down criteria. E4.1.4 Deficiencies are notified in accordance with local procedures.	**Operating conditions:** Day. Night. Low visibility.	**Manual of Air Traffic Services Part 1 (Gen)** Aerodrome traffic monitor. ***Underpinning knowledge*** ATM principles of operation. Limitations of ATM Processing and display of ATM data.

Topic E5 USE AERODROME CONTROL RADAR
Sub-Topic E5.1 USE AERODROME CONTROL RADAR

Performance Objectives	Conditions	Essential Knowledge
E5.1.1 Displayed information is accurately correlated with known traffic. E5.1.2 Action is taken to establish the identity of significant unknown returns. E5.1.3 Tracks and speeds are accurately assessed using displayed information. E5.1.4 Aircraft are informed, where necessary, of their position and other traffic. E5.1.5 Navigational assistance is provided in accordance with laid down procedures	**Traffic speeds:** Low and high speed traffic.	**Manual of Air Traffic Services Part 1 (Gen)** Aerodrome traffic monitor ***Underpinning knowledge*** Processing and display of ATM data. Ground / Air Speed. Effect of wind. Effect of weather

Topic E6 SELECT AND SET UP SURFACE MOVEMENT RADAR
Sub-Topic E6.1 SELECT AND SET UP SURFACE MOVEMENT RADAR

Performance Objectives	Conditions	Essential Knowledge
E6.1.1 Appropriate surface movement radar equipment is selected. E6.1.2 Controls are adjusted to provide best available performance. E6.1.3 Accuracy of surface movement radar information is checked against laid down criteria. E6.1.4 Deficiencies are notified in accordance with local procedures.	**Operating conditions:** Day. Night. Low visibility.	***Underpinning knowledge*** SMR principles of operation. Limitations of SMR Processing and display of SMR data.

Topic E7 USE SURFACE MOVEMENT RADAR
Sub-Topic E7.1 USE SURFACE MOVEMENT RADAR

Performance Objectives	Conditions	Essential Knowledge
E7.1.1 Displayed information is accurately correlated with known traffic. E7.1.2 Action is taken to establish the identity of significant unknown returns. E7.1.3 Tracks and speeds are accurately assessed using displayed information. E7.1.4 Aircraft are informed, where necessary, of their position and other traffic.	**Traffic speeds:** Low and high speed traffic.	**Manual of Air Traffic Services Part 1 (Gen)** Surface movement radar. **Doc. 4444 Part 6** Use of surface movement radar.

Topic G1 MANAGE FLIGHTS OPERATING IN THE VICINITY OF THE AERODROME

Sub-Topic G1.1 MANAGE FLIGHTS OPERATING UNDER THE VISUAL FLIGHT RULES

Performance Objectives	Conditions	Essential Knowledge
G1.1.1 Flight data is assessed for actual and potential traffic conflicting. G1.1.2 Traffic is visually monitored to detect actual and potential conflicting. G1.1.3 The runway is safeguarded to ensure the safety of aircraft taking off and landing. G1.1.4 Traffic information is passed to enable pilots to position themselves in the traffic pattern. G1.1.5 Immediate action is taken to restore wake turbulence spacing when it has been eroded. G1.1.6 ATC procedures are adjusted to allow for the effects of weather on flight operations G1.1.7 ATC procedures are adjusted to allow for the effect of degradation of essential communication services on flight operations.	**Airspace category :** C,D,E, G. **Types of separation:** Departing aircraft. Reduced separation in the vicinity of aerodromes. **Types of Flight:** Fixed and Rotary Wing. VFR. Arriving, Departing, Local. **Wake Turbulence Categories:** Light, Medium, Heavy, Small. **Weather conditions:** VMC Suspension of VFR operations.	**Rules of the Air** General Flight Rules - rules for avoiding aerial collisions, right hand traffic rule, choice of IFR or VFR Visual Flight Rules Instrument Flight Rules Aerodrome traffic rules. Aerodrome signals and markings. **Manual of Air Traffic Services Part 1 (Gen)** Aerodrome control:- Provision of services. Responsibilities. Airspace classification. Effect of weather on operations. Essential aerodrome information. Control of surface traffic. Taxiing aircraft. Awaiting take off. Line up clearance. Take off clearance. Critical positions in the traffic circuit. Arriving aircraft. Exemptions from separation minima in the traffic circuit. Missed approach restrictions. Closure or restricted operation of aerodromes. Work on the manoeuvring area. Aerodrome inspections.

Performance Objectives	Conditions	Essential Knowledge
		Manual of Air Traffic Services Part 1 (Gen) Longitudinal separation - departing aircraft. Vortex wake spacing requirements. Reduced separation - in the vicinity of aerodromes, search and rescue aircraft, loss of separation. Essential traffic information Altimeter setting and vertical reference **Manual of Air Traffic Services Part 1 (Gen)** All applicable current instructions ***Underpinning knowledge*** Aircraft performance. Effects of weather on flight operations. Use and limitations of navigation and communications aids.

Topic G1 MANAGE FLIGHTS OPERATING IN THE VICINITY OF THE AERODROME
Sub-Topic G1.2 MANAGE FLIGHTS OPERATING UNDER THE INSTRUMENT FLIGHT RULES

Performance Objectives	Conditions	Essential Knowledge
G1.2.1 Flight data is assessed for actual and potential traffic conflicting. G1.2.2 A control strategy is developed to achieve separation with the least average delay to flights. G1.2.3 The runway is safeguarded to ensure the safety of aircraft taking off and landing. G1.2.4 Departing aircraft separation is applied. G1.2.5 The applied separation is the most appropriate taking into account safety and expedition. G1.2.6 Traffic is visually monitored to detect actual and potential conflicting. G1.2.7 Traffic information is passed to enable pilots operating with visual reference to position themselves in the traffic pattern. G1.2.8 Immediate action is taken to restore separation when it has been eroded. G1.2.9 Immediate action is taken to restore wake turbulence spacing when it has been eroded. G1.2.10 Appropriate essential traffic information is passed without delay.	**Airspace category :** A,C,D,E,G **Types of separation:** Departing aircraft. Reduced separation in the vicinity of aerodromes. **Types of Flight:** Fixed and Rotary Wing. IFR, SpVFR. Arriving, Departing, Local. **Wake Turbulence Categories:** Light, Medium, Heavy, Small. **Weather conditions:** VMC, IMC and Low Visibility.	**Rules of the Air** General Flight Rules - rules for avoiding aerial collisions, right hand traffic rule, choice of IFR or VFR Visual Flight Rules Instrument Flight Rules Aerodrome traffic rules. Aerodrome signals and markings. **Manual of Air Traffic Services Part 1 (Gen)** Provision of services. Responsibilities. Airspace classification. Effect of weather on operations. Essential aerodrome information. Control of surface traffic. Taxiing aircraft. Awaiting take off. Line up clearance. Take off clearance. Critical positions in the traffic circuit. Arriving aircraft. Exemptions from separation minima in the traffic circuit. Missed approach restrictions. Closure or restricted operation of aerodromes. Work on the manoeuvring area. Aerodrome inspections.

Performance Objectives	Conditions	Essential Knowledge
G1.2.11 ATC procedures are adjusted to allow for the effects of weather on flight operations. G1.2.12 ATC procedures are adjusted to allow for the effect of degradation of essential navigational and communication services on flight operations.		**Manual of Air Traffic Services Part 1 (Gen)** Separation standards:- Longitudinal separation - departing aircraft. Vortex wake spacing requirements. Reduced separation - in the vicinity of aerodromes, search and rescue aircraft, loss of separation. Essential traffic information Altimeter setting and vertical reference **Manual of Air Traffic Services Part 1 (Gen)** All applicable current instructions ***Underpinning knowledge*** Aircraft performance. Effects of weather on flight operations. Use and limitations of navigation and communications aids.

Topic G2 MANAGE AERODROME SURFACE MOVEMENTS
Sub-Topic G2.1 CONTROL AIRCRAFT ON THE MANOEUVRING AREA AND APRONS AND VEHICLES AND PERSONNEL ON THE MANOEUVRING AREA

Performance Objectives	Conditions	Essential Knowledge
G2.1.1 Aerodrome surface is monitored for potential conflicting. G2.1.2 Clearances issued achieve the most expeditious flow consistent with safety. G2.1.3 The condition of the airfield surface is evaluated when permitting movements. G2.1.4 Flow management requirements are met. G2.1.5 Requests for work on the airfield are evaluated and appropriately met.	**Surface movements:** Aircraft. Vehicles. Personnel. **Monitoring of surface movements:** Visually. **Communication by:** Radiotelephony. Light signals.	**Rules of the Air** General Flight Rules - choice of IFR or VFR Aerodrome traffic rules. Aerodrome signals and markings. **Manual of Air Traffic Services Part 1 (Gen)** Aerodrome control:- Provision of services. Responsibilities. Airspace classification. Effect of weather on operations. Essential aerodrome information. Control of surface traffic. Taxiing aircraft. Work on the manoeuvring area Aerodrome inspections. ***Underpinning knowledge*** Flow management procedures Aircraft limitations on ground manoeuvring.

Topic G3 CO-ORDINATE WITH OTHER ATC OPERATIONAL POSITIONS
Sub-Topic G3.1 CO-ORDINATE WITH APPROACH CONTROL OPERATIONAL POSITIONS

Performance Objectives	Conditions	Essential Knowledge
G3.1.1 Traffic situation is analysed to determine the need for co-ordination. G3.1.2 Appropriate co-ordination is initiated in sufficient time to permit negotiation and any agreement to be effected. G3.1.3 The effect of co-ordination requested by approach control is assessed. G3.1.4 An appropriate course of action is negotiated and agreed. G3.1.5 The agreed course of action is effected. G3.1.6 Flow management requirements are met.	**Control positions:** Approach control. Approach radar control.	**Manual of Air Traffic Services Part 1 (Gen)** Responsibilities - Co-ordination. Aircraft performance. Standing agreements. Flow management procedures.

Topic G4 MANAGE FLIGHTS OPERATING IN THE VICINITY OF THE AERODROME WITH THE AID OF AERODROME CONTROL RADAR

Sub-Topic G4.1 MANAGE FLIGHTS OPERATING UNDER THE VISUAL FLIGHT RULES

Performance Objectives	Conditions	Essential Knowledge
G4.1.1 Radar information is integrated with information from other sources. G4.1.2 Traffic is monitored to detect actual and potential conflicting. G4.1.3 Traffic information is passed to enable pilots operating with visual reference to position themselves in the traffic pattern. G4.1.4 Immediate action is taken to restore separation when it has been eroded. G4.1.5 Immediate action is taken to restore wake turbulence spacing when it has been eroded. G4.1.6 Appropriate essential traffic information is passed without delay. G4.1.7 ATC procedures are adjusted to allow for the effects of weather on flight operations. G4.1.8 ATC procedures are adjusted to allow for the effect of degradation of essential navigational and communication services on flight operations.	**Airspace categories:** D, E, G **Operating conditions:** Day.	**Rules of the Air** General Flight Rules - rules for avoiding aerial collisions, right hand traffic rule, choice of IFR or VFR Visual Flight Rules Instrument Flight Rules Aerodrome traffic rules. Aerodrome signals and markings. **Manual of Air Traffic Services Part 1 (Gen)** Aerodrome control:- Provision of services. Responsibilities. Airspace classification. Effect of weather on operations. Essential aerodrome information. Control of surface traffic. Taxiing aircraft. Awaiting take off. Line up clearance. Take off clearance. Critical positions in the traffic circuit. Arriving aircraft. Exemptions from sep. min in the traffic circuit. Aerodrome traffic monitor. Missed approach restrictions. Closure or restricted operation of a/d. Work on the manoeuvring area. Aerodrome inspections. Windshear.

Performance Objectives	Conditions	Essential Knowledge
		Manual of Air Traffic Services Part 1 (Gen) Separation standards:- Longitudinal separation - departing aircraft. Vortex wake spacing requirements. Reduced separation - in the vicinity of aerodromes, search and rescue aircraft, loss of separation. Essential traffic information Altimeter setting and vertical reference **Manual of Air Traffic Services Part 1 (Gen)** All applicable current instructions ***Underpinning knowledge*** Aircraft performance. Effects of weather on flight operations. Use and limitations of navigation and communications aids. Processing and display of ATM data.

Topic G4 MANAGE FLIGHTS OPERATING IN THE VICINITY OF THE AERODROME WITH THE AID OF AERODROME CONTROL RADAR

Sub-Topic G4.2 MANAGE FLIGHTS OPERATING UNDER THE INSTRUMENT FLIGHT RULES

Performance Objectives	Conditions	Essential Knowledge
G4.2.1 Radar information is integrated with information from other sources. G4.2.2 Flight data is assessed for actual and potential traffic conflicting. G4.2.3 A control strategy is developed to achieve separation with the least average delay to flights. G4.2.4 The runway is safeguarded to ensure the safety of aircraft taking off and landing. G4.2.5 Departing aircraft separation is applied. G4.2.6 The applied separation is the most appropriate taking into account safety and expedition. G4.2.7 Traffic is monitored to detect actual and potential conflicting. G4.2.8 Traffic information is passed to enable pilots operating with visual reference to position themselves in the traffic pattern. G4.2.9 Immediate action is taken to restore separation when it has been eroded.	**Airspace category :** A, C, D, E, G **Types of separation:** Departing aircraft. Reduced separation in the vicinity of aerodromes. **Types of Flight:** Fixed and Rotary Wing. IFR, SpVFR. Arriving, Departing. **Wake Turbulence Categories:** Light, Medium, Heavy, Small **Weather conditions:** VMC, IMC and Low Visibility.	**Rules of the Air** General Flight Rules - rules for avoiding aerial collisions, right hand traffic rule, choice of IFR or VFR Visual Flight Rules Instrument Flight Rules Aerodrome traffic rules. Aerodrome signals and markings. **Manual of Air Traffic Services Part 1 (Gen)** Provision of services. Responsibilities. Airspace classification. Effect of weather on operations. Essential aerodrome information. Control of surface traffic. Taxying aircraft. Awaiting take off. Line up clearance. Take off clearance. Critical positions in the traffic circuit. Arriving aircraft. Exemptions from separation minima in the traffic circuit. Missed approach restrictions. Aerodrome traffic monitor. Closure or restricted operation of a/d. Work on the manoeuvring area. Aerodrome inspections. Windshear.

Performance Objectives	Conditions	Essential Knowledge
G4.2.10 Immediate action is taken to restore wake turbulence spacing when it has been eroded. G4.2.11 Appropriate essential traffic information is passed without delay. G4.2.12 ATC procedures are adjusted to allow for the effects of weather on flight operations. G4.2.13 ATC procedures are adjusted to allow for the effect of degradation of essential navigational and communication services on flight operations.		**Manual of Air Traffic Services Part 1 (Gen)** Longitudinal separation - departing aircraft. Vortex wake spacing requirements. Reduced separation - in the vicinity of aerodromes, search and rescue aircraft, loss of separation. Essential traffic information. Altimeter setting and vertical reference:- **Manual of Air Traffic Services Part 1 (Gen)** All applicable current instructions ***Underpinning knowledge*** Aircraft performance. Effects of weather on flight operations. Use and limitations of navigation and communications aids. Processing and display of ATM data.

Topic G5 OPERATE SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEMS
Sub-Topic G5.1 OPERATE SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEMS

Performance Objectives	Conditions	Essential Knowledge
G5.1 Surface movement guidance and control systems are operated in accordance with laid down procedures.	**Operating conditions:** Day. Night. Low visibility.	**CAP168** Types of surface movement guidance and control systems. **Local procedures** Operating procedures.

Topic G6 MANAGE AERODROME SURFACE MOVEMENTS IN LOW VISIBILITY WITH THE AID OF SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEMS

Sub-Topic G6.1 CONTROL AIRCRAFT ON THE MANOEUVRING AREA AND APRONS AND VEHICLES AND PERSONNEL ON THE MANOEUVRING AREA

Performance Objectives	Conditions	Essential Knowledge
G6.1.1 Aerodrome surface is monitored for potential conflicting. G6.1.2 The runway is safeguarded to ensure the safety of aircraft taking off and landing. G6.1.3 Surface movement guidance and control systems are operated in accordance with laid down procedures. G6.1.4 Clearances issued achieve the most expeditious flow consistent with safety. G6.1.5 The condition of the airfield surface is evaluated when permitting movements. G6.1.6 Flow management requirements are met. G6.1.7 Requests for work on the airfield are evaluated and appropriately met.	**Operating conditions:** Day. Night. Low visibility. **Other sources:** Pilot reports. Other controllers.	**Rules of the Air** General Flight Rules - choice of IFR or VFR Aerodrome traffic rules. Aerodrome signals and markings. **Manual of Air Traffic Services Part 1 (Gen)** Aerodrome control:- Provision of services. Responsibilities. Airspace classification. Effect of weather on operations. Essential aerodrome information. Control of surface traffic. Taxiing aircraft. Work on the manoeuvring area Aerodrome inspections. ***Underpinning knowledge*** Flow management procedures Aircraft limitations on ground manoeuvring.

Topic G7 MANAGE AERODROME SURFACE MOVEMENTS WITH THE AID OF SURFACE MOVEMENT RADAR
Sub-Topic G7.1 CONTROL AIRCRAFT ON THE MANOEUVRING AREA AND APRONS AND VEHICLES AND PERSONNEL ON THE MANOEUVRING AREA

Performance Objectives	Conditions	Essential Knowledge
G7.1.1 Surface movement radar information is integrated with information from other sources. G7.1.2 Aerodrome surface is monitored for potential conflicting. G7.1.3 Clearances issued achieve the most expeditious flow consistent with safety. G7.1.4 The condition of the airfield surface is evaluated when permitting movements. G7.1.5 Flow management requirements are met. G7.1.6 Request for work on the airfield are evaluated and appropriately met.	**Operating conditions:** Day. Night. Low visibility. **Other sources:** Visual observation. Pilot reports.	**Manual of Air Traffic Services Part 1 (Gen)** Surface movement radar. **Rules of the Air** General Flight Rules - rules for avoiding aerial collisions, right hand traffic rule, choice of IFR or VFR. Aerodrome traffic rules. Aerodrome signals and markings. **Manual of Air Traffic Services Part 1 (Gen)** Provision of services. Responsibilities. Airspace classification. Effect of weather on operations. Essential aerodrome information. Control of surface traffic. Surface movement radar Taxying aircraft. Work on the manoeuvring area ***Underpinning knowledge*** Processing and display of SMR data. Flow management procedures. Aircraft limitations on ground manoeuvring.

Topic G8 EFFECT LIAISON WITH OTHER AGENCIES
Sub-Topic G8.1 LIAISE WITH NON ATC AGENCIES

Performance Objectives	Conditions	Essential Knowledge
G8.1.1 The sources of requests are verified. G8.1.2 Requests are evaluated for their effect on aerodrome operations. G8.1.3 Information on the status of the aerodrome and its associated aids is disseminated in accordance with local procedures.	**Non ATC Agencies:** Aerodrome Authority. Customs and Immigration. Police.	**Manual of Air Traffic Services Part 1 (Gen)** Aerodrome emergency services. Local Procedures.

Topic G8 EFFECT LIAISON WITH OTHER AGENCIES
Sub-Topic G8.2 LIAISE WITH THE SAFETY SERVICES

Performance Objectives	Conditions	Essential Knowledge
G8.2.1 The need for safety services call-out is identified in accordance with laid down criteria. G8.2.2 Call-outs are initiated in accordance with local procedures. G8.2.3 The category of call-out initiated is appropriate to the circumstances. G8.2.4 The sources of requests for off airfield attendance are verified. G8.2.5 Requests for off airfield attendance are evaluated for their effect on aerodrome operations. G8.2.6 Off airfield attendance is permitted in accordance with local procedures.	**Safety services:** Aerodrome fire and rescue services. Civil fire, ambulance and police.	**Manual of Air Traffic Services Part 1 (Gen)** Aerodrome fire service. **Manual of Air Traffic Services Part 1 (Gen)** Aerodrome emergency services. **Manual of Air Traffic Services Part 1 (Gen)** Aerodrome rescue and fire fighting. Heliport fire fighting categories.

Topic G9 HANDLE DIVERSIONS
Sub-Topic G9.1 HANDLE DIVERSIONS

Performance Objectives	Conditions	Essential Knowledge
G9.1.1 Information necessary to facilitate the diversion is obtained. G9.1.2 Other relevant agencies are informed of the diversion. G9.1.3 Flight plan data is amended. G9.1.4 Diversion messages are issued when appropriate.	**Types of diversion:** Pilot initiated. Company initiated. ATC initiated.	**Manual of Air Traffic Services Part 1 (Gen)** Diversion procedures. **Manual of Air Traffic Services Part 1 (Gen)** Aerodrome actions **Manual of Air Traffic Services Part 1 (Gen)** ATCC actions. ***Underpinning knowledge*** Background on weather minima. Background on fuel management.

Topic G10 WORK AS A TEAM MEMBER ON THE AERODROME CONTROL OPERATIONAL POSITION
Sub-Topic G10.1 ACCEPT RESPONSIBILITY FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G10.1.1 Compliance with licensing and medical requirements is confirmed. G10.1.2 Pre task briefing is carried out. G10.1.3 The current and projected traffic situation is obtained from the duty controller. G10.1.4 Current and projected workload is evaluated to determine whether the resources available are appropriate. G10.1.5 Action is taken to ensure resources are adequate for the task.	Initial arrival for duty period. Return following fatigue break.	**Aeronautical information circulars** Effects of drugs, medicines, fatigue, stress, medical conditions. **Air Navigation Order** Licensing requirements. Certification of competence **Manual of Air Traffic Services Part 1 (Gen)** Actions before taking over an operational position.

Topic G10 WORK AS A TEAM MEMBER ON THE AERODROME CONTROL OPERATIONAL POSITION
Sub-Topic G10.2 MONITOR PERFORMANCE WHILST RESPONSIBLE FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G10.2.1 Assistance is called for in sufficient time to ensure personal capabilities are not exceeded. G10.2.2 Assistance provided to other team members is appropriate to the circumstances. G10.2.3 Current and projected workload is evaluated to determine whether the resources available are appropriate. G10.2.4 Action is taken to ensure resources are adequate for the task. G10.2.5 Rest/fatigue break requirements are complied with. G10.2.6 Concentration is maintained at an appropriate level for the task. G10.2.7 Indications of reduced or inadequate performance are acted upon in an appropriate manner.	**Traffic flow:** Light, Medium, Heavy.	**CAP 670 Part D Annex C** Scheme for regulation of the hours of civil ATCOs in the UK ***Underpinning knowledge*** Indications of stress Indications of fatigue. Workload sharing.

Topic G10 WORK AS A TEAM MEMBER ON THE AERODROME CONTROL OPERATIONAL POSITION
Sub-Topic G10.3 TRANSFER RESPONSIBILITY FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G10.3.1 The current traffic situation is clearly communicated to the relieving controller. G10.3.2 The current and projected operating conditions are clearly communicated to the relieving controller. G10.3.3 Current and projected workload is evaluated to determine whether the resources available are appropriate. G10.3.4 Action is taken to ensure resources are adequate for the task.	Running handover.	**CAP 670 Part D Annex C** Scheme for regulation of the hours of civil ATCOs in the UK **Manual of Air Traffic Services Part 1 (Gen)** Actions when handing over an operational position

Topic H1 MANAGE DEVELOPED EMERGENCIES FROM THE AERODROME CONTROL UNIT
Sub-Topic H1.1 MANAGE RADIO FAILURES

Performance Objectives	Conditions	Essential Knowledge
H1.1.1 Aircraft radio failure is recognised from available information. H1.1.2 Standard radio failure procedures are implemented.	**Types of failure:** Ground radio. Partial and complete aircraft radio. **Environment:** Radar and non radar environment.	**Manual of Air Traffic Services Part 1 (Gen)** Pilot actions in the event of loss of communications. ATC procedures in the event of loss of communications. **Manual of Air Traffic Services Part 1 (Gen)** Reporting actions. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information.

Topic H1 MANAGE DEVELOPED EMERGENCIES FROM THE AERODROME CONTROL UNIT
Sub-Topic H1.2 MANAGE SITUATIONS ARISING FROM UNLAWFUL INTERFERENCE

Performance Objectives	Conditions	Essential Knowledge
H1.2.1 The possibility of unlawful interference is recognised from available information. H1.2.2 Standard procedures are adhered to when dealing with aircraft subject to unlawful interference.	Aircraft intending to land. Aircraft on ground.	**Manual of Air Traffic Services Part 1 (Gen)** Hi-jacking and the unlawful use of aircraft. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information. **Manual of Air Traffic Services Part 1 (Gen)** Reporting action.

Topic H1 MANAGE DEVELOPED EMERGENCIES FROM THE AERODROME CONTROL UNIT
Sub-Topic H1.3 MANAGE AIRCRAFT EMERGENCIES

Performance Objectives	Conditions	Essential Knowledge
H1.3.1 The possibility of an emergency situation existing is recognised from available information. H1.3.2 The nature of the emergency is determined. H1.3.3 The level of priority over other traffic is evaluated	**Types of emergency:** Engine. Airframe. Fuel based. Medical.	**Manual of Air Traffic Services Part 1 (Gen)** Aircraft emergencies. Aircraft lost. **Manual of Air Traffic Services Part 1 (Gen)** Reporting action ***Underpinning knowledge*** Aircraft performance and performance limitations.

Topic H1 MANAGE DEVELOPED EMERGENCIES FROM THE AERODROME CONTROL UNIT
Sub-Topic H1.4 PROVIDE ALERTING SERVICE

Performance Objectives	Conditions	Essential Knowledge
H1.4.1 Available information is evaluated to determine the phase of emergency existing. H1.4.2 Actions follow laid down procedures appropriate to the phase of the emergency.	**Phases of emergency:** Uncertainty. Alert. Distress.	**Manual of Air Traffic Services Part 1 (Gen)** Alerting service. Overdue aircraft. **Manual of Air Traffic Services Part 1 (Gen)** Reporting action.

Topic H2 MANAGE DOMESTIC CONTINGENCIES IN AN AERODROME VISUAL CONTROL ROOM
Sub-Topic H2.1 SAFELY EVACUATE THE CONTROL ROOM

Performance Objectives	Conditions	Essential Knowledge
H2.1.1 Available information is evaluated to determine the need to evacuate the control room. H2.1.2 Traffic is disposed of in accordance with laid down procedures. H2.1.3 Evacuation is conducted in accordance with laid down procedures.	**Reasons for evacuation:** Fire and Bomb Warnings.	**Local procedures** Evacuation of control room.

2.4 Rating Requirements for ATCOs – Approach Control Procedural Rating

KEY ROLES AND TOPICS FOR APPROACH PROCEDURAL CONTROL

KEY ROLES	TOPICS
KEY ROLE A COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES	A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT A3 COMMUNICATE FROM AN APPROACH CONTROL UNIT (NON SURVEILLANCE)
KEY ROLE B ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY	B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY B3 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR APPROACH CONTROL
KEY ROLE C CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS	C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
KEY ROLE G MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC	G11 PROVIDE PROCEDURAL APPROACH CONTROL SERVICE G12 CO-ORDINATE WITH OTHER AGENCIES G13 MANAGE DIVERSIONS AND HOLDING SITUATIONS G20 WORK AS A TEAM MEMBER ON THE APPROACH CONTROL OPERATIONAL POSITION
KEY ROLE H MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES	H3 MANAGE DEVELOPED EMERGENCIES FROM THE APPROACH CONTROL UNIT H5 MANAGE DOMESTIC CONTINGENCIES IN AN APPROACH CONTROL ROOM

TOPICS AND SUB-TOPICS FOR APPROACH PROCEDURAL CONTROL

KEY ROLE A	**COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES**
TOPICS	**SUB-TOPICS**
A1 Check and operate communications equipment	A1.1 Establish and monitor the communications equipment serviceability A1.2 Use the communications equipment
A3 Communicate from an approach control unit (non surveillance)	A3.1 Use standard phraseology applicable to procedural approach control
KEY ROLE B	**ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY**
TOPICS	**SUB-TOPICS**
B1 Correlate flight data into appropriate proforma for display	B1.1 Obtain flight data information B1.2 Insert flight data into the appropriate proforma
B3 Maintain a representative flight data display for approach control	B3.1 Correlate flight data into a display for procedural approach control B3.2 Update the procedural approach control flight data display
KEY ROLE C	**CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS**
TOPICS	**SUB-TOPICS**
C1 Obtain, interpret and disseminate meteorological information	C1.1 Obtain meteorological information C1.2 Interpret meteorological information C1.3 Disseminate meteorological information
C2 Obtain, interpret and disseminate aeronautical information	C2.1 Obtain aeronautical information C2.2 Interpret aeronautical information C2.3 Disseminate aeronautical information

KEY ROLE G	**MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC**
TOPICS	**SUB-TOPICS**
G11 Provide procedural approach control service	G11.1 Provide approach control service without the use of surveillance equipment. G11.2 Provide advisory approach service without the use of surveillance equipment.
G12 Co-ordinate with other agencies	G12.1 Co-ordinate with adjacent area control positions G12.2 Co-ordinate with adjacent aerodromes
G13 Manage diversions and holding situations	G13.1 Handle diversions G13.2 Manage holding situations
G20 Work as a team member for the approach control operational position	G20.1 Accept responsibility for the operational position G20.2 Monitor performance whilst responsible for the operational position G20.3 Transfer responsibility for the operational position
KEY ROLE H	**MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES**
TOPICS	**SUB-TOPICS**
H3 Manage developed emergencies from the approach control unit	H3.1 Manage radio failures H3.2 Manage situations arising from unlawful interference H3.3 Manage Aircraft Emergencies H3.4 Provide Alerting Service
H5 Manage domestic contingencies in an approach control room	H5.1 Safely evacuate the control room

Topic A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT

Sub-Topic A1.1 ESTABLISH AND MONITOR THE COMMUNICATIONS EQUIPMENT SERVICEABILITY

Performance Objectives	Conditions	Essential Knowledge
A1.1.1 Visual and/or aural indications are checked whilst making and receiving transmissions for indications of normal operation. A1.1.2 Documentation confirming equipment status is checked. A1.1.3 Malfunctions and defects are recorded and reported to the appropriate authority according to standing procedures.	**Procedures**: Unit specific.	**Local procedures** Equipment visual and aural indications. Watch log entries. Local standing procedures for reporting equipment faults. ***Underpinning knowledge*** Deriving information from NOTAMS.

Topic A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT
Sub-Topic A1.2 USE THE COMMUNICATIONS EQUIPMENT

Performance Objectives	Conditions	Essential Knowledge
A1.2.1 The readability of transmissions is assessed. A1.2.2 Standard speech technique is adhered to. A1.2.3 The appropriate frequency is selected and used. A1.2.4 Transmit and intercom switches are used in accordance with standard procedures. A1.2.5 The appropriate telephone is used. A1.2.6 Ancillary telephone equipment is used in accordance with std. procedures.	**Communication methods:** Radiotelephony, Telephone.	**Manual of Air Traffic Services Part 1 (Gen)** Communications technique. Speech technique. Test transmissions.

Topic A3 COMMUNICATE FROM AN APPROACH CONTROL UNIT (NON SURVEILLANCE)

Sub-Topic A3.1 USE STANDARD PHRASEOLOGY APPLICABLE TO PROCEDURAL APPROACH CONTROL

Performance Objectives	Conditions	Essential Knowledge
A3.1.1 Standard phraseology is employed wherever possible in communications. A3.1.2 Composition of messages is concise and unambiguous. A3.1.3 Station identity is used correctly. A3.1.4 Acknowledgements and readbacks are obtained and verified when required. A3.1.5 Abbreviated phraseology is used when appropriate.	**Communication by:** Radiotelephone, telephone **Message Types:** Clearances, instructions, information.	**Manual of Air Traffic Services Part 1 (Gen)** Standard non-surveillance approach control phraseology. Standard speech abbreviations. Radiotelephony callsigns. Communication with aircraft. Transfer of communications. Transmission of company messages.

Topic B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY
Sub-Topic B1.1 OBTAIN FLIGHT DATA INFORMATION

Performance Objectives	Conditions	Essential Knowledge
B1.1.1 Flight data information is extracted from all appropriate sources. B1.1.2 Relevant flight data is included at the earliest opportunity. B1.1.3 Flight data is checked to ensure completeness. B1.1.4 Any significant deficiency in flight data is rectified.	**Methods of Display:** Flight progress strips. Electronic data displays.	**Doc. 4444 Appendix 2** Content of full and abbreviated flight plans ATS service messages. **Doc. 7910** ICAO location indicators **Doc.8585** ICAO abbreviations **Manual of Air Traffic Services Part 1 (Gen)** Filing of flight plans Non standard routes Repetitive flight plan Exemptions and non standard flights **Local procedures** Flight plan processing

Topic B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY
Sub-Topic B1.2 INSERT FLIGHT DATA INTO THE APPROPRIATE PROFORMA

Performance Objectives	Conditions	Essential Knowledge
B1.2.1 Strip marking is legible and conforms to standard procedures. B1.2.2 Correct message entry formats are used. B1.2.3 Relevant flight data is included at the earliest opportunity.	**Methods of Display:** Flight progress strips. Electronic data displays.	**Doc. 7910** ICAO location indicators **Doc. 8585** ICAO abbreviations **Local procedures** Conventional strip marking

Topic B3 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY
Sub-Topic B3.1 CORRELATE FLIGHT DATA INTO A DISPLAY FOR PROCEDURAL APPROACH CONTROL

Performance Objectives	Conditions	Essential Knowledge
B3.1.1 All relevant traffic is included on the display. B3.1.2 Flight progress strips are organised in a manner that reflects the traffic situation in accordance with laid down procedures. B3.1.3 Electronic flight data displays are organised in accordance with laid down procedures.	**Methods of display:** Flight progress strip displays. Electronic flight data displays.	Layout and use of flight progress strips. Layout of and use of electronic flight data displays.

Topic B3 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY
Sub-Topic B3.2 UPDATE THE PROCEDURAL APPROACH CONTROL FLIGHT DATA DISPLAY

Performance Objectives	Conditions	Essential Knowledge
B3.2.1 Information is extracted from all relevant sources. B3.2.2 The display is updated using information received. B3.2.3 Clearances and instructions passed to aircraft and other agencies are recorded. B3.2.4 Co-ordination agreed with other agencies is recorded. B3.2.5 The integrity of EDD performance and data is monitored.	**Sources of information:** Pilot reports. Information from other controllers. Information from other agencies. Computer derived information. **Methods of display:** Flight progress strips. Electronic data displays.	Aircraft performance. Time, speed, distance calculations. Effects of wind. **Local Procedures** Report formats. EDD display parameters.

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.1 OBTAIN METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.1.1 Current and forecast weather information is obtained before taking over watch. C1.1.2 Current and forecast weather information is monitored during the watch. C1.1.3 Weather information and reports from pilots are recorded.	**Types of briefing:** Self and Met office briefing. **Types of report:** Routine and special reports. Met Warnings. Reports from pilots.	**Manual of Air Traffic Services Part 1 (Gen)** Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (Gen)** Windshear. **Manual of Air Traffic Services Part 1 (Gen)** Meteorological services:- Briefing of controllers. Explanation of terms. Supply of information. Aerodrome meteorological reports (Routine) Aerodrome meteorological reports (Special) Coded aerodrome weather reports. SIGMET. Forecasts ***Underpinning knowledge*** Meteorology:- Wind, cloud, thunderstorms, microbursts, icing, line squalls. Pilot in flight reports (PIREPS) Low level charts. Significant weather charts. Aerodrome warnings

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.2 INTERPRET METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.2.1 Significant weather changes are recognised C1.2.2 The relevance of meteorological information to individual flights or agencies is established.	**Significant weather:** Thunderstorms and Cumulonimbus clouds. Freezing rain, Moderate / Severe icing. Severe turbulence. Severe mountain waves. Low visibility. Low level windshear.	**Manual of Air Traffic Services Part 1 (Gen)** Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (Gen)** Windshear. **Manual of Air Traffic Services Part 1 (Gen)** Meteorological services:- Briefing of controllers. Explanation of terms. Supply of information. Aerodrome meteorological reports (Routine) Aerodrome meteorological reports (Special) Coded aerodrome weather reports. SIGMET. Forecasts ***Underpinning knowledge*** Meteorology:- Wind, cloud, thunderstorms, microbursts, icing, line squalls. Pilot in flight reports (PIREPS) Low level charts. Significant weather charts. Aerodrome warnings

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.3 DISSEMINATE METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.3.1 Aircraft are advised of significant changes in weather information. C1.3.2 Other agencies are advised of significant changes in weather information.	**Significant weather:** Surface wind. Thunderstorms and Cumulonimbus clouds. Freezing rain. Moderate / Severe icing. Severe turbulence. Severe mountain waves. Low visibility. Low level windshear.	Effects of weather on flight operations. Meteorology:- Wind, cloud, thunderstorms, icing, jetstreams, clear air turbulence, microburst, marked mountain waves, line squalls, solar radiation. **Manual of Air Traffic Services Part 1 (Gen)** Approach control:- Transmission of Meteorological information. ATIS. **Manual of Air Traffic Services Part 1 (Gen)** Windshear.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.1 OBTAIN AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.1.1 Aeronautical information is obtained before taking over watch. C2.1.2 Aeronautical information is monitored during the watch. C2.1.3 Pilots' requests for information are promptly and appropriately responded to. C2.1.4 Required information is obtained promptly from appropriate agencies.	**Sources of information:** AIP, NOTAMS, Local notices. Airspace restrictions.	**AIP** Content and use of AIP, NOTAM. Aeronautical information circulars. Restricted, prohibited airspace. Danger areas. Aeronautical charts.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.2 INTERPRET AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.2.1 Significant changes are recognised. C2.2.2 The relevance of aeronautical information to individual flights or agencies is established.	**Operating conditions:** Normal conditions. Unserviceable navigation aids. Restrictions at aerodromes. Unserviceable approach and landing aids. Reduction of safety services cover. Surface contamination.	***Underpinning knowledge*** Communication and navigation systems, uses and limitations. Conditions affecting operations at aerodromes. Airspace restrictions.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.3 DISSEMINATE AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.3.1 Aircraft are advised of significant changes in aeronautical information. C2.3.2 Other agencies are advised of significant changes in aeronautical information.	**Operating conditions:** Normal conditions. Unserviceable navigation aids. Restrictions at aerodromes. Unserviceable approach and landing aids. Reduction of safety services cover. Surface contamination.	**Manual of Air Traffic Services Part 1 (Gen)** Flight information service. **Manual of Air Traffic Services Part 1 (Gen)** Essential aerodrome information. ***Underpinning Knowledge*** Communication and navigation systems, uses and limitations. Conditions affecting operations at aerodromes. Airspace restrictions.

Topic G11 PROVIDE PROCEDURAL APPROACH CONTROL SERVICE

Sub-Topic G11.1 PROVIDE APPROACH CONTROL SERVICE WITHOUT THE USE OF SURVEILLANCE EQUIPMENT

Performance Objectives	Conditions	Essential Knowledge
G11.1.1 Flight data is assessed for actual and potential traffic conflicting. G11.1.2 A control strategy is developed to achieve separation with the least average delay to flights. G11.1.3 Non radar separation is applied. G11.1.4 The applied separation is the most appropriate taking into account safety and expedition. G11.1.5 Traffic is monitored to ensure that appropriate non-radar separation standards are not eroded. G11.1.6 Immediate action is taken to restore separation when it has been eroded. G11.1.7 Appropriate essential traffic information is passed without delay. G11.1.8 ATC procedures are adjusted to allow for the effects of weather on flight operations. G11.1.9 ATC procedures are adjusted to allow for the effect of degradation of essential navigational and communication services on flight operations.	**Airspace category :** A, C, D, E. Control Zone **Types of separation:** Standard, reduced, increased, vertical, horizontal or lateral separation. **Types of Flight:** En route, joining, crossing and leaving controlled airspace.	Altimetry, Heights, Altitudes and Flight Levels. Aircraft performance. Effects of weather on flight operations. Use and limitations of navigation and communications aids. **Rules of the Air** General Flight Rules Instrument Flight Rules Visual Flight Rules **Manual of Air Traffic Services Part 1 (Gen)** Air Traffic Services. Flight Rules. Separation standards (excluding radar and ADS), reduced and increased separation. Wake turbulence spacing. Application of separation. Actions in the event of loss of separation. Essential traffic information. Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (Gen)** Approach control. Runway visual range Integration of VFR flights with IFR flights. **Manual of Air Traffic Services Part 1 (Gen)** Actions in the event of loss of separation, reporting action. **Manual of Air Traffic Services Part 1 (Gen)** All applicable current instructions. **Manual of Air Traffic Services Part 1 (Gen)** Withdrawal and restoration of approach aids.

Topic G11 PROVIDE PROCEDURAL APPROACH CONTROL SERVICE
Sub-Topic G11.2 PROVIDE ADVISORY APPROACH SERVICE WITHOUT THE USE OF SURVEILLANCE EQUIPMENT

Performance Objectives	Conditions	Essential Knowledge
G11.2.1 Flight data is assessed for actual and potential traffic conflicting. G11.2.2 A control strategy is developed to achieve separation with the least average delay to flights. G11.2.3 Non radar separation is applied. G11.2.4 The applied separation is the most appropriate taking into account safety and expedition. G11.2.5 Traffic is monitored to ensure that appropriate non radar separation standards are not eroded. G11.2.6 Immediate action is taken to restore separation when it has been eroded. G11.2.7 Appropriate essential traffic information is passed without delay. G11.2.8 ATC procedures are adjusted to allow for the effects of weather on flight operations. G11.2.9 ATC procedures are adjusted to allow for the effect of degradation of essential navigational and communication services on flight operations.	**Airspace category :** G **Types of separation:** Standard, reduced, increased, vertical, horizontal or lateral separation. **Types of Flight:** Arriving, departing and overflying aircraft.	Altimetry, Heights, Altitudes and Flight Levels. Aircraft performance. Effects of weather on flight operations. Use and limitations of navigation and communications aids. **Rules of the Air** General Flight Rules Instrument Flight Rules Visual Flight Rules **Manual of Air Traffic Services Part 1 (Gen)** Air Traffic Services. Flight Rules. Separation standards (Excluding radar) Control of traffic Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (Gen)** Approach control. Runway visual range Integration of VFR flights with IFR flights. **Manual of Air Traffic Services Part 1 (Gen)** Actions in the event of loss of separation, reporting action. **Manual of Air Traffic Services Part 1 (Gen)** All applicable current instructions. **Manual of Air Traffic Services Part 1 (Gen)** Withdrawal and restoration of approach aids.

Topic G12 CO-ORDINATE WITH OTHER AGENCIES
Sub-Topic G12.1 CO-ORDINATE WITH ADJACENT AREA CONTROL OPERATIONAL POSITIONS

Performance Objectives	Conditions	Essential Knowledge
G12.1.1 Traffic situation is analysed to determine the need for co-ordination. G12.1.2 Appropriate co-ordination is initiated in sufficient time to permit negotiation and any agreement to be effected. G12.1.3 The effect of co-ordination requested by adjacent air traffic units is assessed. G12.1.4 An appropriate course of action is negotiated and agreed. G12.1.5 The agreed course of action is effected. G12.1.6 Flow management requirements are met.	**Control positions:** Parent centre. Adjacent centres.	Aircraft performance. **Manual of Air Traffic Services Part 1 (Gen)** Methods of co-ordination. **Manual of Air Traffic Services Part 1 (Gen)** Data on IFR traffic. Departing aircraft Releases to approach control. Radar release. Release subject your discretion. Release subject. Flow management procedures.

Topic G12 CO-ORDINATE WITH OTHER AGENCIES
Sub-Topic G12.2 CO-ORDINATE WITH ADJACENT AERODROMES

Performance Objectives	Conditions	Essential Knowledge
G12.2.1 Co-ordination for arriving aircraft is initiated in sufficient time to permit its implementation. G12.2.2 Departure clearances are formulated to expedite departures whilst minimising disruption to the en route flow of traffic. G12.2.3 Flow management requirements are met.	Single and multiple arrivals and departures. IFR and VFR arrivals. Visual approaches. IFR and VFR departures.	**Manual of Air Traffic Services Part 1 (Gen)** Co-ordination. Transfer of control. **Manual of Air Traffic Services Part 1 (Gen)** Approach Control:- Co-ordination. Transfer of control. Transfer of communications Aircraft performance. Methods of co-ordination. Transfer of control. Transfer of communication Flow management procedures.

Topic G13 MANAGE DIVERSIONS AND HOLDING SITUATIONS
Sub-Topic G13.1 HANDLE DIVERSIONS

Performance Objectives	Conditions	Essential Knowledge
G13.1.1 Information necessary to facilitate the diversion is obtained. G13.1.2 Other relevant agencies are informed of the diversion. G13.1.3 Flight plan data is amended. G13.1.4 Diversion messages are issued when appropriate.	**Types of diversion:** Pilot initiated. ATC initiated. Company initiated.	Background on weather minima. Background on fuel management. **Manual of Air Traffic Services Part 1 (Gen)** Reasons for diversions. **Manual of Air Traffic Services Part 1 (Gen)** Diversions. Aerodromes receiving diversions.

Topic G13 MANAGE DIVERSIONS AND HOLDING SITUATIONS
Sub-Topic G13.2 MANAGE HOLDING SITUATIONS

Performance Objectives	Conditions	Essential Knowledge
G13.2.1 Flight data is assessed to determine the need for holding. G13.2.2 Aircraft are informed of the need to hold in sufficient time. G13.2.3 Aircraft are advised of the expected delay. G13.2.4 Other relevant agencies are informed of the holding. G13.2.5 Flight plan data is amended.	**Holding:**- for traffic, weather, airfield closure.	Reasons for holding. **ICAO Doc 8168** Holding Criteria. **Manual of Air Traffic Services Part 1 (Gen)** Onward clearance times. **Manual of Air Traffic Services Part 1 (Gen)** Expected approach times including no ATC delay and delay not determined. Holding for weather improvement.

Topic G20 WORK AS A TEAM MEMBER ON THE APPROACH CONTROL OPERATIONAL POSITION
Sub-Topic G20.1 ACCEPT RESPONSIBILITY FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G20.1.1 Compliance with licensing and medical requirements is confirmed. G20.1.2 Pre task briefing is carried out. G20.1.3 The current and projected traffic situation is obtained from the duty controller. G20.1.4 Current and projected workload is evaluated to determine whether the resources available are appropriate. G20.1.5 Action is taken to ensure resources are adequate for the task.	Initial arrival for duty period. Return following fatigue break.	**Aeronautical information circulars** Effects of drugs, medicines, fatigue, stress, medical conditions. **Air Navigation Order** Licensing requirements. Certification of competence **Manual of Air Traffic Services Part 1 (Gen)** Actions before taking over an operational position.

Topic G20 WORK AS A TEAM MEMBER ON THE APPROACH CONTROL OPERATIONAL POSITION
Sub-Topic G20.2 MONITOR PERFORMANCE WHILST RESPONSIBLE FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G20.2.1 Assistance is called for in sufficient time to ensure personal capabilities are not exceeded. G20.2.2 Assistance provided to other team members is appropriate to the circumstances. G20.2.3 Current and projected workload is evaluated to determine whether the resources available are appropriate. G20.2.4 Action is taken to ensure resources are adequate for the task. G20.2.5 Rest/fatigue break requirements are complied with. G20.2.6 Concentration is maintained at an appropriate level for the task. G20.2.7 Indications of reduced or inadequate performance are acted upon in an appropriate manner.	**Traffic flow:** Light, Medium, Heavy.	**CAP 670 Part D Annex C** Scheme for regulation of the hours of civil ATCOs in the UK ***Underpinning knowledge*** Indications of stress Indications of fatigue. Workload sharing.

Topic G20 WORK AS A TEAM MEMBER ON THE APPROACH CONTROL OPERATIONAL POSITION
Sub-Topic G20.3 TRANSFER RESPONSIBILITY FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G20.3.1 The current traffic situation is clearly communicated to the relieving controller. G20.3.2 The current and projected operating conditions are clearly communicated to the relieving controller. G20.3.3 Current and projected workload is evaluated to determine whether the resources available are appropriate. G20.3.4 Action is taken to ensure resources are adequate for the task.	Running handover.	**CAP 670 Part D Annex C** Scheme for regulation of the hours of civil ATCOs in the UK **Manual of Air Traffic Services Part 1 (Gen)** Actions when handing over an operational position

Topic H3 MANAGE DEVELOPED EMERGENCIES FROM THE APPROACH CONTROL UNIT
Sub-Topic H3.1 MANAGE RADIO FAILURES

Performance Objectives	Conditions	Essential Knowledge
H3.1.1 Aircraft radio failure is recognised from available information. H3.1.2 Standard radio failure procedures are implemented.	**Types of failure:** Ground radio. Partial and complete aircraft radio. **Environment:** Non radar environment.	**Manual of Air Traffic Services Part 1 (Gen)** Pilot actions in the event of loss of communications. ATC procedures in the event of loss of communications. **Manual of Air Traffic Services Part 1 (Gen)** Reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information.

Topic H3 MANAGE DEVELOPED EMERGENCIES FROM THE APPROACH CONTROL UNIT
Sub-Topic H3.2 MANAGE SITUATIONS ARISING FROM UNLAWFUL INTERFERENCE

Performance Objectives	Conditions	Essential Knowledge
H3.2.1 The possibility of unlawful interference is recognised from available information. H3.2.2 Standard procedures are adhered to when dealing with aircraft subject to unlawful interference.	Aircraft overflying, intending to land within area of jurisdiction. **Environment** Non radar environment.	**Manual of Air Traffic Services Part 1 (Gen)** Indications of unlawful interference. Laid down handling procedures, National and International. Special communications procedures. Reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information.

Topic H3 MANAGE DEVELOPED EMERGENCIES FROM THE APPROACH CONTROL UNIT
Sub-Topic H3.3 MANAGE AIRCRAFT EMERGENCIES

Performance Objectives	Conditions	Essential Knowledge
H3.3.1 The possibility of an emergency situation existing is recognised from available information. H3.3.2 The nature of the emergency is determined. H3.3.3 The level of priority over other traffic is evaluated.	**Types of emergency:** Engine. Airframe. Fuel based. Medical. **Environment** Non radar environment.	**Manual of Air Traffic Services Part 1 (Gen)** Overdue aircraft, criteria and actions. Phases of emergency. Categories of emergency. **Manual of Air Traffic Services Part 1 (Gen)** Reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information. **CAP 382** Minimum Ops Requirements scheme.

Topic H3 MANAGE DEVELOPED EMERGENCIES FROM THE APPROACH CONTROL UNIT
Sub-Topic H3.4 PROVIDE ALERTING SERVICE

Performance Objectives	Conditions	Essential Knowledge
H3.4.1 Available information is evaluated to determine the phase of emergency existing. H3.4.2 Actions follow laid down procedures appropriate to the phase of the emergency.	**Phases of emergency:** Uncertainty. Alert. Distress. **Environment** Non radar environment.	**MATS Part 1 Section 5** Overdue aircraft, criteria and actions. Phases of emergency. Categories of emergency. **MATS Part 1 Section 6** Reporting action. **MATS Part 1 Section 1** Availability of supplementary flight plan information. **CAP 382** Minimum Ops Requirements scheme.

Topic H5 MANAGE DOMESTIC CONTINGENCIES IN AN APPROACH CONTROL ROOM
Sub-Topic H5.1 SAFELY EVACUATE THE CONTROL ROOM

Performance Objectives	Conditions	Essential Knowledge
H5.1.1 Available information is evaluated to determine the need to evacuate the control room. H5.1.2 Traffic is disposed of in accordance with laid down procedures. H5.1.3 Evacuation is conducted in accordance with laid down procedures.	**Reasons for evacuation:** Fire and Bomb Warnings.	**Local procedures** Evacuation of control room.

2.5 Rating Requirements for ATCOs – Approach Control Surveillance Rating

KEY ROLES AND TOPICS FOR APPROACH SURVEILLANCE CONTROL (RADAR ENDORSEMENT)

KEY ROLES	TOPIC TITLES
KEY ROLE A COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES	A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT A5 COMMUNICATE FROM AN APPROACH RADAR CONTROL UNIT
KEY ROLE B ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY	B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY B4 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR APPROACH RADAR CONTROL
KEY ROLE C CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS	C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
KEY ROLE E SET UP AND USE SURVEILLANCE RADAR	E1 SELECT AND SET UP SURVEILLANCE RADAR EQUIPMENT E2 USE PRIMARY RADAR E3 USE SECONDARY RADAR
KEY ROLE G MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC	G21 PROVIDE APPROACH CONTROL SERVICE WITH THE USE OF SURVEILLANCE RADAR G22 CO-ORDINATE WITH OTHER AGENCIES G23 WITH THE AID OF SURVEILLANCE RADAR MANAGE DIVERSIONS AND HOLDING SITUATIONS G24 WORK AS A TEAM MEMBER ON THE APPROACH RADAR CONTROL OPERATIONAL POSITION
KEY ROLE H MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES	H4 MANAGE DEVELOPED EMERGENCIES FROM THE RADAR EQUIPPED APPROACH CONTROL UNIT H5 MANAGE DOMESTIC CONTINGENCIES IN AN APPROACH CONTROL ROOM

TOPICS AND SUB-TOPICS FOR APPROACH SURVEILLANCE CONTROL (RADAR ENDORSEMENT)

KEY ROLE A	**COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES**
TOPICS	**SUB-TOPICS**
A1 Check and operate communications equipment	A1.1 Establish and monitor the communications equipment serviceability A1.2 Use the communications equipment
A5 Communicate from an approach radar control unit	A5.1 Use standard phraseology applicable to approach radar control.
KEY ROLE B	**ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY**
TOPICS	**SUB-TOPICS**
B1 Correlate flight data into appropriate proforma for display	B1.1 Obtain flight data information B1.2 Insert flight data into the appropriate proforma
B4 Maintain a representative flight data display for approach radar control	B4.1 Correlate flight data into a display for approach radar control B4.2 Update the approach radar control flight data display
KEY ROLE C	**CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS**
TOPICS	**SUB-TOPICS**
C1 Obtain, interpret and disseminate meteorological information	C1.1 Obtain meteorological information C1.2 Interpret meteorological information C1.3 Disseminate meteorological information
C2 Obtain, interpret and disseminate aeronautical information	C2.1 Obtain aeronautical information C2.2 Interpret aeronautical information C2.3 Disseminate aeronautical information

KEY ROLE E	**SET UP AND USE SURVEILLANCE RADAR**
TOPICS	**SUB-TOPICS**
E1 Select and set up surveillance radar equipment	E1.1 Select and set up primary surveillance radar E1.2 Select and set up secondary surveillance radar
E2 Use primary radar	E2.1 Identify aircraft using primary radar E2.2 Use primary radar information
E3 Use secondary radar	E3.1 Identify aircraft using secondary radar E3.2 Validate and Verify secondary radar information E3.3 Use secondary radar information
KEY ROLE G	**MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC**
TOPICS	**SUB-TOPICS**
G21 Provide approach control service with the use of surveillance radar.	G21.1 Provide approach control service with the use of surveillance radar. G21.2 Provide advisory approach service with the use of surveillance radar. G21.3 Provide flight information service with the use of surveillance radar.
G22 Co-ordinate with other agencies	G22.1 Co-ordinate with adjacent area control positions G22.2 Co-ordinate with aerodrome control
G23 With the aid of surveillance radar manage diversions and holding situations	G23.1 Handle diversions G23.2 Handle holding situations
G24 Work as a team member on the approach radar control operational position	G24.1 Accept responsibility for the operational position G24.2 Monitor performance whilst responsible for the operational position G24.3 Transfer responsibility for the operational position

KEY ROLE H	**MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES**
TOPICS	**SUB-TOPICS**
H4 Manage developed emergencies from the radar equipped approach control unit	H4.1 Manage radio failures H4.2 Manage situations arising from unlawful interference H4.3 Manage Aircraft Emergencies H4.4 Provide Alerting Service H4.5 Recover from a radar failure.
H5 Manage domestic contingencies in an approach control room	H5.1 Safely evacuate the control room

Topic A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT
Sub-Topic A1.1 ESTABLISH AND MONITOR THE COMMUNICATIONS EQUIPMENT SERVICEABILITY

Performance Objectives	Conditions	Essential Knowledge
A1.1.1 Visual and/or aural indications are checked whilst making and receiving transmissions for indications of normal operation. A1.1.2 Documentation confirming equipment status is checked. A1.1.3 Malfunctions and defects are recorded and reported to the appropriate authority according to standing procedures.	**Procedures**: Unit specific.	**Local procedures** Equipment visual and aural indications. Watch log entries. Local standing procedures for reporting equipment faults. ***Underpinning knowledge*** Deriving information from NOTAMS.

Topic A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT
Sub-Topic A1.2 USE THE COMMUNICATIONS EQUIPMENT

Performance Objectives	Conditions	Essential Knowledge
A1.2.1 The readability of transmissions is assessed. A1.2.2 Standard speech technique is adhered to. A1.2.3 The appropriate frequency is selected and used. A1.2.4 Transmit and intercom switches are used in accordance with standard procedures. A1.2.5 The appropriate telephone is used. A1.2.6 Ancillary telephone equipment is used in accordance with standard procedures.	**Communication methods:** Radiotelephony, Telephone.	**Manual of Air Traffic Services Part 1 (Gen)** Communications technique. Speech technique. Test transmissions.

Topic A5 COMMUNICATE FROM AN APPROACH RADAR CONTROL UNIT
Sub-Topic A5.1 USE STANDARD PHRASEOLOGY APPLICABLE TO APPROACH RADAR CONTROL

Performance Objectives	Conditions	Essential Knowledge
A5.1.1 Standard phraseology is employed wherever possible in communications. A5.1.2 Composition of messages is concise and unambiguous. A5.1.3 Station identity is used correctly. A5.1.4 Acknowledgements and readbacks are obtained and verified when required. A5.1.5 Abbreviated phraseology is used when appropriate.	**Communication by:** Radiotelephone, telephone**.** **Message Types:** Clearances, instructions, information.	**Manual of Air Traffic Services Part 1 (Gen** Standard approach radar control phraseology. Standard speech abbreviations. Radiotelephony callsigns. Communication with aircraft. Transfer of communications. Transmission of company messages.

Topic B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY
Sub-Topic B1.1 OBTAIN FLIGHT DATA INFORMATION

Performance Objectives	Conditions	Essential Knowledge
B1.1.1 Flight data information is extracted from all appropriate sources. B1.1.2 Relevant flight data is included at the earliest opportunity. B1.1.3 Flight data is checked to ensure completeness. B1.1.4 Any significant deficiency in flight data is rectified.	**Methods of Display:** Flight progress strips. Electronic data displays.	**Doc. 4444 Appendix 2** Content of full and abbreviated flight plans ATS service messages. **Doc. 7910** ICAO location indicators **Doc.8585** ICAO abbreviations **Manual of Air Traffic Services Part 1 (Gen)** Filing of flight plans Non standard routes Repetitive flight plan Exemptions and non standard flights **Local procedures** Flight plan processing

Topic B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY
Sub-Topic B1.2 INSERT FLIGHT DATA INTO THE APPROPRIATE PROFORMA

Performance Objectives	Conditions	Essential Knowledge
B1.2.1 Strip marking is legible and conforms to standard procedures. B1.2.2 Correct message entry formats are used. B1.2.3 Relevant flight data is included at the earliest opportunity.	**Methods of Display:** Flight progress strips. Electronic data displays.	**Doc. 7910** ICAO location indicators **Doc. 8585** ICAO abbreviations **Local procedures** Conventional strip marking

Topic B4 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY
Sub-Topic B4.1 CORRELATE FLIGHT DATA INTO A DISPLAY FOR APPROACH RADAR CONTROL

Performance Objectives	Conditions	Essential Knowledge
B4.1.1 Strip marking is legible and conforms to standard procedures. B4.1.2 Correct message entry formats are used. B4.1.3 All relevant traffic is included on the display. B4.1.4 Flight progress strips are organised in a manner that reflects the traffic situation in accordance with laid down procedures. B4.1.5 Electronic flight data displays are organised in accordance with laid down procedures.	**Types of display:** Progress strip displays. Electronic flight data displays.	**Local Procedures** Layout and use of flight progress strips. Layout of and use of electronic flight data displays.

Topic B4 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR APPROACH RADAR CONTROL
Sub-Topic B4.2 UPDATE THE APPROACH RADAR CONTROL FLIGHT DATA DISPLAY

Performance Objectives	Conditions	Essential Knowledge
B4.2.1 Information is extracted from all relevant sources. B4.2.2 The display is updated using information received. B4.2.3 Clearances and instructions passed to aircraft and other agencies are recorded. B4.2.4 Co-ordination agreed with other agencies is recorded. B4.2.5 The integrity of EDD performance and data is monitored.	**Sources of information:** Pilot reports. Information from other controllers. Information from other agencies. Computer derived information. **Methods of display:** Flight progress strips. Electronic data displays.	Aircraft performance. Time, speed, distance calculations. Effects of wind. Conventional strip marking EDD display parameters.

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.1 OBTAIN METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.1.1 Current and forecast weather information is obtained before taking over watch. C1.1.2 Current and forecast weather information is monitored during the watch. C1.1.3 Weather information and reports from pilots are recorded.	**Types of briefing:** Self and Met office briefing. **Types of report:** Routine and special reports. Met Warnings. Reports from pilots.	**Manual of Air Traffic Services Part 1 (Gen)** Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (Gen)** Windshear. **Manual of Air Traffic Services Part 1 (Gen)** Meteorological services:- Briefing of controllers. Explanation of terms. Supply of information. Aerodrome meteorological reports (Routine) Aerodrome meteorological reports (Special) Coded aerodrome weather reports. SIGMET. Forecasts ***Underpinning knowledge*** Meteorology:- Wind, cloud, thunderstorms, microbursts, icing, line squalls. Pilot in flight reports (PIREPS) Low level charts. Significant weather charts. Aerodrome warnings

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.2 INTERPRET METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.2.1 Significant weather changes are recognised C1.2.2 The relevance of meteorological information to individual flights or agencies is established.	**Significant weather:** Thunderstorms and Cumulonimbus clouds. Freezing rain, Moderate / Severe icing. Severe turbulence. Severe mountain waves. Low visibility.	**Manual of Air Traffic Services Part 1 (Gen** Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (Gen** Windshear. **Manual of Air Traffic Services Part 1 (Gen** Meteorological services:- Briefing of controllers. Explanation of terms. Supply of information. Aerodrome meteorological reports (Routine) Aerodrome meteorological reports (Special) Coded aerodrome weather reports. SIGMET. Forecasts ***Underpinning knowledge*** Meteorology:- Wind, cloud, thunderstorms, microbursts, icing, line squalls. Pilot in flight reports (PIREPS) Low level charts. Significant weather charts. Aerodrome warnings

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.3 DISSEMINATE METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.3.1 Aircraft are advised of significant changes in weather information. C1.3.2 Other agencies are advised of significant changes in weather information.	**Significant weather:** Thunderstorms and Cumulonimbus clouds. Freezing rain. Moderate / Severe icing. Severe turbulence. Severe mountain waves. Low visibility.	Effects of weather on flight operations. Meteorology:- Wind, cloud, thunderstorms, icing, jetstreams, clear air turbulence, microburst, marked mountain waves, line squalls, solar radiation. **Manual of Air Traffic Services Part 1 (Gen)** Approach control:- Transmission of Meteorological information. ATIS.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.1 OBTAIN AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.1.1 Aeronautical information is obtained before taking over watch. C2.1.2 Aeronautical information is monitored during the watch. C2.1.3 Pilots' requests for information are promptly and appropriately responded to. C2.1.4 Required information is obtained promptly from appropriate agencies.	**Sources of information:** AIP, NOTAMS, Local notices. Airspace restrictions.	**AIP** Content and use of AIP, NOTAM. Aeronautical information circulars. Restricted, prohibited airspace. Danger areas. Aeronautical charts. Aeronautical Information Circulars.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.2 INTERPRET AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Underpinning Knowledge
C2.2.1 Significant changes are recognised. C2.2.2 The relevance of aeronautical information to individual flights or agencies is established.	**Operating conditions:** Normal conditions. Unserviceable navigation aids. Restrictions at aerodromes.	Communication and navigation systems, uses and limitations. Conditions affecting operations at aerodromes. Airspace restrictions.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.3 DISSEMINATE AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.3.1 Aircraft are advised of significant changes in aeronautical information. C2.3.2 Other agencies are advised of significant changes in aeronautical information.	**Operating conditions:** Normal conditions. Unserviceable navigation aids. Restrictions at aerodromes.	**Manual of Air Traffic Services Part 1 (Gen)** Flight information service. **Manual of Air Traffic Services Part 1 (Gen)** Essential aerodrome information. ***Underpinning Knowledge*** Communication and navigation systems, uses and limitations. Conditions affecting operations at aerodromes. Airspace restrictions.

Topic E1 SELECT AND SET UP SURVEILLANCE RADAR EQUIPMENT
Sub-Topic E1.1 SELECT AND SET UP PRIMARY SURVEILLANCE RADAR

Performance Objectives	Conditions	Essential Knowledge
E1.1.1 Most suitable available surveillance radar is selected. E1.1.2 Controls are adjusted to provide best available performance. E1.1.3 Accuracy of radar is checked against laid down criteria. E1.1.4 Deficiencies are notified in accordance with local procedures.	**Operating conditions:** Normal atmospheric and anomalous propagation conditions. Weather and ground clutter. **Types of Radar:** Analogue and processed radar.	Primary radar principles of operation. Limitations of primary radar. Radar accuracy and definition. Operational radar coverage. The use and effects of controls available to the controller. The use and effects of suppressors. Processing and display of primary radar data.

Topic E1 SELECT AND SET UP SURVEILLANCE RADAR EQUIPMENT
Sub-Topic E1.2 SELECT AND SET UP SECONDARY SURVEILLANCE RADAR

Performance Objectives	Conditions	Essential Knowledge
E1.2.1 Most suitable available surveillance radar is selected. E1.2.2 Controls are adjusted to provide best available performance. E1.2.3 Accuracy of radar is checked against laid down criteria. E1.2.4 Deficiencies are notified in accordance with local procedures.	**Secondary Radar Modes:** Modes A, C and S. **Types of Radar display:** Analogue and processed radar.	Secondary radar principles of operation. Limitations of secondary radar. Processing and display of secondary radar data.

Topic E2 USE PRIMARY RADAR
Sub-Topic E2.1 IDENTIFY AIRCRAFT USING PRIMARY RADAR

Performance Objectives	Conditions	Essential Knowledge
E2.1.1 Probable target is located using available information. E2.1.2 Identification is carried out using standard methods. E2.1.3 Aircraft are informed, where necessary, of identification.	**Types of Radar display:** Analogue and processed displays. **Special conditions:** Mis-identification.	**Manual of Air Traffic Services Part 1 (Gen)** Radar Operation:- Identification using primary radar. Summary identification and position information.

Topic E2 USE PRIMARY RADAR
Sub-Topic E2.2 USE PRIMARY RADAR INFORMATION

Performance Objectives	Conditions	Essential Knowledge
E2.2.1 Tracks and speeds are accurately assessed using displayed information. E2.2.2 Vectors are provided to make good a track or reach a specified location. E2.2.3 Aircraft are informed, where necessary, of their position, other traffic and significant displayed weather.	**Atmospheric conditions:** Cyclonic, anticyclonic and zero wind conditions. Wind Shear **Traffic speeds:** Low and high speed traffic.	Indicated airspeed, true airspeed and ground speed. Heading and track. Effects of wind. **Manual of Air Traffic Services Part 1 (Gen)** Radar operation:- Position information. Vectoring. Terrain clearance. Unknown aircraft. Traffic information. **Manual of Air Traffic Services Part 1 (Gen)** Obstacle clearance criteria Position information

Topic E3 USE SECONDARY RADAR
Sub-Topic E3.1 IDENTIFY AIRCRAFT USING SECONDARY RADAR

Performance Objectives	Conditions	Essential Knowledge
E3.1.1 Probable target is located using available information. E3.1.2 Identification is carried out using standard methods. E3.1.3 Aircraft are informed, where necessary, of identification.	**Types of Radar display:** Analogue and processed displays. **Special conditions:** Mis-identification.	**Manual of Air Traffic Services Part 1 (Gen)** Radar Operation:- Identification using secondary radar. Summary identification and position information.

Topic E3 USE SECONDARY RADAR
Sub-Topic E3.2 VALIDATE AND VERIFY SECONDARY RADAR INFORMATION

Performance Objectives	Conditions	Essential Knowledge
E3.2.1 Mode A information is validated using laid down procedures. E3.2.2 Action is taken to rectify incorrect Mode A information in accordance with laid down procedures. E3.2.3 Mode C information is verified using laid down procedures. E3.2.4 Action is taken to rectify incorrect mode C indications in accordance with laid down procedures. E3.2.5 Mode S information is confirmed in accordance with laid down procedures. E3.2.6 Action is taken to minimise the effects of incorrect indications.	**Received indications:** Correct and incorrect, correctable and non-correctable indications. Code Callsign conversion failure. Special purpose codes.	Altimetry, Heights, Altitudes and Flight Levels. **AIP** Allocation of SSR codes. Originating region code allocation method. **Manual of Air Traffic Services Part 1 (Gen)** Methods of validating mode A. Actions in the event of incorrect mode A indications. Methods of verifying mode C. Actions in the event of incorrect mode C indications. Procedures for confirming the accuracy of Mode S information.

Topic E3 USE SECONDARY RADAR
Sub-Topic E3.3 USE SECONDARY RADAR INFORMATION

Performance Objectives	Conditions	Essential Knowledge
E3.3.1 Tracks and speeds are accurately assessed using displayed information. E3.3.2 Vectors are provided to make good a track or reach a specified location. E3.3.3 Aircraft are informed, where necessary, of their position, and other traffic.	**Atmospheric conditions:** Cyclonic, anticyclonic and zero wind conditions. Wind Shear. **Traffic speeds:** Low and high speed traffic.	Indicated airspeed, true airspeed and ground speed. Heading and track. Effects of wind. **Manual of Air Traffic Services Part 1 (Gen)** Radar operation:- Position information. Vectoring. Terrain Clearance. Unknown aircraft. Traffic information. **Manual of Air Traffic Services Part 1 (Gen)** Obstacle clearance criteria. Position information.

Topic G21 PROVIDE APPROACH CONTROL SERVICE WITH THE USE OF SURVEILLANCE RADAR
Sub-Topic G21.1 PROVIDE APPROACH CONTROL SERVICE WITH THE USE OF SURVEILLANCE RADAR

Performance Objectives	Conditions	Essential Knowledge
G21.1.1 Flight data is assessed for actual and potential traffic conflicting. G21.1.2 Aircraft are identified on radar. G21.1.3 A control strategy is developed to achieve separation with the least average delay to flights. G21.1.4 Appropriate radar separation is achieved. G21.1.5 The radar is monitored to ensure that separation is not eroded. G21.1.6 The applied separation is the most appropriate taking into account safety and expedition. G21.1.7 Immediate action is taken to restore separation when it has been eroded. G21.1.8 Appropriate traffic information is passed without delay. G21.1.9 Radar procedures are adjusted to allow for the effects of weather on flight operations. G21.1.10 Radar procedures are adjusted to allow for the effect of degradation of essential navigational and communication services on flight operations.	**Airspace category:** A, C, D, E. Control zone, Control area of limited extent. **Types of Radar:** Primary, Secondary, Analogue, Processed Radar. **Control techniques:** Radar Monitoring, Vectoring, Speed Control. **Types of flight:** Aircraft operating within, joining, crossing and leaving controlled airspace.	Altimetry, Heights, Altitudes and Flight Levels. Radar principles of operation and limitations. Aircraft performance. Effects of weather on flight operations. Use and limitations of navigation and communications aids. Vectoring techniques. Speed control techniques. **Rules of the Air** General Flight Rules Instrument Flight Rules Visual Flight Rules **Manual of Air Traffic Services Part 1 (Gen)** Air traffic services:- Introduction. Air traffic service Air traffic control service Radar operation:- Radar services. Penetration by independent units Identification using primary radar. Identification using secondary radar. Transfer of identity. Lost Identity. Non radar separation standards applicable to a radar environment. Radar separation standards. Wake turbulence spacing.

Performance Objectives	Conditions	Essential Knowledge
		Traffic information. Unknown traffic information. Actions in the event of loss of separation. Weather avoidance by pilots. Weather avoidance by radar controllers. **Manual of Air Traffic Services Part 1 (Gen)** Approach Control:- Provision of services Delegation Arriving aircraft Visual approach Instrument approaches Approach sequence. Departing aircraft. Joining and overflying aircraft. Approach radar:- Area of responsibility Services. Control of inbound traffic. Altimeter setting Radar vectoring to final approach Surveillance radar approaches Missed approach instructions Discontinuing of radar approach Radar departures. Integration of VFR flights with IFR flights:- Introduction. Flight rules. Control of VFR flights. Operation of gliders in class D airspace. Letters of agreement.

Topic G21 PROVIDE APPROACH CONTROL SERVICE WITH THE USE OF SURVEILLANCE RADAR
Sub-Topic G21.2 PROVIDE ADVISORY APPROACH SERVICE WITH THE USE OF SURVEILLANCE RADAR

Performance Objectives	Conditions	Essential Knowledge
G21.2.1 Flight data is assessed for actual and potential traffic conflicting. G21.2.2 Aircraft are identified on radar. G21.2.3 A control strategy is developed to achieve separation with the least average delay to flights. G21.2.4 Appropriate radar separation is achieved. G21.2.5 The radar is monitored to ensure that separation is not eroded. G21.2.6 The applied separation is the most appropriate taking into account safety and expedition. G21.2.7 Immediate action is taken to restore separation when it has been eroded. G21.2.8 Appropriate traffic information is passed without delay. G21.2.9 Radar procedures are adjusted to allow for the effects of weather on flight operations. G21.2.10 Radar procedures are adjusted to allow for the effect of degradation of essential navigational and communication services on flight operations.	**Airspace category:** F. G **Types of Radar:** Primary, Secondary, Analogue, Processed Radar. **Control techniques:** Radar Monitoring, Vectoring, Speed Control. **Types of flight:** Aircraft operating outside, joining and leaving controlled and advisory airspace.	Altimetry, Heights, Altitudes and Flight Levels. Radar principles of operation and limitations. Aircraft performance. Effects of weather on flight operations. Use and limitations of navigation and communications aids. Vectoring techniques. Speed control techniques. **Rules of the Air** General Flight Rules Instrument Flight Rules Visual Flight Rules **Manual of Air Traffic Services Part 1 (Gen)** Air traffic services:- Introduction. Air traffic service Air traffic advisory service Radar operation:- Radar services. Penetration by independent units Identification using primary radar. Identification using secondary radar. Transfer of identity. Lost Identity. Non radar separation standards applicable to a radar environment. Radar separation standards. Wake turbulence spacing.

Performance Objectives	Conditions	Essential Knowledge
		Traffic information. Unknown traffic information. Actions in the event of loss of separation. Weather avoidance by pilots. Weather avoidance by radar controllers. **Manual of Air Traffic Services Part 1 (Gen)** Approach Control:- Provision of services Delegation Arriving aircraft Visual approach Instrument approaches Approach sequence. Departing aircraft. Joining and overflying aircraft. Approach radar:- Area of responsibility Services. Control of inbound traffic. Altimeter setting Radar vectoring to final approach Surveillance radar approaches Missed approach instructions Discontinuing of radar approach Radar departures. Integration of VFR flights with IFR flights:- Introduction. Flight rules. Control of VFR flights. Letters of agreement.

Topic G21 PROVIDE APPROACH CONTROL SERVICE WITH THE USE OF SURVEILLANCE RADAR
Sub-Topic G21.3 PROVIDE FLIGHT INFORMATION SERVICE WITH THE USE OF SURVEILLANCE RADAR

Performance Objectives	Conditions	Essential Knowledge
G21.3.1 Flight data is assessed for actual and potential traffic conflicting. G21.3.2 Aircraft are identified on radar. G21.3.3 The radar is monitored to provide information on displayed weather. G21.3.4 The radar is monitored to provide information on observed traffic. G21.3.5 Information on observed weather is passed to pilots and appropriate agencies. G21.3.6 Appropriate traffic information is passed without delay. G21.3.7 Radar procedures are adjusted to allow for the effects of weather on flight operations. G21.3.8 Radar procedures are adjusted to allow for the effect of degradation of essential navigational and communication services on flight operations.	**Airspace category:** F, G **Types of Radar:** Primary, Secondary, Analogue, Processed Radar. **Control techniques:** Radar Monitoring, Vectoring, Speed Control. **Types of flight:** Aircraft operating outside, joining and leaving controlled airspace and advisory airspace.	Altimetry, Heights, Altitudes and Flight Levels. Radar principles of operation and limitations. Aircraft performance. Effects of weather on flight operations. Use and limitations of navigation and communications aids. Vectoring techniques. Speed control techniques. **Rules of the Air** General flight rules Instrument flight rules Visual flight rules **Manual of Air Traffic Services Part 1 (Gen)** Air traffic services:- Introduction. Air traffic service:- Radar information service Radar operation:- Radar services. Provision of services. Radar information service. Identification using primary radar. Identification using secondary radar. Transfer of identity. Lost Identity. Traffic information. Unknown traffic information. Weather avoidance by pilots. Weather avoidance by radar controllers.

Topic G22 CO-ORDINATE WITH OTHER AGENCIES
Sub-Topic G22.1 CO-ORDINATE WITH ADJACENT AREA CONTROL OPERATIONAL POSITIONS

Performance Objectives	Conditions	Essential Knowledge
G22.1.1 Traffic situation is analysed to determine the need for co-ordination. G22.1.2 Appropriate co-ordination is initiated in sufficient time to permit negotiation and any agreement to be effected. G22.1.3 The effect of co-ordination requested by adjacent air traffic units is assessed. G22.1.4 An appropriate course of action is negotiated and agreed. G22.1.5 The agreed course of action is effected. G22.1.6 Flow management requirements are met.	**Control positions:** Parent centre. Adjacent centres.	Aircraft performance. **MATS Part 1 Section 1** Methods of co-ordination. **MATS Part 1 Section 4** Data on IFR traffic. Departing aircraft Releases to approach control. Radar release. Release subject your discretion. Release subject. Flow management procedures.

Topic G22 CO-ORDINATE WITH OTHER AGENCIES
Sub-Topic G22.2 CO-ORDINATE WITH AERODROMES

Performance Objectives	Conditions	Essential Knowledge
G22.2.1 Co-ordination for arriving aircraft is initiated in sufficient time to permit its implementation. G22.2.2 Departure clearances are formulated to expedite departures whilst minimising disruption to the en route flow of traffic. G22.2.3 Flow management requirements are met.	Single and multiple arrivals and departures.	**MATS Part 1 Section 1** Co-ordination. Transfer of control. **MATS Part 1 Section 3** Approach Control:- Co-ordination. Transfer of control. Transfer of communications Aircraft performance. Methods of co-ordination. Transfer of control. Transfer of communication Flow management procedures.

Topic G23 MANAGE DIVERSIONS AND HOLDING SITUATIONS
Sub-Topic G23.1 HANDLE DIVERSIONS

Performance Objectives	Conditions	Essential Knowledge
G23.1.1 Information necessary to facilitate the diversion is obtained. G23.1.2 Other relevant agencies are informed of the diversion. G23.1.3 Flight plan data is amended. G23.1.4 Diversion messages are issued when appropriate.	**Types of diversion:** Pilot initiated. ATC initiated. Company initiated.	Reasons for diversions. Background on weather minima. Background on fuel management. **Manual of Air Traffic Services Part 1 (Gen)** Diversions. Aerodromes receiving diversions.

Topic G23 MANAGE DIVERSIONS AND HOLDING SITUATIONS
Sub-Topic G23.2 MANAGE HOLDING SITUATIONS

Performance Objectives	Conditions	Essential Knowledge
G23.2.1 Radar information is assessed to determine the need for holding. G23.2.2 Aircraft are informed of the need to hold in sufficient time. G23.2.3 Aircraft are advised of the expected delay. G13.2.4 Other relevant agencies are informed of the holding. G23.2.5 Flight data is amended. G23.2.6 Identity is re-established when aircraft leave the holding pattern.	**Holding:**- For traffic, weather, airfield closure.	**Manual of Air Traffic Services Part 1 (Gen)** Approach Control:- Holding Procedures. Expected approach time including no ATC delay and delay not determined.. Holding for weather improvement. **Doc 8168** Holding Criteria.

Topic G24 WORK AS A TEAM MEMBER ON THE APPROACH RADAR CONTROL OPERATIONAL POSITION
Sub-Topic G24.1 ACCEPT RESPONSIBILITY FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G24.1.1 Compliance with licensing and medical requirements is confirmed. G24.1.2 Pre task briefing is carried out. G24.1.3 The current and projected traffic situation is obtained from the duty controller. G24.1.4 Current and projected workload is evaluated to determine whether the resources available are appropriate. G24.1.5 Action is taken to ensure resources are adequate for the task.	Initial arrival for duty period. Return following fatigue break.	**Aeronautical information circulars** Effects of drugs, medicines, fatigue, stress, medical conditions. **Air Navigation Order** Licensing requirements. Certification of competence **Manual of Air Traffic Services Part 1 (Gen)** Actions before taking over an operational position.

Topic G24 WORK AS A TEAM MEMBER ON THE APPROACH RADAR CONTROL OPERATIONAL POSITION
Sub-Topic G24.2 MONITOR PERFORMANCE WHILST RESPONSIBLE FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G24.2.1 Assistance is called for in sufficient time to ensure personal capabilities are not exceeded. G24.2.2 Assistance provided to other team members is appropriate to the circumstances. G24.2.3 Current and projected workload is evaluated to determine whether the resources available are appropriate. G24.2.4 Action is taken to ensure resources are adequate for the task. G24.2.5 Rest/fatigue break requirements are complied with. G24.2.6 Concentration is maintained at an appropriate level for the task. G24.2.7 Indications of reduced or inadequate performance is acted upon in an appropriate manner.	**Traffic flow:** Light, Medium, Heavy.	**CAP 670 Part D Annex C** Scheme for regulation of the hours of civil ATCOs in the UK ***Underpinning knowledge*** Indications of stress Indications of fatigue. Workload sharing.

Topic G24 WORK AS A TEAM MEMBER ON THE APPROACH RADAR CONTROL OPERATIONAL POSITION
Sub-Topic G24.3 TRANSFER RESPONSIBILITY FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G24.3.1 The current traffic situation is clearly communicated to the relieving controller. G24.3.2 The current and projected operating conditions are clearly communicated to the relieving controller. G24.3.3 Current and projected workload is evaluated to determine whether the resources available are appropriate. G24.3.4 Action is taken to ensure resources are adequate for the task.	Running handover.	**CAP 670 Part D Annex C** Scheme for regulation of the hours of civil ATCOs in the UK **Manual of Air Traffic Services Part 1 (Gen)** Actions when handing over an operational position

Topic H4 MANAGE DEVELOPED EMERGENCIES FROM THE RADAR EQUIPPED APPROACH CONTROL UNIT
Sub-Topic H4.1 MANAGE RADIO FAILURES

Performance Objectives	Conditions	Essential Knowledge
H4.1.1 Aircraft radio failure is recognised from available information. H4.1.2 Standard radio failure procedures are implemented.	**Types of failure:** Ground radio. Partial and complete aircraft radio. **Environment:** Radar.	**Manual of Air Traffic Services Part 1 (Gen)** Pilot actions in the event of loss of communications. ATC procedures in the event of loss of communications. **Manual of Air Traffic Services Part 1 (Gen)** Reporting actions. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information.

Topic H4 MANAGE DEVELOPED EMERGENCIES FROM THE RADAR EQUIPPED APPROACH CONTROL UNIT
Sub-Topic H4.2 MANAGE SITUATIONS ARISING FROM UNLAWFUL INTERFERENCE

Performance Objectives	Conditions	Essential Knowledge
H4.2.1 The possibility of unlawful interference is recognised from available information. H4.2.2 Standard procedures are adhered to when dealing with aircraft subject to unlawful interference.	Aircraft overflying, intending to land within area of jurisdiction. **Environment** Radar	**Manual of Air Traffic Services Part 1 (Gen)** Indications of unlawful interference. Laid down handling procedures, National and International. Special communications procedures. Reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information

Topic H4 MANAGE DEVELOPED EMERGENCIES FROM THE RADAR EQUIPPED APPROACH CONTROL UNIT
Sub-Topic H4.3 MANAGE AIRCRAFT EMERGENCIES

Performance Objectives	Conditions	Essential Knowledge
H4.3.1 The possibility of an emergency situation existing is recognised from available information. H4.3.2 The nature of the emergency is determined. H4.3.3 The level of priority over other traffic is evaluated.	**Types of emergency:** Engine. Airframe. Fuel based. Medical. **Environment** Radar.	Aircraft performance and performance limitations. **Manual of Air Traffic Services Part 1 (Gen)** Overdue aircraft, criteria and actions. Phases of emergency. Categories of emergency. **Manual of Air Traffic Services Part 1 (Gen)** Reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information. **CAP 382** MOR scheme.

Topic H4 MANAGE DEVELOPED EMERGENCIES FROM THE RADAR EQUIPPED APPROACH CONTROL UNIT
Sub-Topic H4.4 PROVIDE ALERTING SERVICE

Performance Objectives	Conditions	Essential Knowledge
H4.4.1 Available information is evaluated to determine the phase of emergency existing. H4.4.2 Actions follow laid down procedures appropriate to the phase of the emergency.	**Phases of emergency:** Uncertainty. Alert. Distress. **Environment** Radar.	**Manual of Air Traffic Services Part 1 (Gen)** Overdue aircraft, criteria and actions. Phases of emergency. Categories of emergency. **Manual of Air Traffic Services Part 1 (Gen)** Reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information. **CAP 382** MOR scheme.

Topic H4 MANAGE DEVELOPED EMERGENCIES FROM THE RADAR EQUIPPED APPROACH CONTROL UNIT
Sub-Topic H4.5 RECOVER FROM A RADAR FAILURE

Performance Objectives	Conditions	Essential Knowledge
H4.5.1 Aircraft are informed of the failure H4.5.2 Flight data is assessed for actual and potential traffic conflicting. H4.5.3 A control strategy is developed to achieve separation with the least average delay to flights. H4.5.4 Immediate action is taken to achieve non-radar separation. H4.5.5 Appropriate traffic information is passed without delay. H4.5.6 The applied separation is the most appropriate taking into account safety and expedition. H4.5.7 Appropriate traffic flow restrictions are applied. H4.5.8 Aircraft are identified on resumption of radar service. H4.5.9 Aircraft are informed of the resumption of radar service.	**Airspace category:** A, C, D, E, G. Control zone **Operating environment** Total radar failure **Types of flight:** Aircraft en route, joining, crossing and leaving controlled and advisory airspace.	Altimetry, Heights, Altitudes and Flight Levels. Effects of weather on flight operations. Use and limitations of navigation and communications aids. **Manual of Air Traffic Services Part 1 (Gen)** Non radar separation standards. Radar separation standards. Wake turbulence spacing. Aircraft performance. Actions in the event of radar failure. Reporting action. Essential traffic information. Traffic information. **Manual of Air Traffic Services Part 1 (Gen)** All applicable current instructions. Ground based collision avoidance systems.

Topic H5 MANAGE DOMESTIC CONTINGENCIES IN AN APPROACH CONTROL ROOM
Sub-Topic H5.1 SAFELY EVACUATE THE CONTROL ROOM

Performance Objectives	Conditions	Essential Knowledge
H5.1.1 Available information is evaluated to determine the need to evacuate the control room. H5.1.2 Traffic is disposed of in accordance with laid down procedures. H5.1.3 Evacuation is conducted in accordance with laid down procedures.	**Reasons for evacuation:** Fire and Bomb Warnings.	**Local procedures** Evacuation of control room.

2.6 Rating Requirements for ATCOs – Area Control Procedural Rating

KEY ROLES AND TOPICS FOR AREA CONTROL PROCEDURAL

KEY ROLES	TOPICS
KEY ROLE A COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES	A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT A7 COMMUNICATE FROM AN AREA CONTROL UNIT
KEY ROLE B ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY	B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY B6 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR AREA CONTROL
KEY ROLE C CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS	C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
KEY ROLE G MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC	G30 PROVIDE PROCEDURAL AREA CONTROL SERVICE G31 CO-ORDINATE WITH OTHER AGENCIES G32 MANAGE DIVERSIONS AND HOLDING SITUATIONS G33 WORK AS A TEAM MEMBER ON THE AREA CONTROL OPERATIONAL POSITION
KEY ROLE H MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES	H6 MANAGE DEVELOPED EMERGENCIES FROM THE AREA CONTROL UNIT H8 MANAGE DOMESTIC CONTINGENCIES IN AN AREA CONTROL ROOM

TOPICS AND SUB-TOPICS FOR AREA CONTROL PROCEDURAL

KEY ROLE A	**COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES**
TOPICS	**SUB-TOPICS**
A1 Check and operate communications equipment	A1.1 Establish and monitor the communications equipment serviceability A1.2 Use the communications equipment
A7 Communicate from an area control unit	A7.1 Use standard phraseology applicable to procedural area control
KEY ROLE B	**ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY**
TOPICS	**SUB-TOPICS**
B1 Correlate flight data into appropriate proforma for display	B1.1 Obtain flight data information B1.2 Insert flight data into the appropriate proforma
B6 Maintain a representative flight data display for area control	B6.1 Correlate flight data into a display for procedural area control B6.2 Update the procedural area control flight data display
KEY ROLE C	**CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS**
TOPICS	**SUB-TOPICS**
C1 Obtain, interpret and disseminate meteorological information	C1.1 Obtain meteorological information C1.2 Interpret meteorological information C1.3 Disseminate meteorological information
C2 Obtain, interpret and disseminate aeronautical information	C2.1 Obtain aeronautical information C2.2 Interpret aeronautical information C2.3 Disseminate aeronautical information

KEY ROLE G	**MANAGE THE NON SURVEILLANCE OPERATIONAL POSITION AND ITS TRAFFIC**
TOPICS	**SUB-TOPICS**
G30 Provide procedural area control service	G30.1 Provide area control service without the use of surveillance equipment. G30.2 Provide advisory area service without the use of surveillance equipment.
G31 Co-ordinate with other agencies	G31.1 Co-ordinate with adjacent area control positions G31.2 Co-ordinate with adjacent aerodromes
G32 Manage diversions and holding situations	G32.1 Handle diversions G32.2 Manage holding situations
G33 Work as a team member for the area control operational position	G33.1 Accept responsibility for the operational position G33.2 Monitor performance whilst responsible for the operational position G33.3 Transfer responsibility for the operational position
KEY ROLE H	**MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES**
TOPICS	**SUB-TOPICS**
H6 Manage developed emergencies from the area control unit.	H6.1 Manage radio failures H6.2 Manage situations arising from unlawful interference H6.3 Manage Aircraft Emergencies H6.4 Provide Alerting Service
H8 Manage domestic contingencies in an area control room.	H8.1 Safely evacuate the control room

Topic A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT
Sub-Topic A1.1 ESTABLISH AND MONITOR THE COMMUNICATIONS EQUIPMENT SERVICEABILITY

Performance Objectives	Conditions	Essential Knowledge
A1.1.1 Visual and/or aural indications are checked whilst making and receiving transmissions for indications of normal operation. A1.1.2 Documentation confirming equipment status is checked. A1.1.3 Malfunctions and defects are recorded and reported to the appropriate authority according to standing procedures.	**Procedures**: Unit specific.	**Local procedures** Equipment visual and aural indications. Watch log entries. Local standing procedures for reporting equipment faults. ***Underpinning knowledge*** Deriving information from NOTAMS.

Topic A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT
Sub-Topic A1.2 USE THE COMMUNICATIONS EQUIPMENT

Performance Objectives	Conditions	Essential Knowledge
A1.2.1 The readability of transmissions is assessed. A1.2.2 Standard speech technique is adhered to. A1.2.3 The appropriate frequency is selected and used. A1.2.4 Transmit and intercom switches are used in accordance with standard procedures. A1.2.5 The appropriate telephone is used. A1.2.6 Ancillary telephone equipment is used in accordance with standard procedures.	**Communication methods:** Radiotelephony, Telephone.	**Manual of Air Traffic Services Part 1 (Gen)** Communications technique. Speech technique. Test transmissions.

Topic A7 COMMUNICATE FROM AN AREA CONTROL UNIT
Sub-Topic A7.1 USE STANDARD PHRASEOLOGY APPLICABLE TO PROCEDURAL AREA CONTROL

Performance Objectives	Conditions	Essential Knowledge
A7.1.1 Standard phraseology is employed wherever possible in communications. A7.1.2 Composition of messages is concise and unambiguous. A7.1.3 Station identity is used correctly. A7.1.4 Acknowledgements and readbacks are obtained and verified when required. A7.1.5 Abbreviated phraseology is used when appropriate.	**Communication by:** Radiotelephone, Telephone. **Message Types:** Clearances, instructions, information.	**Manual of Air Traffic Services Part 1 (Gen)** Standard non-radar area control phraseology. Standard speech abbreviations. Radiotelephony callsigns. Communication with aircraft. Transfer of communications. Transmission of company messages.

Topic B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY
Sub-Topic B1.1 OBTAIN FLIGHT DATA INFORMATION

Performance Objectives	Conditions	Essential Knowledge
B1.1.1 Flight data information is extracted from all appropriate sources. B1.1.2 Relevant flight data is included at the earliest opportunity. B1.1.3 Flight data is checked to ensure completeness. B1.1.4 Any significant deficiency in flight data is rectified.	**Methods of Display:** Flight progress strips. Electronic data displays.	**Doc. 4444 Appendix 2** Content of full and abbreviated flight plans ATS service messages. **Doc. 7910** ICAO location indicators **Doc.8585** ICAO abbreviations **Manual of Air Traffic Services Part 1 (Gen)** Filing of flight plans Non standard routes Repetitive flight plan Exemptions and non standard flights **Local procedures** Flight plan processing

Topic B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY
Sub-Topic B1.2 INSERT FLIGHT DATA INTO THE APPROPRIATE PROFORMA

Performance Objectives	Conditions	Essential Knowledge
B1.2.1 Strip marking is legible and conforms to standard procedures. B1.2.2 Correct message entry formats are used. B1.2.3 Relevant flight data is included at the earliest opportunity.	**Methods of Display:** Flight progress strips. Electronic data displays.	**Doc. 7910** ICAO location indicators **Doc. 8585** ICAO abbreviations **Local procedures** Conventional strip marking

Topic B6 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR AREA CONTROL
Sub-Topic B6.1 CORRELATE FLIGHT DATA INTO A DISPLAY FOR PROCEDURAL AREA CONTROL

Performance Objectives	Conditions	Essential Knowledge
B6.1.1 All relevant traffic is included on the display. B6.1.2 Flight progress strips are organised in a manner that reflects the traffic situation in accordance with laid down procedures. B6.1.3 Electronic flight data displays are organised in accordance with laid down procedures.	**Methods of Display:** 'Multiple strip' flight progress displays. Electronic flight data displays.	**Local Procedures** Layout and use of flight progress strips. Layout of and use of electronic flight data displays.

Topic B6 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR AREA CONTROL
Sub-Topic B6.2 UPDATE THE PROCEDURAL AREA CONTROL FLIGHT DATA DISPLAY

Performance Objectives	Conditions	Essential Knowledge
B6.2.1 Information is extracted from all relevant sources. B6.2.2 The display is updated using information received. B6.2.3 Clearances and instructions passed to aircraft and other agencies are recorded. B6.2.4 Co-ordination agreed with other agencies is recorded. B6.2.5 The integrity of EDD performance and data is monitored.	**Sources of information:** Pilot reports. Information from other controllers. Information from other agencies. Computer derived information. **Methods of display:** Flight progress strips. Electronic data displays.	Aircraft performance. Time, speed, distance calculations. Effects of wind. **Local Procedures** Report formats. EDD display parameters.

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.1 OBTAIN METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.1.1 Current and forecast weather information is obtained before taking over watch. C1.1.2 Current and forecast weather information is monitored during the watch. C1.1.3 Weather information and reports from pilots are recorded.	**Types of briefing:** Self and Met office briefing. **Types of report:** Routine and special reports. Met Warnings. Reports from pilots.	**Manual of Air Traffic Services Part 1 (Gen)** Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (Gen)** Windshear. **Manual of Air Traffic Services Part 1 (Gen)** Meteorological services:- Briefing of controllers. Explanation of terms. Supply of information. Aerodrome meteorological reports (Routine) Aerodrome meteorological reports (Special) Coded aerodrome weather reports. SIGMET. Forecasts ***Underpinning knowledge*** Meteorology:- Wind, cloud, thunderstorms, microbursts, icing, line squalls. Pilot in flight reports (PIREPS) Low level charts. Significant weather charts.

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.2 INTERPRET METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.2.1 Significant weather changes are recognised C1.2.2 The relevance of meteorological information to individual flights or agencies is established.	**Significant weather:** Thunderstorms and Cumulonimbus clouds. Freezing rain, Moderate / Severe icing. Severe turbulence. Severe mountain waves. Low visibility.	**Manual of Air Traffic Services Part 1 (Gen)** Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (Gen)** Windshear. **Manual of Air Traffic Services Part 1 (Gen)** Meteorological services:- Briefing of controllers. Explanation of terms. Supply of information. Aerodrome meteorological reports (Routine) Aerodrome meteorological reports (Special) Coded aerodrome weather reports. SIGMET. Forecasts ***Underpinning knowledge*** Meteorology:- Wind, cloud, thunderstorms, microbursts, icing, line squalls. Pilot in flight reports (PIREPS) Low level charts. Significant weather charts.

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.3 DISSEMINATE METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.3.1 Aircraft are advised of significant changes in weather information. C1.3.2 Other agencies are advised of significant changes in weather information.	**Significant weather:** Thunderstorms and Cumulonimbus clouds. Freezing rain. Moderate / Severe icing. Severe turbulence. Severe mountain waves. Low visibility.	Effects of weather on flight operations. Meteorology:- Wind. Cloud, thunderstorms, icing, jetstreams, clear air turbulence, microburst, marked mountain waves, line squalls, solar radiation.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.1 OBTAIN AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.1.1 Aeronautical information is obtained before taking over watch. C2.1.2 Aeronautical information is monitored during the watch. C2.1.3 Pilots' requests for information are promptly and appropriately responded to. C2.1.4 Required information is obtained promptly from appropriate agencies.	**Sources of information:** AIP, NOTAMS, Local notices. Airspace restrictions.	**AIP** Content and use of AIP, NOTAM. Aeronautical information circulars. Restricted, prohibited airspace. Danger areas. Aeronautical charts.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.2 INTERPRET AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.2.1 Significant changes are recognised. C2.2.2 The relevance of aeronautical information to individual flights or agencies is established.	**Operating conditions:** Normal conditions. Unserviceable navigation aids. Restrictions at aerodromes. Airspace restrictions.	Communication and navigation systems, uses and limitations. Conditions affecting operations at aerodromes. Airspace restrictions.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.3 DISSEMINATE AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.3.1 Aircraft are advised of significant changes in aeronautical information. C2.3.2 Other agencies are advised of significant changes in aeronautical information.	**Operating conditions:** Normal conditions. Unserviceable navigation aids. Restrictions at aerodromes. Airspace restrictions.	**Manual of Air Traffic Services Part 1 (Gen)** Flight information service. ***Underpinning Knowledge*** Communication and navigation systems, uses and limitations. Conditions affecting operations at aerodromes. Airspace restrictions.

Topic G30 PROVIDE PROCEDURAL AREA CONTROL SERVICE
Sub-Topic G30.1 PROVIDE AREA CONTROL SERVICE WITHOUT THE USE OF SURVEILLANCE EQUIPMENT

Performance Objectives	Conditions	Essential Knowledge
G30.1.1 Flight data is assessed for actual and potential traffic conflicting. G30.1.2 A control strategy is developed to achieve separation with the least average delay to flights. G30.1.3 Non radar separation is applied. G30.1.4 The applied separation is the most appropriate taking into account safety and expedition. G30.1.5 Traffic is monitored to ensure that appropriate non-radar separation standards are not eroded. G30.1.6 Immediate action is taken to restore separation when it has been eroded. G30.1.7 Appropriate traffic information is passed without delay. G30.1.8 ATC procedures are adjusted to allow for the effects of weather on flight operations. G30.1.9 ATC procedures are adjusted to allow for the effect of degradation of essential navigational and communication services on flight operations.	**Airspace category :** A, B, C, D, E. **Types of separation:** Standard, reduced, increased, vertical, horizontal or lateral separation. **Types of Flight:** En route, joining, crossing and leaving controlled airspace.	Altimetry, Heights, Altitudes and Flight Levels. Aircraft performance. Effects of weather on flight operations. Use and limitations of navigation and communications aids. **Rules of the Air** General Flight Rules Instrument Flight Rules Visual Flight Rules **Manual of Air Traffic Services Part 1 (Gen)** Air traffic services Flight rules Separation standards (Excluding Radar & ADS), reduced and increased separation. Wake turbulence spacing. Application of separation. Actions in the event of loss of separation. Essential traffic information. Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (Gen)** Actions in the event of loss of separation, reporting action. **Manual of Air Traffic Services Part 1 (Gen)** All applicable current instructions.

Topic G30 PROVIDE PROCEDURAL AREA CONTROL SERVICE
Sub-Topic G30.2 PROVIDE ADVISORY CONTROL SERVICE WITHOUT THE USE OF SURVEILLANCE EQUIPMENT

Performance Objectives	Conditions	Essential Knowledge
G30.2.1 Flight data is assessed for actual and potential traffic conflicting. G30.2.2 A control strategy is developed to achieve separation with the least average delay to flights. G30.2.3 Non radar separation is applied. G30.2.4 The applied separation is the most appropriate taking into account safety and expedition. G30.2.5 Traffic is monitored to ensure that appropriate non-radar separation standards are not eroded. G30.2.6 Immediate action is taken to restore separation when it has been eroded. G30.2.7 Appropriate traffic information is passed without delay. G30.2.8 ATC procedures are adjusted to allow for the effects of weather on flight operations. G30.2.9 ATC procedures are adjusted to allow for the effect of degradation of essential navigational and communication services on flight operations.	**Airspace category :** F **Types of separation:** Standard, reduced, increased, vertical, horizontal or lateral separation. **Types of Flight:** En route, joining, crossing and leaving advisory airspace.	Altimetry, Heights, Altitudes and Flight Levels. Aircraft performance. Effects of weather on flight operations. Use and limitations of navigation and communications aids. **Rules of the Air** General Flight Rules Instrument Flight Rules Visual Flight Rules **Manual of Air Traffic Services Part 1 (Gen)** Air traffic services Flight rules Separation standards (Excluding Radar & ADS), reduced and increased separation. Wake turbulence spacing. Application of separation. Actions in the event of loss of separation. Essential traffic information. Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (Gen)** Actions in the event of loss of separation, reporting action. **Manual of Air Traffic Services Part 1 (Gen)** All applicable current instructions.

Topic G31 CO-ORDINATE WITH OTHER AGENCIES
Sub-Topic G31.1 CO-ORDINATE WITH ADJACENT AREA CONTROL OPERATIONAL POSITIONS

Performance Objectives	Conditions	Essential Knowledge
G31.1.1 Traffic situation is analysed to determine the need for co-ordination. G31.1.2 Appropriate co-ordination is initiated in sufficient time to permit negotiation and any agreement to be effected. G31.1.3 The effect of co-ordination requested by adjacent air traffic units is assessed. G21.1.4 An appropriate course of action is negotiated and agreed. G31.1.5 The agreed course of action is effected. G31.1.6 Flow management requirements are met.	**Control positions:** Adjacent operational positions. Adjacent centres.	Aircraft performance. **Manual of Air Traffic Services Part 1 (Gen)** Methods of co-ordination. Approval request. **Manual of Air Traffic Services Part 1 (Gen)** Approval request. Transfer point Standing agreements. Letters of agreement. Flow management procedures- Working principles; flexible use of airspace; free flight.

Topic G31 CO-ORDINATE WITH OTHER AGENCIES
Sub-Topic G31.2 CO-ORDINATE WITH ADJACENT AERODROMES

Performance Objectives	Conditions	Essential Knowledge
G31.2.1 Co-ordination for arriving aircraft is initiated in sufficient time to permit its implementation. G31.2.2 Releases are formulated to expedite arrivals whilst minimising disruption to the en route flow of traffic. G31.2.3 Departure clearances are formulated to expedite departures whilst minimising disruption to the en route flow of traffic. G31.2.4 Flow management requirements are met.	Single and multiple arrivals and departures.	Aircraft performance. **Manual of Air Traffic Services Part 1 (Gen)** Methods of co-ordination. **Manual of Air Traffic Services Part 1 (Gen)** Data on IFR traffic. Departing aircraft Releases to approach control. Radar release. Release subject your discretion. Release subject Flow management procedures - working principles; flexible use of airspace; free flight.

Topic G32 MANAGE DIVERSIONS AND HOLDING SITUATIONS
Sub-Topic G32.1 HANDLE DIVERSIONS

Performance Objectives	Conditions	Essential Knowledge
G32.1.1 Information necessary to facilitate the diversion is obtained. G32.1.2 Other relevant agencies are informed of the diversion. G32.1.3 Flight plan data is amended. G32.1.4 Diversion messages are issued when appropriate.	**Types of diversion:** Pilot initiated. ATC initiated. Company initiated.	Background on weather minima. Background on fuel management. **Manual of Air Traffic Services Part 1 (Gen)** Reasons for diversions. **Manual of Air Traffic Services Part 1 (Gen)** ATCC actions ***Underpinning knowledge*** **Manual of Air Traffic Services Part 1 (Gen)** Aerodrome actions

Topic G32 MANAGE DIVERSIONS AND HOLDING SITUATIONS
Sub-Topic G32.2 MANAGE HOLDING SITUATIONS

Performance Objectives	Conditions	Essential Knowledge
G32.2.1 Flight data is assessed to determine the need for holding. G32.2.2 Aircraft are informed of the need to hold in sufficient time. G22.2.3 Aircraft are advised of the expected delay. G32.2.4 Other relevant agencies are informed of the holding. G32.2.5 Flight plan data is amended.	**Holding:**- For traffic, weather, airfield closure.	Reasons for holding. **ICAO Doc. 8168** Holding Criteria. **Manual of Air Traffic Services Part 1 (Gen)** Onward clearance times. **Manual of Air Traffic Services Part 1 (Gen)** Expected approach time, including no ATC delay and delay not determined. Holding for weather improvement

Topic G33 WORK AS A TEAM MEMBER ON THE AREA CONTROL OPERATIONAL POSITION
Sub-Topic G33.1 ACCEPT RESPONSIBILITY FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G33.1.1 Compliance with licensing and medical requirements is confirmed. G23.1.2 Pre task briefing is carried out. G33.1.3 The current and projected traffic situation is obtained from the duty controller. G33.1.4 Current and projected workload is evaluated to determine whether the resources available are appropriate. G33.1.5 Action is taken to ensure resources are adequate for the task.	Initial arrival for duty period. Return following fatigue break.	**Aeronautical Information Circulars** Effects of drugs, medicines, fatigue, stress, medical conditions. **Air Navigation Order** Licensing requirements. Certification of competence. **Manual of Air Traffic Services Part 1 (Gen)** Actions before taking over an operational position.

Topic G33 WORK AS A TEAM MEMBER ON THE AREA CONTROL OPERATIONAL POSITION
Sub-Topic G33.2 MONITOR PERFORMANCE WHILST RESPONSIBLE FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G33.2.1 Assistance is called for in sufficient time to ensure personal capabilities are not exceeded. G33.2.2 Assistance provided to other team members is appropriate to the circumstances. G33.2.3 Current and projected workload is evaluated to determine whether the resources available are appropriate. G33.2.4 Action is taken to ensure resources are adequate for the task. G33.2.5 Rest/fatigue break requirements are complied with. G33.2.6 Concentration is maintained at an appropriate level for the task. G33.2.7 Indications of reduced or inadequate performance are acted upon in an appropriate manner.	**Traffic flow:** Light, Medium, Heavy.	**CAP 670 Part D Annex C** Scheme for regulation of the hours of civil ATCOs in the UK ***Underpinning knowledge*** Indications of stress. Indications of fatigue. Workload sharing.

Topic G33 WORK AS A TEAM MEMBER ON THE AREA CONTROL OPERATIONAL POSITION
Sub-Topic G33.3 TRANSFER RESPONSIBILITY FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G33.3.1 The current traffic situation is clearly communicated to the relieving controller. G33.3.2 The current and projected operating conditions are clearly communicated to the relieving controller. G33.3.3 Current and projected workload is evaluated to determine whether the resources available are appropriate. G33.3.4 Action is taken to ensure resources are adequate for the task.	Running handover.	**CAP 670 Part D Annex C** Scheme for regulation of the hours of civil ATCOs in the UK **Manual of Air Traffic Services Part 1 (Gen)** Actions when handing over an operational position.

Topic H6 MANAGE DEVELOPED EMERGENCIES FROM THE AREA CONTROL UNIT
Sub-Topic H6.1 MANAGE RADIO FAILURES

Performance Objectives	Conditions	Essential Knowledge
H6.1.1 Aircraft radio failure is recognised from available information. H6.1.2 Standard radio failure procedures are implemented.	**Types of failure:** Ground radio. Partial and complete aircraft radio. **Environment:** Non radar.	**Manual of Air Traffic Services Part 1 (Gen)** Pilot actions in the event of loss of communications. ATC procedures in the event of loss of communications. **Manual of Air Traffic Services Part 1 (Gen)** Reporting actions. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information.

Topic H6 MANAGE DEVELOPED EMERGENCIES FROM THE AREA CONTROL UNIT
Sub-Topic H6.2 MANAGE SITUATIONS ARISING FROM UNLAWFUL INTERFERENCE

Performance Objectives	Conditions	Essential Knowledge
H6.2.1 The possibility of unlawful interference is recognised from available information. H6.2.2 Standard procedures are adhered to when dealing with aircraft subject to unlawful interference.	Aircraft overflying, intending to land within area of jurisdiction. **Environment:** Non radar.	**Manual of Air Traffic Services Part 1 (Gen)** Indications of unlawful interference. Laid down handling procedures, National and International. Special communications procedures. Reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information.

Topic H6 MANAGE DEVELOPED EMERGENCIES FROM THE AREA CONTROL UNIT
Sub-Topic H6.3 MANAGE AIRCRAFT EMERGENCIES

Performance Objectives	Conditions	Essential Knowledge
H6.3.1 The possibility of an emergency situation existing is recognised from available information. H6.3.2 The nature of the emergency is determined. H6.3.3 The level of priority over other traffic is evaluated.	**Types of emergency:** Engine. Airframe. Fuel based. Medical. **Environment:** Non radar.	Aircraft performance and performance limitations. **Manual of Air Traffic Services Part 1 (Gen)** Recognising an emergency situation: handling aircraft emergencies, overdue aircraft, criteria and actions, phases of emergency. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information.

Topic H6 MANAGE DEVELOPED EMERGENCIES FROM THE AREA CONTROL UNIT
Sub-Topic H6.4 PROVIDE ALERTING SERVICE

Performance Objectives	Conditions	Essential Knowledge
H6.4.1 Available information is evaluated to determine the phase of emergency existing. H6.4.2 Actions follow laid down procedures appropriate to the phase of the emergency.	**Phases of emergency:** Uncertainty. Alert. Distress. **Environment:** Non radar.	**Manual of Air Traffic Services Part 1 (Gen)** Overdue aircraft, criteria and actions. Phases of emergency. **Manual of Air Traffic Services Part 1 (Gen)** Reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information.

Topic H8 MANAGE DOMESTIC CONTINGENCIES IN AN AREA CONTROL ROOM
Sub-Topic H8.1 SAFELY EVACUATE THE CONTROL ROOM

Performance Objectives	Conditions	Essential Knowledge
H8.1.1 Available information is evaluated to determine the need to evacuate the control room. H8.1.2 Traffic is disposed of in accordance with laid down procedures. H8.1.3 Evacuation is conducted in accordance with laid down procedures.	**Reasons for evacuation:** Fire and Bomb Warnings.	Local procedures for evacuation of control room.

2.7 Rating Requirements for ATCOs – Area Control Surveillance Rating

KEY ROLES AND TOPICS FOR AREA CONTROL SURVEILLANCE (RADAR ENDORSEMENT)

KEY ROLES	TOPICS
KEY ROLE A COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES	A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT A9 COMMUNICATE FROM AN AREA RADAR CONTROL UNIT
KEY ROLE B ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY	B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY B7 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR AREA RADAR CONTROL
KEY ROLE C CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS	C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
KEY ROLE E SET UP AND USE SURVEILLANCE RADAR EQUIPMENT	E1 SELECT AND SET UP SURVEILLANCE RADAR EQUIPMENT E2 USE PRIMARY RADAR E3 USE SECONDARY RADAR
KEY ROLE G MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC	G35 PROVIDE AN AREA CONTROL SERVICE WITH THE USE OF SURVEILLANCE RADAR G36 CO-ORDINATE WITH OTHER AGENCIES G37 MANAGE DIVERSIONS AND HOLDING SITUATIONS G38 WORK AS A TEAM MEMBER ON THE AREA RADAR CONTROL OPERATIONAL POSITION
KEY ROLE H MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES	H7 MANAGE DEVELOPED EMERGENCIES FROM THE RADAR EQUIPPED AREA CONTROL UNIT H8 MANAGE DOMESTIC CONTINGENCIES IN AN AREA CONTROL ROOM

TOPICS AND SUB-TOPICS FOR AREA CONTROL SURVEILLANCE (RADAR ENDORSEMENT)

KEY ROLE A	**COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES**
TOPICS	**SUB-TOPICS**
A1 Check and operate communications equipment	A1.1 Establish and monitor the communications equipment serviceability A1.2 Use the communications equipment
A9 Communicate from an area radar control unit	A9.1 Use standard phraseology applicable to area radar control
KEY ROLE B	**ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY**
TOPICS	**SUB-TOPICS**
B1 Correlate flight data into appropriate proforma for display	B1.1 Obtain flight data information B1.2 Insert flight data into the appropriate proforma
B7 Maintain a representative flight data display for area radar control	B7.1 Correlate flight data into a display for area radar control B7.2 Update the area radar control flight data display
KEY ROLE C	**CORRELATE INFORMATION USEFUL FOR THE SAFE AND EFFICIENT CONDUCT OF FLIGHTS**
TOPICS	**SUB-TOPICS**
C1 Obtain, interpret and disseminate meteorological information	C1.1 Obtain meteorological information C1.2 Interpret meteorological information C1.3 Disseminate meteorological information
C2 Obtain, interpret and disseminate aeronautical information	C2.1 Obtain aeronautical information C2.2 Interpret aeronautical information C2.3 Disseminate aeronautical information

KEY ROLE E	**SET UP AND USE SURVEILLANCE RADAR EQUIPMENT**
TOPICS	**SUB-TOPICS**
E1 Select and set up surveillance radar equipment	E1.1 Select and set up primary surveillance radar E1.2 Select and set up secondary surveillance radar
E2 Use primary radar	E2.1 Identify aircraft using primary radar E2.2 Use primary radar information
E3 Use secondary radar	E3.1 Identify aircraft using secondary radar E3.2 Validate and Verify secondary radar information E3.3 Use secondary radar information
KEY ROLE G	**MANAGE THE NON RADAR OPERATIONAL POSITION AND ITS TRAFFIC**
TOPICS	**SUB-TOPICS**
G35 Provide an area control service with the use of surveillance radar.	G35.1 Provide radar separation on controlled ATS routes G35.2 Provide radar separation on advisory routes and in advisory areas. G35.3 Provide flight information service with the use of surveillance radar
G36 Co-ordinate with other agencies	G36.1 Co-ordinate with adjacent area control positions G36.2 Co-ordinate with adjacent aerodromes
G37 Manage diversions and holding situations	G37.1 Handle diversions G37.2 Manage holding situations
G38 Work as a team member on the area radar control operational position	G38.1 Accept responsibility for the operational position G38.2 Monitor performance whilst responsible for the operational position G38.3 Transfer responsibility for the operational position

KEY ROLE H		**MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES**	
TOPICS		**SUB-TOPICS**	
H7	Manage developed emergencies from the radar equipped area control unit	H7.1 H7.2 H7.3 H7.4 H7.5	Manage radio failures Manage situations arising from unlawful interference Manage Aircraft Emergencies Provide Alerting Service Recover from a radar failure
H8	Manage domestic contingencies in an area control room.	H8.1	Safely evacuate the control room

Topic A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT
Sub-Topic A1.1 ESTABLISH AND MONITOR THE COMMUNICATIONS EQUIPMENT SERVICEABILITY

Performance Objectives	Conditions	Essential Knowledge
A1.1.1 Visual and/or aural indications are checked whilst making and receiving transmissions for indications of normal operation. A1.1.2 Documentation confirming equipment status is checked. A1.1.3 Malfunctions and defects are recorded and reported to the appropriate authority according to standing procedures.	**Procedures**: Unit specific.	**Local procedures** Equipment visual and aural indications. Watch log entries. Local standing procedures for reporting equipment faults. ***Underpinning knowledge*** Deriving information from NOTAMS.

Topic A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT
Sub-Topic A1.2 USE THE COMMUNICATIONS EQUIPMENT

Performance Objectives	Conditions	Essential Knowledge
A1.2.1 The readability of transmissions is assessed. A1.2.2 Standard speech technique is adhered to. A1.2.3 The appropriate frequency is selected and used. A1.2.4 Transmit and intercom switches are used in accordance with standard procedures. A1.2.5 The appropriate telephone is used. A1.2.6 Ancillary telephone equipment is used in accordance with standard procedures.	**Communication methods:** Radiotelephony, Telephone.	**Manual of Air Traffic Services Part 1 (Gen)** Communications technique. Speech technique. Test transmissions.

Topic A9 COMMUNICATE FROM AN AREA RADAR CONTROL UNIT
Sub-Topic A9.1 USE STANDARD PHRASEOLOGY APPLICABLE TO AREA RADAR CONTROL

Performance Objectives	Conditions	Essential Knowledge
A9.1.1 Standard phraseology is employed wherever possible in communications. A9.1.2 Composition of messages is concise and unambiguous. A9.1.3 Station identity is used correctly. A9.1.4 Acknowledgements and readbacks are obtained and verified when required. A9.1.5 Abbreviated phraseology is used when appropriate.	**Communication by:** Radiotelephone, Telephone**.** **Message Types:** Clearances, instructions, information.	**Manual of Air Traffic Services Part 1 (Gen)** Standard area radar control phraseology. Standard speech abbreviations. Radiotelephony callsigns. Communication with aircraft. Transfer of communications. Transmission of company messages.

Topic B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY
Sub-Topic B1.1 OBTAIN FLIGHT DATA INFORMATION

Performance Objectives	Conditions	Essential Knowledge
B1.1.1 Flight data information is extracted from all appropriate sources. B1.1.2 Relevant flight data is included at the earliest opportunity. B1.1.3 Flight data is checked to ensure completeness. B1.1.4 Any significant deficiency in flight data is rectified.	**Methods of Display:** Flight progress strips. Electronic data displays.	**Doc. 4444 Appendix 2** Content of full and abbreviated flight plans ATS service messages. **Doc. 7910** ICAO location indicators **Doc.8585** ICAO abbreviations **Manual of Air Traffic Services Part 1 (Gen)** Filing of flight plans Non standard routes Repetitive flight plan Exemptions and non standard flights **Local procedures** Flight plan processing

Topic B1 CORRELATE FLIGHT DATA INTO APPROPRIATE PROFORMA FOR DISPLAY
Sub-Topic B1.2 INSERT FLIGHT DATA INTO THE APPROPRIATE PROFORMA

Performance Objectives	Conditions	Essential Knowledge
B1.2.1 Strip marking is legible and conforms to standard procedures. B1.2.2 Correct message entry formats are used. B1.2.3 Relevant flight data is included at the earliest opportunity.	**Methods of Display:** Flight progress strips. Electronic data displays.	**Doc. 7910** ICAO location indicators. **Doc. 8585** ICAO abbreviations. **Local procedures** Conventional strip marking

Topic B7 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR AREA RADAR CONTROL
Sub-Topic B7.1 CORRELATE FLIGHT DATA INTO A DISPLAY FOR AREA RADAR CONTROL

Performance Objectives	Conditions	Essential Knowledge
B7.1.1 Strip marking is legible and conforms to standard procedures. B7.1.2 Correct message entry formats are used. B7.1.3 All relevant traffic is included on the display. B7.1.4 Flight progress strips are organised in a manner that reflects the traffic situation in accordance with laid down procedures. B7.1.5 Electronic flight data displays are organised in accordance with laid down procedures.	**Types of display:** 'Multiple strip' flight progress displays. Electronic flight data displays.	**Local Procedures** Layout and use of flight progress strips. Layout of and use of electronic flight data displays.

Topic B7 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR AREA RADAR CONTROL
Sub-Topic B7.2 UPDATE THE AREA RADAR CONTROL FLIGHT DATA DISPLAY

Performance Objectives	Conditions	Essential Knowledge
B7.2.1 Information is extracted from all relevant sources. B7.2.2 The display is updated using information received. B7.2.3 Clearances and instructions passed to aircraft and other agencies are recorded. B7.2.4 Co-ordination agreed with other agencies is recorded. B7.2.5 The integrity of EDD performance and data is monitored.	**Sources of information:** Pilot reports. Information from other controllers. Information from other agencies. Computer derived information. **Methods of display:** Flight progress strips and electronic data displays.	Aircraft performance. Time, speed, and distance calculations. Effects of wind. Report formats. EDD display parameters.

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.1 OBTAIN METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.1.1 Current and forecast weather information is obtained before taking over watch. C1.1.2 Current and forecast weather information is monitored during the watch. C1.1.3 Weather information and reports from pilots are recorded.	**Types of briefing:** Self and Met office briefing. **Types of report:** Routine and special reports. Met Warnings. Reports from pilots.	**Manual of Air Traffic Services Part 1 (Gen)** Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (Gen)** Windshear. **Manual of Air Traffic Services Part 1 (Gen)** Meteorological services:- Briefing of controllers. Explanation of terms. Supply of information. Aerodrome meteorological reports (Routine) Aerodrome meteorological reports (Special) Coded aerodrome weather reports. SIGMET. Forecasts ***Underpinning knowledge*** Meteorology:- Wind, cloud, thunderstorms, microbursts, icing, line squalls. Pilot in flight reports (PIREPS) Low level charts. Significant weather charts.

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.2 INTERPRET METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.2.1 Significant weather changes are recognised C1.2.2 The relevance of meteorological information to individual flights or agencies is established.	**Significant weather:** Thunderstorms and Cumulonimbus clouds. Freezing rain, Moderate / Severe icing. Severe turbulence. Severe mountain waves. Low visibility.	**Manual of Air Traffic Services Part 1 (Gen)** Altimeter setting and vertical reference. **Manual of Air Traffic Services Part 1 (Gen)** Windshear. **Manual of Air Traffic Services Part 1 (Gen)** Meteorological services:- Briefing of controllers. Explanation of terms. Supply of information. Aerodrome meteorological reports (Routine) Aerodrome meteorological reports (Special) Coded aerodrome weather reports. SIGMET. Forecasts ***Underpinning knowledge*** Meteorology:- Wind, cloud, thunderstorms, microbursts, icing, line squalls. Pilot in flight reports (PIREPS) Low level charts. Significant weather charts.

Topic C1 OBTAIN, INTERPRET AND DISSEMINATE METEOROLOGICAL INFORMATION
Sub-Topic C1.3 DISSEMINATE METEOROLOGICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C1.3.1 Aircraft are advised of significant changes in weather information. C1.3.2 Other agencies are advised of significant changes in weather information.	**Significant weather:** Thunderstorms and Cumulonimbus clouds. Freezing rain. Moderate / Severe icing. Severe turbulence. Severe mountain waves. Low visibility.	Effects of weather on flight operations. Meteorology:- Wind. Cloud, thunderstorms, icing, jetstreams, clear air turbulence, microburst, marked mountain waves, line squalls, solar radiation.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.1 OBTAIN AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.1.1 Aeronautical information is obtained before taking over watch. C2.1.2 Aeronautical information is monitored during the watch. C2.1.3 Pilots requests for information are promptly and appropriately responded to. C2.1.4 Required information is obtained promptly from appropriate agencies.	**Sources of information:** AIP, NOTAMS, Local notices. Airspace restrictions.	**AIP** Content and use of AIP, NOTAM. Restricted, prohibited airspace. Danger areas. Aeronautical charts. Aeronautical information circulars.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.2 INTERPRET AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.2.1 Significant changes are recognised. C2.2.2 The relevance of aeronautical information to individual flights or agencies is established.	**Operating conditions:** Normal conditions. Unserviceable navigation aids. Restrictions at aerodromes. Airspace restrictions.	Communication and navigation systems, uses and limitations. Conditions affecting operations at aerodromes. Airspace restrictions.

Topic C2 OBTAIN, INTERPRET AND DISSEMINATE AERONAUTICAL INFORMATION
Sub-Topic C2.3 DISSEMINATE AERONAUTICAL INFORMATION

Performance Objectives	Conditions	Essential Knowledge
C2.3.1 Aircraft are advised of significant changes in aeronautical information. C2.3.2 Other agencies are advised of significant changes in aeronautical information.	**Operating conditions:** Normal conditions. Unserviceable navigation aids. Restrictions at aerodromes. Airspace restrictions.	**Manual of Air Traffic Services Part 1 (Gen)** Flight information service. ***Underpinning knowledge*** Communication and navigation systems, uses and limitations. Conditions affecting operations at aerodromes. Airspace restrictions.

Topic E1 SELECT AND SET UP SURVEILLANCE RADAR EQUIPMENT
Sub-Topic E1.1 SELECT AND SET UP PRIMARY SURVEILLANCE RADAR

Performance Objectives	Conditions	Essential Knowledge
E1.1.1 Most suitable available surveillance radar is selected. E1.1.2 Controls are adjusted to provide best available performance. E1.1.3 Accuracy of radar is checked against laid down criteria. E1.1.4 Deficiencies are notified in accordance with local procedures.	**Operating conditions:** Normal atmospheric and anomalous propagation conditions. Weather and ground clutter. **Types of Radar:** Analogue and processed radar.	Primary radar principles of operation. Limitations of primary radar. Radar accuracy and definition. Operational radar coverage. The use and effects of controls available to the controller. The use and effects of suppressers. Processing and display of primary radar data.

Topic E1 SELECT AND SET UP SURVEILLANCE RADAR EQUIPMENT
Sub-Topic E1.2 SELECT AND SET UP SECONDARY SURVEILLANCE RADAR

Performance Objectives	Conditions	Essential Knowledge
E1.2.1 Most suitable available surveillance radar is selected. E1.2.2 Controls are adjusted to provide best available performance. E1.2.3 Accuracy of radar is checked against laid down criteria. E1.2.4 Deficiencies are notified in accordance with local procedures.	**Secondary Radar Modes:** Modes A, C and S. **Types of Radar display:** Analogue and processed radar.	Secondary radar principles of operation. Limitations of secondary radar. Processing and display of secondary radar data.

Topic E2 USE PRIMARY RADAR
Sub-Topic E2.1 IDENTIFY AIRCRAFT USING PRIMARY RADAR

Performance Objectives	Conditions	Essential Knowledge
E2.1.1 Probable target is located using available information. E2.1.2 Identification is carried out using standard methods. E2.1.3 Aircraft are informed, where necessary, of identification	**Types of Radar display:** Analogue and processed displays. **Special conditions:** Mis-identification.	**Manual of Air Traffic Services Part 1 (Gen)** Radar Operation:- Identification using primary radar. Summary identification and position information.

Topic E2 USE PRIMARY RADAR
Sub-Topic E2.2 USE PRIMARY RADAR INFORMATION

Performance Objectives	Conditions	Essential Knowledge
E2.2.1 Tracks and speeds are accurately assessed using displayed information. E2.2.2 Vectors are provided to make good a track or reach a specified location. E2.2.3 Aircraft are informed, where necessary, of their position, other traffic and significant displayed weather.	**Atmospheric conditions:** Cyclones, anticyclones and zero wind conditions. **Traffic speeds:** Low and high speed traffic.	Indicated airspeed, true airspeed and ground speed. Heading and track. Effects of wind. **Manual of Air Traffic Services Part 1 (Gen)** Radar operation:- Position information. Vectoring. Terrain clearance. Unknown aircraft. Traffic information.

Topic E3 USE SECONDARY RADAR
Sub-Topic E3.1 IDENTIFY AIRCRAFT USING SECONDARY RADAR

Performance Objectives	Conditions	Essential Knowledge
E3.1.1 Probable target is located using available information. E3.1.2 Identification is carried out using standard methods. E3.1.3 Aircraft are informed, where necessary, of identification.	**Types of Radar display:** Analogue and processed displays. **Special conditions:** Mis-identification.	**Manual of Air Traffic Services Part 1 (Gen)** Identification using secondary radar. Summary identification and position information.

Topic E3 USE SECONDARY RADAR
Sub-Topic E3.2 VALIDATE AND VERIFY SECONDARY RADAR INFORMATION

Performance Objectives	Conditions	Essential Knowledge
E3.2.1 Mode A information is validated using laid down procedures. E3.2.2 Action is taken to rectify incorrect Mode A information in accordance with laid down procedures. E3.2.3 Mode C information is verified using laid down procedures. E3.2.4 Action is taken to rectify incorrect mode C indications in accordance with laid down procedures. E3.2.5 Mode S information is confirmed in accordance with laid down procedures. E3.2.6 Action is taken to minimise the effects of incorrect indications.	**Received indications:** Correct and incorrect, correctable and non-correctable indications. Special purpose codes Code Callsign conversion failure.	Altimetry, Heights, Altitudes and Flight Levels. **AIP** Allocation of SSR codes. Originating region code allocation method. **Manual of Air Traffic Services Part 1 (Gen)** Methods of validating mode A. Actions in the event of incorrect mode A indications. Methods of verifying mode C. Actions in the event of incorrect mode C indications. Procedures for confirming the accuracy of Mode S information.

Topic E3 USE SECONDARY RADAR
Sub-Topic E3.3 USE SECONDARY RADAR INFORMATION

Performance Objectives	Conditions	Essential Knowledge
E3.3.1 Tracks and speeds are accurately assessed using displayed information. E3.3.2 Vectors are provided to make good a track or reach a specified location. E3.3.3 Aircraft are informed, where necessary, of their position, and other traffic.	**Atmospheric conditions:** Cyclones, anticyclones and zero wind conditions. **Traffic speeds:** Low and high speed traffic.	Indicated airspeed, true airspeed and ground speed. Heading and track. Effects of wind. **Manual of Air Traffic Services Part 1 (Gen)** Radar operation:- Position information. Vectoring. Terrain clearance. Unknown aircraft. Traffic information.

Topic G35 PROVIDE AN AREA CONTROL SERVICE WITH THE USE OF SURVEILLANCE RADAR
Sub-Topic G35.1 PROVIDE AN AREA RADAR SERVICE ON CONTROLLED ATS ROUTES

Performance Objectives	Conditions	Essential Knowledge
G35.1.1 Flight data is assessed for actual and potential traffic conflicting. G35.1.2 Aircraft are identified on radar. G35.1.3 A control strategy is developed to achieve separation with the least average delay to flights. G35.1.4 Appropriate radar separation is achieved. G35.1.5 The radar is monitored to ensure that separation is not eroded. G35.1.6 The applied separation is the most appropriate taking into account safety and expedition. G35.1.7 Immediate action is taken to restore separation when it has been eroded. G35.1.8 Information on unknown traffic considered to constitute a hazard is passed promptly to participating aircraft. G35.1.9 Appropriate traffic information is passed without delay. G35.1.10 Radar procedures are adjusted to allow for the effects of weather on flight operations.	**Airspace category:** A, B, C, D. Airways and control areas excluding terminal control areas. **Types of radar:** Primary, Secondary, Analogue, Processed Radar. **Control techniques:** Radar Monitoring, Vectoring, Speed Control. **Types of flight:** Aircraft en route, joining, crossing and leaving controlled airspace.	Altimetry, Heights, Altitudes and Flight Levels. Radar principles of operation and limitations. Aircraft performance. Effects of weather on flight operations. Use and limitations of navigation and communications aids. Vectoring techniques. Speed control techniques. **Rules of the Air** General Flight Rules Instrument Flight Rules Visual Flight Rules **Manual of Air Traffic Services Part 1 (Gen)** Air traffic services:- Introduction. Air traffic service Air traffic control service Radar operation:- Radar services. Penetration by independent units. Identification using primary radar. Identification using secondary radar. Transfer of identity. Lost identity. Non radar separation standards applicable to a radar environment. Radar separation standards. Wake turbulence spacing.

Performance Objectives	Conditions	Essential Knowledge
G35.1.11Radar procedures are adjusted to allow for the effect of degradation of essential navigational and communication services on flight operations.		Traffic information. Unknown traffic information. Actions in the event of loss of separation. Weather avoidance by pilots. Weather avoidance by radar controllers. **Manual of Air Traffic Services Part 1 (Gen)** Actions in the event of loss of separation, reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Radar separation **Manual of Air Traffic Services Part 1 (Gen)** All applicable current instructions. Ground based collision avoidance systems.

Topic G35 PROVIDE AN AREA CONTROL SERVICE WITH THE USE OF SURVEILLANCE RADAR
Sub-Topic G35.2 PROVIDE RADAR SEPARATION ON ADVISORY ROUTES AND IN ADVISORY AREAS

Performance Objectives	Conditions	Essential Knowledge
G35.21.1 Flight data is assessed for actual and potential traffic conflicting. G35.2.2 Aircraft are identified on radar. G35.2.3 A control strategy is developed to achieve separation with the least average delay to flights. G35.2.4 Appropriate radar separation is achieved. G35.2.5 The radar is monitored to ensure that separation is not eroded. G35.2.6 The applied separation is the most appropriate taking into account safety and expedition. G35.2.7 Immediate action is taken to restore separation when it has been eroded. G35.2.8 Information on unknown traffic considered to constitute a hazard is passed promptly to participating aircraft. G35.2.9 Avoiding action, where necessary, is prompt and effective. G35.2.10 Appropriate traffic information is passed without delay. G35.2.11 Radar procedures are adjusted to allow for the effects of weather on flight operations.	**Airspace category:** F. Advisory routes and advisory areas. **Types of radar:** Primary, Secondary, Analogue, Processed Radar. **Control techniques:** Radar Monitoring, Vectoring, Speed Control. **Types of flight:** Aircraft en route, joining, crossing and leaving advisory airspace.	Altimetry, Heights, Altitudes and Flight Levels. Radar principles of operation and limitations. Aircraft performance. Vectoring techniques. Speed control techniques. Effects of weather on flight operations. Use and limitations of navigation and communications aids. **Rules of the Air** General Flight Rules Instrument Flight Rules Visual Flight Rules **Manual of Air Traffic Services Part 1 (Gen)** Methods of Identification. Non radar separation standards applicable to a radar environment. Radar separation standards. Wake turbulence spacing. Actions in the event of loss of separation. Traffic information. Unknown traffic information. Weather avoidance by pilots. Weather avoidance by radar controllers **Manual of Air Traffic Services Part 1 (Gen)** Actions in the event of loss of separation; reporting action.

Performance Objectives	Conditions	Essential Knowledge
G35.2.12Radar procedures are adjusted to allow for the effect of degradation of essential navigational and communication services on flight operations.		**Manual of Air Traffic Services Part 1 (Gen)** Radar separation **Manual of Air Traffic Services Part 1 (Gen)** All applicable current instructions. Ground based collision avoidance systems.

Topic G35 PROVIDE AREA CONTROL SERVICE WITH THE USE OF SURVEILLANCE RADAR
Sub-Topic G35.3 PROVIDE FLIGHT INFORMATION SERVICE WITH THE USE OF SURVEILLANCE RADAR

Performance Objectives	Conditions	Essential Knowledge
G35.3.1 Flight data is assessed for actual and potential traffic conflicting. G35.3.2 Aircraft are identified on radar. G11.3.3 The radar is monitored to provide information on displayed weather. G35.3.4 The radar is monitored to provide information on observed traffic. G35.3.5 Information on observed weather is passed to pilots and appropriate agencies. G35.3.6 Appropriate traffic information is passed without delay. G35.3.7 Radar procedures are adjusted to allow for the effects of weather on flight operations. G35.3.8 Radar procedures are adjusted to allow for the effect of degradation of essential navigational and communication services on flight operations.	**Airspace category:** F, G **Types of Radar:** Primary, Secondary, Analogue, Processed Radar. **Control techniques:** Radar Monitoring, Vectoring, Speed Control. **Types of flight:** Aircraft operating outside, joining and leaving controlled airspace and advisory airspace.	Altimetry, Heights, Altitudes and Flight Levels. Radar principles of operation and limitations. Aircraft performance. Effects of weather on flight operations. Use and limitations of navigation and communications aids. Vectoring techniques. Speed control techniques. **Rules of the Air** General Flight Rules Instrument Flight Rules Visual Flight Rules **Manual of Air Traffic Services Part 1 (Gen)** Air traffic services:- Introduction. Air traffic service:- Radar information service Radar operation:- Radar services. Provision of services. Radar information service. Identification using primary radar. Identification using secondary radar. Transfer of identity. Lost Identity. Traffic information. Unknown traffic information. Weather avoidance by pilots. Weather avoidance by radar controllers.

Topic G36 CO-ORDINATE WITH OTHER AGENCIES
Sub-Topic G36.1 CO-ORDINATE WITH ADJACENT AREA CONTROL OPERATIONAL POSITIONS

Performance Objectives	Conditions	Essential Knowledge
G36.1.1 Traffic situation is analysed to determine the need for co-ordination. G36.1.2 Appropriate co-ordination is initiated in sufficient time to permit negotiation and any agreement to be effected. G36.1.3 The effect of co-ordination requested by adjacent air traffic units is assessed. G36.1.4 An appropriate course of action is negotiated and agreed. G36.1.5 The agreed course of action is effected. G36.1.6 Flow management requirements are met.	**Airspace category:** A, B, C, D, F. Airways and control areas excluding terminal control areas. Advisory routes and advisory areas. **Types of radar:** Primary, Secondary, Analogue, Processed Radar. **Control positions:** Adjacent operational positions. Adjacent centres.	Aircraft performance. **Manual of Air Traffic Services Part 1 (Gen)** Methods of co-ordination. Approval request. Transfer of identity. Radar handover. **Manual of Air Traffic Services Part 1 (Gen)** Approval requests. Transfer point. Standing agreements. Letters of agreement. Flow management procedures.

Topic G36 CO-ORDINATE WITH OTHER AGENCIES
Sub-Topic G36.2 CO-ORDINATE WITH ADJACENT AERODROMES

Performance Objectives	Conditions	Essential Knowledge
G36.2.1 Co-ordination for arriving aircraft is initiated in sufficient time to permit its implementation. G36.2.2 Releases are formulated to expedite arrivals whilst minimising disruption to the en route flow of traffic. G36.2.3 Departure clearances are formulated to expedite departures whilst minimising disruption to the en route flow of traffic. G36.2.4 Flow management requirements are met.	**Airspace category:** A, B, C, D, E, F. Airways and control areas excluding terminal control areas. Advisory routes and areas. **Types of radar:** Primary, Secondary, Analogue, Processed Radar. **Control techniques:** Radar Monitoring, Vectoring, Speed Control. **Conditions:** Single and multiple arrivals and departures.	Aircraft performance. **Manual of Air Traffic Services Part 1 (Gen)** Methods of co-ordination. Transfer of identity. Radar handover. **Manual of Air Traffic Services Part 1 (Gen)** Data on IFR traffic. Departing aircraft Releases to approach control. Radar release. Release subject your discretion. Release subject. Flow management procedures.

Topic G37 MANAGE DIVERSIONS AND HOLDING SITUATIONS
Sub-Topic G37.1 HANDLE DIVERSIONS

Performance Objectives	Conditions	Essential Knowledge
G37.1.1 Information necessary to facilitate the diversion is obtained. G37.1.2 Other relevant agencies are informed of the diversion. G37.1.3 Flight plan data is amended. G37.1.4 Diversion messages are issued when appropriate.	**Airspace category:** A, B, C, D, F. Airways and control areas excluding terminal control areas. Advisory routes and areas. **Types of radar:** Primary, Secondary, Analogue, Processed Radar. **Types of diversion:** Pilot initiated; ATC initiated; Company initiated.	**Manual of Air Traffic Services Part 1 (Gen)** Reasons for diversions. **Manual of Air Traffic Services Part 1 (Gen)** Aerodrome actions. **Manual of Air Traffic Services Part 1 (Gen)** ATCC actions. Background on weather minima. Background on fuel management.

Topic G37 MANAGE DIVERSIONS AND HOLDING SITUATIONS
Sub-Topic G37.2 MANAGE HOLDING SITUATIONS

Performance Objectives	Conditions	Essential Knowledge
G37.2.1 Flight data is assessed to determine the need for holding. G37.2.2 Aircraft are informed of the need to hold in sufficient time. G37.2.3 Aircraft are advised of the expected delay. G37.2.4 Other relevant agencies are informed of the holding. G37.2.5 Flight plan data is amended. G37.2.6 Identity is re-established when aircraft leave the holding pattern.	**Airspace category:** A, B, C, D, F. Airways and control areas excluding terminal control areas. Advisory routes and areas. **Types of radar:** Primary, Secondary, Analogue, Processed Radar. **Holding:** For traffic, weather, airfield closure.	Reasons for holding. **ICAO Doc. 8168** Holding Criteria. **Manual of Air Traffic Services Part 1 (Gen)** Onward clearance times. **Manual of Air Traffic Services Part 1 (Gen)** Expected approach time. Holding for weather improvement

Topic G38 WORK AS A TEAM MEMBER ON THE AREA RADAR OPERATIONAL POSITION

Sub-Topic G38.1 ACCEPT RESPONSIBILITY FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G38.1.1 Compliance with licensing and medical requirements is confirmed. G38.1.2 Pre task briefing is carried out. G38.1.3 The current and projected traffic situation is obtained from the duty controller. G38.1.4 Current and projected workload is evaluated to determine whether the resources available are appropriate. G38.1.5 Action is taken to ensure resources are adequate for the task.	Initial arrival for duty period. Return following fatigue break.	**Aeronautical Information Circulars** Effects of drugs, medicines, fatigue, stress, medical conditions. **Air Navigation Order** Licensing requirements. Certification of competence. **Manual of Air Traffic Services Part 1 (Gen)** Actions before taking over an operational position.

Topic G38 WORK AS A TEAM MEMBER ON THE AREA RADAR OPERATIONAL POSITION
Sub-Topic G38.2 MONITOR PERFORMANCE WHILST RESPONSIBLE FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G38.2.1 Assistance is called for in sufficient time to ensure personal capabilities are not exceeded. G38.2.2 Assistance provided to other team members is appropriate to the circumstances. G38.2.3 Current and projected workload is evaluated to determine whether the resources available are appropriate. G38.2.4 Action is taken to ensure resources are adequate for the task. G38.2.5 Rest/fatigue break requirements are complied with. G38.2.6 Concentration is maintained at an appropriate level for the task. G38.2.7 Indications of reduced or inadequate performance are acted upon in an appropriate manner.	**Traffic flow:** Light, Medium, Heavy.	**CAP 670 Part D Annex C** Scheme for regulation of the hours of civil ATCOs in the UK. ***Underpinning knowledge*** Indications of stress. Indications of fatigue. Workload sharing.

Topic G38 WORK AS A TEAM MEMBER ON THE AREA RADAR OPERATIONAL POSITION
Sub-Topic G38.3 TRANSFER RESPONSIBILITY FOR THE OPERATIONAL POSITION

Performance Objectives	Conditions	Essential Knowledge
G38.3.1 The current traffic situation is clearly communicated to the relieving controller. G38.3.2 The current and projected operating conditions are clearly communicated to the relieving controller. G38.3.3 Current and projected workload is evaluated to determine whether the resources available are appropriate. G38.3.4 Action is taken to ensure resources are adequate for the task.	Running handover.	**CAP 670 Part D Annex C** Scheme for regulation of the hours of civil ATCOs in the UK. **Manual of Air Traffic Services Part 1 (Gen)** Actions when handing over an operational position.

Topic H7 MANAGE DEVELOPED EMERGENCIES FROM THE RADAR EQUIPPED AREA CONTROL UNIT
Sub-Topic H7.1 MANAGE RADIO FAILURES

Performance Objectives	Conditions	Essential Knowledge
H7.1.1 Aircraft radio failure is recognised from available information. H7.1.2 Standard radio failure procedures are implemented.	**Types of failure:** Ground radio. Partial and complete aircraft radio. **Environment:** Radar.	**Manual of Air Traffic Services Part 1 (Gen)** Pilot actions in the event of loss of communications. ATC procedures in the event of loss of communications. **Manual of Air Traffic Services Part 1 (Gen)** Reporting actions. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information

Topic H7 MANAGE DEVELOPED EMERGENCIES FROM THE RADAR EQUIPPED AREA CONTROL UNIT
Sub-Topic H7.2 MANAGE SITUATIONS ARISING FROM UNLAWFUL INTERFERENCE

Performance Objectives	Conditions	Essential Knowledge
H7.2.1 The possibility of unlawful interference is recognised from available information. H7.2.2 Standard procedures are adhered to when dealing with aircraft subject to unlawful interference.	Aircraft overflying, intending to land within area of jurisdiction. **Environment:** Radar.	**Manual of Air Traffic Services Part 1 (Gen)** Indications of unlawful interference. Laid down handling procedures, National and International. Special communications procedures. Reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information.

Topic H7 MANAGE DEVELOPED EMERGENCIES FROM THE RADAR EQUIPPED AREA CONTROL UNIT
Sub-Topic H7.3 MANAGE AIRCRAFT EMERGENCIES

Performance Objectives	Conditions	Essential Knowledge
H7.3.1 The possibility of an emergency situation existing is recognised from available information. H7.3.2 The nature of the emergency is determined. H7.3.3 The level of priority over other traffic is evaluated	**Types of emergency:** Engine. Airframe. Fuel based. Medical. **Environment:** Radar.	Aircraft performance and performance limitations. **Manual of Air Traffic Services Part 1 (Gen)** Recognising an emergency situation: handling aircraft emergencies; overdue aircraft, criteria and actions; phases of emergency. **Manual of Air Traffic Services Part 1 (Gen)** Reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information.

Topic H7 MANAGE DEVELOPED EMERGENCIES FROM THE RADAR EQUIPPED AREA CONTROL UNIT
Sub-Topic H7.4 PROVIDE ALERTING SERVICE

Performance Objectives	Conditions	Essential Knowledge
H7.4.1 Available information is evaluated to determine the phase of emergency existing. H7.4.2 Actions follow laid down procedures appropriate to the phase of the emergency.	**Phases of emergency:** Uncertainty. Alert. Distress. **Environment:** Radar.	**Manual of Air Traffic Services Part 1 (Gen)** Recognising an emergency situation: handling aircraft emergencies; overdue aircraft, criteria and actions; phases of emergency. **Manual of Air Traffic Services Part 1 (Gen)** Reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan info.

Topic H7 MANAGE DEVELOPED EMERGENCIES FROM THE RADAR EQUIPPED AREA CONTROL UNIT

Sub-Topic H7.5 RECOVER FROM A RADAR FAILURE

Performance Objectives	Conditions	Essential Knowledge
H7.5.1 Aircraft are informed of the failure. H7.5.2 Flight data is assessed for actual and potential traffic conflicting. H7.5.3 A control strategy is developed to achieve separation with the least average delay to flights. H7.5.4 Immediate action is taken to achieve non radar separation. H7.5.5 Appropriate traffic information is passed without delay. H7.5.6 The applied separation is the most appropriate taking into account safety and expedition. H7.5.7 Appropriate traffic flow restrictions are applied. H7.5.8 Aircraft are identified on resumption of radar service. H7.5.9 Aircraft are informed of the resumption of radar service.	**Airspace category:** A, B, C, D, F. Airways and control areas excluding terminal control areas. Advisory routes and advisory areas. **Operating environment** Total radar **Types of flight:** Aircraft en route, joining, crossing and leaving controlled or advisory airspace.	Altimetry, Heights, Altitudes and Flight Levels. Effects of weather on flight operations. Use and limitations of navigation and communications aids. **Manual of Air Traffic Services Part 1 (Gen)** Non radar separation standards. Radar separation standards. Wake turbulence spacing. Aircraft performance. Actions when radar service is restored. Reporting action.

Topic H8 MANAGE DOMESTIC CONTINGENCIES IN AN AREA CONTROL ROOM
Sub-Topic H8.1 SAFELY EVACUATE THE AREA CONTROL ROOM

Performance Objectives	Conditions	Essential Knowledge
H8.1.1 Available information is evaluated to determine the need to evacuate the control room. H8.1.2 Traffic is disposed of in accordance with laid down procedures. H8.1.3 Evacuation is conducted in accordance with laid down procedures.	**Reasons for evacuation:** Fire and Bomb Warnings.	**Local procedures** Evacuation of control room.

2.8 Rating Requirements for ATCOs – Terminal Control Endorsement

Application of this Endorsement

This endorsement may be applied to those Approach Surveillance or Area Surveillance ratings that include a Radar Endorsement.

These requirements identify only those areas of specialist competence, which differ from the basic rating requirements. The requirements are therefore additional to those for the rating and radar endorsement to which the Terminal Control endorsement is to be applied

KEY ROLES AND TOPICS FOR THE TERMINAL RADAR CONTROL RATING ENDORSEMENT

KEY ROLES	TOPICS
KEY ROLE A COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES	A1 CHECK AND OPERATE COMMUNICATIONS EQUIPMENT A6 COMMUNICATE FROM A TERMINAL RADAR CONTROL UNIT
KEY ROLE B ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY	B1 ESTABLISH A REPRESENTATIVE FLIGHT DATA DISPLAY B8 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR TERMINAL CONTROL
KEY ROLE G MANAGE THE OPERATIONAL POSITION AND ITS TRAFFIC	G40 PROVIDE TERMINAL RADAR CONTROL SERVICE G41 CO-ORDINATE WITH OTHER AGENCIES G42 MANAGE DIVERSIONS AND HOLDING SITUATIONS G43 WORK AS A TEAM MEMBER ON THE TERMINAL CONTROL OPERATIONAL POSITION
KEY ROLE H MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES	H9 MANAGE DEVELOPED EMERGENCIES FROM THE TERMINAL CONTROL UNIT H10 MANAGE DOMESTIC CONTINGENCIES IN THE TERMINAL CONTROL ROOM

TOPICS AND SUB-TOPICS FOR THE TERMINAL RADAR CONTROL RATING ENDORSEMENT

KEY ROLE A	**COMMUNICATE WITH AIRCRAFT AND OTHER AGENCIES**
TOPICS	**SUB-TOPICS**
A6 Communicate from terminal radar control unit.	A6.1 Use standard phraseology applicable to terminal radar control
KEY ROLE B	**ESTABLISH AND UPDATE A REPRESENTATIVE FLIGHT DATA DISPLAY**
TOPICS	**SUB-TOPICS**
B8 Maintain a representative flight data display	B8.1 Correlate flight data into a display for terminal control service B8.2 Update the terminal radar control service flight data display
KEY ROLE G	**MANAGE THE TERMINAL AREA RADAR OPERATIONAL POSITION AND ITS TRAFFIC**
TOPICS	**SUB-TOPICS**
G40 Provide terminal radar control service	G40.1 Provide radar control service in a terminal control area and adjacent sectors
G41 Co-ordinate with other agencies	G41.1 Co-ordinate with adjacent area control operational positions G41.2 Co-ordinate with adjacent aerodromes
G42 Manage diversions and holding situations	G42.1 Handle diversions G42.2 Manage holding situations
G43 Work as a team member on the terminal control operational position	G43.1 Accept responsibility for the operational position G43.2 Monitor performance whilst responsible for the operational position G43.3 Transfer responsibility for the operational position

KEY ROLE H	**MANAGE EMERGENCIES AND DOMESTIC CONTINGENCIES**
TOPICS	**SUB-TOPICS**
H9 Manage developed emergencies from the terminal control unit	H9.1 Manage radio failures H9.2 Manage situations arising from unlawful interference H9.3 Manage Aircraft Emergencies H9.4 Provide Alerting Service H9.5 Recover from a radar failure
H10 Manage domestic contingencies in the terminal control room.	H10.1 Safely evacuate the control room

Topic A6 COMMUNICATE FROM A TERMINAL RADAR CONTROL UNIT
Sub-topic A6.1 USE STANDARD PHRASEOLOGY APPLICABLE TO TERMINAL AREA RADAR CONTROL

Performance Objective	Conditions	Essential Knowledge
A6.1.1 Standard phraseology is employed wherever possible in communications. A6.1.2 Composition of messages is concise and unambiguous. A6.1.3 Station identity is used correctly. A6.1.4 Acknowledgements and readbacks are obtained and verified when required. A6.1.5 Abbreviated phraseology is used when appropriate.	**Message Types:** Clearances, instructions, information.	**Manual of Air Traffic Services Part 1 (Gen)** Standard area/approach radar control phraseology. Standard speech abbreviations. Radiotelephony callsigns. Communication with aircraft. Transfer of communications. Transmission of company messages.

Topic B8 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR TERMINAL CONTROL
Sub-topic B8.1 CORRELATE FLIGHT DATA INTO A DISPLAY FOR TERMINAL CONTROL SERVICE

Performance Objective	Conditions	Essential Knowledge
B8.1.1 Strip marking is legible and conforms to standard procedures. B8.1.2 Correct message entry formats are used. B8.1.3 All relevant traffic is included on the display. B8.1.4 Flight progress strips are organised in a manner that reflects the traffic situation in accordance with laid down procedures. B8.1.5 Electronic flight data displays are organised in accordance with laid down procedures.	**Methods of Display:** Flight progress strip displays. Electronic flight data displays.	**Local Procedures** Layout and use of flight progress strips. Layout of and use of electronic flight data displays.

Topic B8 MAINTAIN A REPRESENTATIVE FLIGHT DATA DISPLAY FOR TERMINAL CONTROL
Sub-Topic B8.2 UPDATE THE TERMINAL CONTROL FLIGHT DATA DISPLAY

Performance Objectives	Conditions	Essential Knowledge
B8.2.1 Information is extracted from all relevant sources. B8.2.2 The display is updated using information received. B8.2.3 Clearances and instructions passed to aircraft and other agencies are recorded. B8.2.4 Co-ordination agreed with other agencies is recorded. B8.2.5 The integrity of EDD performance and data is monitored.	**Sources of information:** Pilot reports. Information from other controllers. Information from other agencies. Computer derived information. **Methods of display:** Flight progress strips and electronic data displays.	Aircraft performance. Time, speed, distance calculations. Effects of wind. Report formats. EDD display parameters.

Topic G40 PROVIDE TERMINAL RADAR CONTROL SERVICE
Sub-topic G40.1 PROVIDE RADAR CONTROL SERVICE IN A TERMINAL CONTROL AREA AND ADJACENT SECTORS

Performance Objective	Conditions	Essential Knowledge
G40.1.1 Flight data is assessed for actual and potential traffic conflicting. G40.1.2 Aircraft are identified on radar. G40.1.3 A control strategy is developed to achieve separation with the least average delay to flights. G40.1.4 Appropriate radar separation is achieved. G40.1.5 The radar is monitored to ensure that separation is not eroded. G40.1.6 The applied separation is the most appropriate taking into account safety and expedition. G40.1.7 Immediate action is taken to restore separation when it has been eroded. G40.1.8 Appropriate traffic information is passed without delay. G40.1.9 Radar procedures are adjusted to allow for the effects of weather on flight operations. G40.1.10 Radar procedures are adjusted to allow for the effect of degradation of essential navigational and communication services on flight operations.	**Airspace category:** A, C, D. Terminal control area and adjacent sectors. **Types of Radar:** Primary, Secondary, Analogue, Processed Radar. **Control techniques:** Radar Monitoring, Vectoring, Speed Control. **Types of flight:** Aircraft en route, joining, crossing and leaving controlled airspace.	Altimetry, Heights, Altitudes and Flight Levels. Radar principles of operation and limitations. Aircraft performance. Effects of weather on flight operations. Use ands limitations of navigation and communications aids. Vectoring techniques. Speed control techniques. **Rules of the Air** General Flight rules Instrument Flight Rules Visual Flight Rules **Manual of Air Traffic Services Part 1 (Gen)** Air traffic services:- Introduction Air traffic service Air traffic control service Radar operation:- Radar services Penetration by independent units Identification using primary radar Identification using secondary radar Transfer of identity Lost identity Non radar separation standards applicable to a radar environment Radar separation standards Wake turbulence spacing Traffic information

Performance Objectives	Conditions	Essential Knowledge
		Unknown traffic information Actions in the event of loss of separation Weather avoidance by pilots Weather avoidance by radar controllers **Manual of Air Traffic Services Part 1 (Gen)** Actions in the event of loss of separation, reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Radar separation **Manual of Air Traffic Services Part 1 (Gen)** All applicable current instructions. Ground based collision avoidance systems.

Topic G41 CO-ORDINATE WITH OTHER AGENCIES
Sub-topic G41.1 CO-ORDINATE WITH ADJACENT AREA CONTROL OPERATIONAL POSITIONS

Performance Objective	Conditions	Essential Knowledge
G41.1.1 Traffic situation is analysed to determine the need for co-ordination. G41.1.2 Appropriate co-ordination is initiated in sufficient time to permit negotiation and any agreement to be effected. G41.1.3 The effect of co-ordination requested by adjacent air traffic units is assessed. G41.1.4 An appropriate course of action is negotiated and agreed. G41.1.5 The agreed course of action is effected. G41.1.6 Flow management requirements are met.	**Control positions:** Adjacent operational positions. Adjacent centres.	Aircraft performance. Methods of co-ordination. Standing agreements. Letters of agreement. Approval request. Flow management procedures.

Topic G41 CO-ORDINATE WITH OTHER AGENCIES
Sub-topic G41.2 CO-ORDINATE WITH ADJACENT AERODROMES

Performance Objective	Conditions	Essential Knowledge
G41.2.1 Co-ordination for arriving aircraft is initiated in sufficient time to permit its implementation. G41.2.2 Releases are formulated to expedite arrivals whilst minimising disruption to the en route flow of traffic. G41.2.3 Departure clearances are formulated to expedite departures whilst minimising disruption to the en route flow of traffic. G41.2.4 Flow management requirements are met.	Single and multiple arrivals and departures.	Aircraft performance. **Manual of Air Traffic Services Part 1 (Gen)** Methods of co-ordination. **Manual of Air Traffic Services Part 1 (Gen)** Inbound release. Radar release. Release subject. Flow management procedures.

Topic G42 MANAGE DIVERSIONS AND HOLDING SITUATIONS
Sub-topic G42.1 HANDLE DIVERSIONS

Performance Objective	Conditions	Essential Knowledge
G42.1.1 Information necessary to facilitate the diversion is obtained. G42.1.2 Other relevant agencies are informed of the diversion. G42.1.3 Flight plan data is amended. G42.1.4 Diversion messages are issued when appropriate.	**Airspace category:** A, B, C, D, F. Airways and control areas excluding terminal control areas. Advisory routes and areas. **Types of radar:** Primary, Secondary, Analogue, Processed Radar. **Types of diversion:** Pilot initiated; ATC initiated; Company initiated.	**Manual of Air Traffic Services Part 1 (Gen)** Reasons for diversions. **Manual of Air Traffic Services Part 1 (Gen)** Aerodrome actions. **Manual of Air Traffic Services Part 1 (Gen)** ATCC actions. Background on weather minima. Background on fuel management.

Topic G42 MANAGE DIVERSIONS AND HOLDING SITUATIONS
Sub-topic G42.2 MANAGE HOLDING SITUATIONS

Performance Objective	Conditions	Essential Knowledge
G42.2.1 Flight data is assessed to determine the need for holding. G42.2.2 Aircraft are informed of the need to hold in sufficient time. G42.2.3 Aircraft are advised of the expected delay. G42.2.4 Other relevant agencies are informed of the holding. G42.2.5 Flight plan data is amended. G42.2.6 Identity is re-established when aircraft leave the holding pattern.	**Airspace category:** A, B, C, D, F Terminal control areas and adjacent sectors. Advisory routes and areas. **Types of radar:** Primary, Secondary, Analogue, Processed Radar. **Holding:**- For traffic, weather, airfield closure.	Reasons for holding. **Doc. 8168** Holding Criteria. **Manual of Air Traffic Services Part 1 (Gen)** Onward clearance times. **Manual of Air Traffic Services Part 1 (Gen)** Expected approach times including no ATC delay and delay not determined.

Topic G43 WORK AS A TEAM MEMBER ON THE TERMINAL CONTROL OPERATIONAL POSITION
Sub-topic G43.1 ACCEPT RESPONSIBILITY FOR THE OPERATIONAL POSITION

Performance Objective	Conditions	Essential Knowledge
G43.1.1 Compliance with licensing and medical requirements is confirmed. G43.1.2 Pre task briefing is carried out. G43.1.3 The current and projected traffic situation is obtained from the duty controller. G43.1.4 Current and projected workload is evaluated to determine whether the resources available are appropriate. G43.1.5 Action is taken to ensure resources are adequate for the task.	Initial arrival for duty period. Return following fatigue break.	**Aeronautical Information Circulars** Effects of drugs, medicines, fatigue, stress, medical conditions. **Air Navigation Order** Licensing requirements. Certification of competence. **Manual of Air Traffic Services Part 1 (Gen)** Actions before taking over an operational position.

Topic G43 WORK AS A TEAM MEMBER ON THE TERMINAL CONTROL OPERATIONAL POSITION
Sub-topic G43.2 MONITOR PERFORMANCE WHILST RESPONSIBLE FOR THE OPERATIONAL POSITION

Performance Objective	Conditions	Essential Knowledge
G43.2.1 Assistance is called for in sufficient time to ensure personal capabilities are not exceeded. G43.2.2 Assistance provided to other team members is appropriate to the circumstances. G43.2.3 Current and projected workload is evaluated to determine whether the resources available are appropriate. G43.2.4 Action is taken to ensure resources are adequate for the task. G43.2.5 Rest/fatigue break requirements are complied with. G43.2.6 Concentration is maintained at an appropriate level for the task. G43.2.7 Indications of reduced or inadequate performance are acted upon in an appropriate manner.	**Traffic flow:** Light, Medium, Heavy.	**CAP 670 Part D Annex C** Scheme for regulation of the hours of civil ATCOs in the UK. ***Underpinning knowledge*** Indications of stress. Indications of fatigue. Workload sharing.

Topic G43 WORK AS A TEAM MEMBER ON THE TERMINAL CONTROL OPERATIONAL POSITION
Sub-topic G43.3 TRANSFER RESPONSIBILITY FOR THE OPERATIONAL POSITION

Performance Objective	Conditions	Essential Knowledge
G43.3.1 The current traffic situation is clearly communicated to the relieving controller. G43.3.2 The current and projected operating conditions are clearly communicated to the relieving controller. G43.3.3 Current and projected workload is evaluated to determine whether the resources available are appropriate. G43.3.4 Action is taken to ensure resources are adequate for the task.	Running handover.	**CAP 670 Part D Annex C** Scheme for regulation of the hours of civil ATCOs in the UK. **Manual of Air Traffic Services Part 1 (Gen)** Actions when handing over an operational position.

Topic H9 MANAGE DEVELOPED EMERGENCIES FROM THE TERMINAL CONTROL UNIT
Sub-topic H9.1 MANAGE RADIO FAILURES

Performance Objective	Conditions	Essential Knowledge
H9.1.1 Aircraft radio failure is recognised from available information. H9.1.2 Standard radio failure procedures are implemented.	**Types of failure:** Ground radio. Partial and complete aircraft radio. **Environment:** Radar.	**Manual of Air Traffic Services Part 1 (Gen)** Pilot actions in the event of loss of communications. ATC procedures in the event of loss of communications. **Manual of Air Traffic Services Part 1 (Gen)** Reporting actions. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information

Topic H9 MANAGE DEVELOPED EMERGENCIES FROM THE TERMINAL CONTROL UNIT
Sub-topic H9.2 MANAGE SITUATIONS ARISING FROM UNLAWFUL INTERFERENCE

Performance Objective	Conditions	Essential Knowledge
H9.2.1 The possibility of unlawful interference is recognised from available information. H9.2.2 Standard procedures are adhered to when dealing with aircraft subject to unlawful interference.	Aircraft overflying, intending to land within area of jurisdiction. **Environment:** Radar.	**Manual of Air Traffic Services Part 1 (Gen)** Indications of unlawful interference. Laid down handling procedures, National and International. Special communications procedures. Reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information.

Topic H9 MANAGE DEVELOPED EMERGENCIES FROM THE TERMINAL CONTROL UNIT
Sub-topic H9.3 MANAGE AIRCRAFT EMERGENCIES

Performance Objective	Conditions	Essential Knowledge
H9.3.1 The possibility of an emergency situation existing is recognised from available information. H9.3.2 The nature of the emergency is determined. H9.3.3 The level of priority over other traffic is evaluated.	**Types of emergency:** Engine. Airframe. Fuel based. Medical. **Environment:** Radar.	Aircraft performance and performance limitations. **MATS Part 1 Section 5** Recognising an emergency situation: handling aircraft emergencies; overdue aircraft, criteria and actions; phases of emergency. **MATS Part 1 Section 6** Reporting action. **MATS Part 1 Section 1** Availability of supplementary flight plan information.

Topic H9 MANAGE DEVELOPED EMERGENCIES FROM THE TERMINAL CONTROL UNIT
Sub-topic H9.4 PROVIDE ALERTING SERVICE

Performance Objective	Conditions	Essential Knowledge
H9.4.1 Available information is evaluated to determine the phase of emergency existing. H9.4.2 Actions follow laid down procedures appropriate to the phase of the emergency.	**Phases of emergency:** Uncertainty. Alert. Distress. **Environment:** Radar	**Manual of Air Traffic Services Part 1 (Gen)** Recognising an emergency situation: handling aircraft emergencies; overdue aircraft, criteria and actions; phases of emergency. **Manual of Air Traffic Services Part 1 (Gen)** Reporting action. **Manual of Air Traffic Services Part 1 (Gen)** Availability of supplementary flight plan information.

Topic H9 MANAGE DEVELOPED EMERGENCIES FROM THE TERMINAL CONTROL UNIT
Sub-Topic H9.5 RECOVER FROM A RADAR FAILURE

Performance Objective	Conditions	Essential Knowledge
H9.5.1 Aircraft are informed of the failure. H9.5.2 Flight data is assessed for actual and potential traffic conflicting. H9.5.3 A control strategy is developed to achieve separation with the least average delay to flights. H9.5.4 Immediate action is taken to achieve non-radar separation. H9.5.5 Appropriate traffic information is passed without delay. H9.5.6 The applied separation is the most appropriate taking into account safety and expedition. H9.5.7 Appropriate traffic flow restrictions are applied H9.5.8 Aircraft are identified on resumption of radar service. H9.5.9 Aircraft are informed of the resumption of radar service.	**Airspace category:** A, C, D, E. Terminal area and adjacent sectors. **Operating environment:** Total radar **Types of flight:** Aircraft en route, joining, crossing and leaving controlled airspace.	Altimetry, Heights, Altitudes and Flight Levels. Effects of weather on flight operations. Use and limitations of navigation and communications aids. **Manual of Air Traffic Services Part 1 (Gen)** Non radar separation standards. Radar separation standards. Wake turbulence spacing. Aircraft performance. Actions when radar service is restored. Reporting action.

Topic H10 MANAGE DOMESTIC CONTINGENCIES IN A TERMINAL CONTROL ROOM
Sub-Topic H10.1 SAFELY EVACUATE THE CONTROL ROOM

Performance Objective	Conditions	Essential Knowledge
H10.1.1 Available information is evaluated to determine the need to evacuate the control room. H10.1.2 Traffic is disposed of in accordance with laid down procedures. H10.1.3 Evacuation is conducted in accordance with laid down procedures.	**Reasons for evacuation:** Fire and Bomb Warnings.	**Local procedures** Evacuation of control room.

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