# Aerodrome Flight Information Service Instrument Rating

# AFI

# Module 10

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## EXECUTIVE SUMMARY

Phase II – Rating and endorsement specialised training Module 10 provides the Danish CAA ATS Common Core Content for **Aerodrome Flight Information Service Instrument Rating** training.

The content of the rating training course is based on the assumption that the student has successfully completed the Phase I – Basic ATS Training, Common Core Content Objectives as a prerequisite.
It has been derived by building on the Phase I Basic ATS Training Common Core Content. A copy of this, together with a list of action verbs used, are contained the Danish CAA ATS Initial Training – BASIC ATS TRAINING.

Following the tabulated format of the Phase I Common Core Content, the **Aerodrome Flight Information Service Instrument Rating** training common core content has been subdivided into subjects:

1. Introduction to the Course (INTR);
2. Aviation Law (LAW);
3. Air Traffic Management (ATM);
4. Meteorology (MET);
5. Navigation (NAV);
6. Aircraft (ACFT);
7. Human Factors (HUM);
8. Equipment and Systems (EQPM)
9. Professional Environment (PENV);
10. Unusual/Emergency Situations (UNES);
11. Degraded Systems Capability (DEGS);
12. Aerodromes (AGA).

The order of the subjects and objectives is neither intended to convey a pedagogical sequence nor to indicate a relative level of importance.

The training designer will need to know that the student has successfully completed the Phase I Course. The design of the **Aerodrome Flight Information Service Instrumental Rating** course can now be based on the combination of Phase I – Basic ATS Training and Phase II – Rating and endorsement specialised training Module 10.

This module should be trained as a combination of classroom lecturing and simulator exercises.

**Minimum time spend**

| | |
|---|---|
| Lecturing | 40 hours * ** |
| Simulator training | 15 hours per student ** |

* if combined with module 12, the required lecturing time for the succeeding module may be halved after having passed the test of this module.

** if converting/extending from ATC to FIS licence the required lecturing time may be halved and the required simulator time may be reduced subject to the CTI assessment but not less than 75%.

**Examination/Assessment**
Summative assessment in the simulator.
Daily logs on debriefing.
Assessment report for every 5 hours.

Theoretical test:

| | |
|---|---|
| Time available | 60 mins |
| Questions | 40 |
| Pass mark | 75% |

Facilities English - Danish dictionary

Distribution of Questions:

| CQB Module 10 | Amount of questions |
|---|---|
| Subject 01 | |
| 10 01 01 01 | |
| 10 01 01 02 | |
| 10 01 01 03 | |
| 10 01 02 01 | |
| 10 01 02 02 | |
| 10 01 02 03 | |
| Total Subject 01 | 0 |

| Subject 02 | |
|---|---|
| 10 02 01 01 | |
| 10 02 01 02 | |
| 10 02 02 01 | |
| 10 02 02 02 | |
| 10 02 02 03 | |
| 10 02 02 04 | |
| 10 02 02 05 | |
| 10 02 02 06 | |
| 10 02 03 01 | |
| 10 02 03 02 | |
| Total Subject 02 | 6 |

| Subject 03 | |
|---|---|
| 10 03 01 01 | |
| 10 03 01 02 | |
| 10 03 01 03 | |
| 10 03 01 04 | |
| 10 03 01 05 | |
| 10 03 02 01 | |
| 10 03 02 02 | |
| 10 03 02 03 | |
| 10 03 03 01 | |
| 10 03 03 02 | |
| 10 03 04 01 | |
| 10 03 04 02 | |
| 10 03 04 03 | |
| 10 03 04 04 | |
| 10 03 05 01 | |
| 10 03 06 01 | |
| 10 03 06 02 | |
| 10 03 07 01 | |
| 10 03 07 02 | |

| CQB Module 10 | Amount of questions |
|---|---|
| 10 03 08 01 | |
| 10 03 08 02 | |
| 10 03 09 01 | |
| 10 03 09 02 | |
| 10 03 09 03 | |
| 10 03 09 04 | |
| 10 03 09 05 | |
| 10 03 09 06 | |
| 10 03 09 07 | |
| 10 03 09 08 | |
| 10 03 10 01 | |
| 10 03 11 01 | |
| 10 03 11 02 | |
| 10 03 11 03 | |
| Total Subject 03 | 12 |

| Subject 04 | |
|---|---|
| 10 04 01 01 | |
| 10 04 02 01 | |
| 10 04 02 02 | |
| Total Subject 04 | 2 |

| Subject 05 | |
|---|---|
| 10 05 01 01 | |
| 10 05 01 02 | |
| 10 05 02 01 | |
| Total Subject 05 | 2 |

| Subject 06 | |
|---|---|
| 10 06 01 01 | |
| 10 06 02 01 | |
| 10 06 02 02 | |
| 10 06 02 03 | |
| 10 06 02 04 | |
| 10 06 02 05 | |
| 10 06 02 06 | |
| 10 06 03 01 | |
| 10 06 03 02 | |
| 10 06 04 01 | |
| 10 06 04 02 | |
| Total Subject 06 | 4 |

| CQB Module 10 | Amount of questions |
|---|---|
| Subject 07 | |
| 10 07 01 01 | |
| 10 07 02 01 | |
| 10 07 02 02 | |
| 10 07 03 01 | |
| 10 07 03 02 | |
| 10 07 03 03 | |
| 10 07 04 01 | |
| 10 07 04 02 | |
| 10 07 05 01 | |
| 10 07 05 02 | |
| 10 07 05 03 | |
| 10 07 06 01 | |
| 10 07 07 01 | |
| 10 07 08 01 | |
| Total Subject 07 | 6 |

| Subject 08 | |
|---|---|
| 10 08 01 01 | |
| 10 08 01 02 | |
| 10 08 02 01 | |
| 10 08 03 01 | |
| 10 08 03 02 | |
| 10 08 04 01 | |
| 10 08 04 02 | |
| 10 08 05 01 | |
| Total Subject 08 | 2 |

| CQB Module 10 | Amount of questions |
|---|---|
| Subject 09 | |
| 10 09 01 01 | |
| 10 09 01 02 | |
| 10 09 01 03 | |
| Total Subject 09 | 0 |

| Subject 10 | |
|---|---|
| 10 10 01 01 | |
| 10 10 01 02 | |
| 10 10 01 03 | |
| Total Subject 10 | 2 |

| Subject 11 | |
|---|---|
| Not applicable | |
| Total Subject 11 | 0 |

| Subject 12 | |
|---|---|
| 10 12 01 01 | |
| 10 12 01 02 | |
| 10 12 01 03 | |
| 10 12 02 01 | |
| 10 12 02 02 | |
| 10 12 02 03 | |
| 10 12 03 01 | |
| 10 12 03 02 | |
| Total Subject 12 | 4 |

| Total Module 10 | 40 |
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## SUBJECT 1: INTRODUCTION TO THE COURSE

The general objective is:
Students shall know and understand the training programme that they will follow during the institutional rating training.

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| **1. COURSE MANAGEMENT** Students shall explain the aims and objectives of the course, the management structure and recognise the materials to be used. | | | |
| 1.1. Course Introduction | 1.1.1. Explain the aims and main objectives of the course | 2 | Course objectives for the specific rating/endorsement |
| 1.2. Course Administration | 1.2.1. Name the course leader and principal instructors | 1 | |
| 1.3. Study Material and Training Documentation | 1.3.1. Choose appropriate documentation for course studies | 3 | Library; CBT library |
| | 1.3.2. Integrate appropriate documentation into the course | 4 | Library; CBT library |
| **2. INTRODUCTION TO THE ATC TRAINING COURSE** Students shall state the methodology and describe the assessment procedures used in the course. | | | |
| 2.1. Course Content | 2.1.1. State the different methods of teaching the subjects | 1 | Theoretical training; Practical training; Self-study; taxonomy; Action verbs |
| | 2.1.2. Describe, in general terms, the content of the subjects | 2 | |
| | 2.1.3. Describe the organisation of the theoretical training | 2 | |
| | 2.1.4. Describe the organisation of the simulation training | 2 | Structure of participation; Simulation exercises; Briefing; Debriefing |
| 2.2. Training Ethos | 2.2.1. Recognise the feedback mechanisms available | 1 | Instructor discussions; Training progress; Assessment; Results; Briefing; Debriefing |
| | 2.2.2. Describe the positive effect in working together with fellow course participants | 2 | How the influence of interactive studies can lead to success |
| 2.3. The Assessment Process | 2.3.1. Describe the assessment procedure | 2 | The assessment process applied during the course and associated re-sit procedures |

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## SUBJECT 2: AVIATION LAW

The general objective is:
Students shall:
i. appreciate the principles of Aviation Law;
ii. know, understand and apply the Rules of the Air and the Regulations (including airspace and flight planning) appropriate to aerodrome flight information service;
iii. appreciate the authority vested in the flight information service operator and the means by which that authority is exercised.

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| **1. INTERNATIONAL AND NATIONAL ORGANISATIONS** Students shall explain the purpose and functions of International and national bodies | | | |
| 1.1. International Agencies | 1.1.1. Differentiate between the purpose and function of international agencies and their relevance to aerodrome operations | 2 | ICAO; ECAC; EUROCONTROL; EU; JAA; ITU |
| | 1.1.2. Describe the methods by which ICAO notifies and implements legislation and procedures | 2 | SARPS; PANS; ICAO; ANNEXES; ICAO DOCUMENTS; Regional Offices |
| 1.2. National Legislative Procedures | 1.2.1. Describe the methods by which legislation affecting aerodrome flight information service is implemented and notified | 2 | AIP; NOTAM; AIC; National procedures; Local procedures; National telecommunication procedures |
| **2. RULES AND REGULATIONS** Students shall explain the Rules and Regulations which affect aerodrome control. | | | |
| 2.1. General | 2.1.1. Differentiate between the Air Navigation Services | 2 | ICAO Doc 9161; ATM (ATS, ATFM, ASM) |
| | 2.1.2. Explain the considerations which determine the need for the Air Traffic Services (ATS) | 2 | ICAO ANNEX 2 Chapter 2 |
| | 2.1.3. Differentiate between the ATS | 2 | ATC service; Advisory service; FIS; Alerting service |

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| 2.2. Reports | 2.2.1. State the standard forms for reports | 1 | Incident/Accident; Airmiss/Airprox; Breach of regulations; Watch/ Log book; Records |
| | 2.2.2. Describe the functions of, and processes for, reporting | 2 | Incident/Accident; Airmiss/Airprox; Breach of regulations; Watch/Log book; Records |
| | 2.2.3. Use the standard forms for reporting | 3 | ICAO Doc 4444 Appendix 4 |
| | 2.2.4. Explain the use of air traffic incident/ accident report form | 3 | ICAO Doc 4444 Part 2 and Appendix 4 |
| | 2.2.5. Use the standard ICAO air traffic incident/accident report form | 3 | ICAO Doc 4444 |
| | 2.2.6. Use the other standard forms and reports | 3 | e.g. Breach of regulations |
| 2.3. Airspace | 2.3.1. Appreciate the differences between types of airspace and their relevance to aerodrome flight information service | 3 | Classes A-G as appropriate; National classification |
| | 2.3.2. Initiate planning co-ordination and actions in the appropriate airspace classification | 3 | |
| | 2.3.3. Use aeronautical charts | 3 | Visual and instrument approach charts; Aerodrome charts; National maps and charts; Military maps and charts |
| | 2.3.4. Initiate planning co-ordination and actions appropriate to the airspace structure | 3 | National; International; Civil; Military; Areas of Responsibility; Sectorisation; Airspace structure |
| 2.4. Rules of the Air | 2.4.1. Apply the Rules of the Air | 3 | ICAO ANNEX 2 Chapters 2, 3, 4, 5 |
| | 2.4.2. Apply National Rules | 3 | National legislation |
| | 2.4.3. Appreciate the duties and responsibilities of air traffic participants | 3 | Pilots; Operators; Authorities |
| | 2.4.4. Initiate planning, co-ordination and actions appropriate to the general flight rules | 3 | ICAO ANNEX 2 Chapter 3 |
| | 2.4.5. Initiate planning, co-ordination and actions appropriate to the VFR, SVFR, IFR | 3 | ICAO ANNEX 2 Chapters 4, 5; ICAO Doc 4444; OCA/H; Minimum altitudes |

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| 2.5. Flight Plans | 2.5.1. Obtain and use flight plan information to provide aerodrome flight information service | 3 | Types of flight plan FPL, CPL, RPL, AFIL, Supplementary information |
| 2.6. Special National Legislation and Procedures | 2.6.1. Initiate planning, co-ordination and actions in accordance with special national legislation and procedures | 3 | e.g. Security; Environment; Noise abatement; Conservation areas; Fuel jettisoning areas; Sensitive areas |
| | 2.6.2. Describe the methods by which legislation affecting aerodrome flight information service is implemented and notified | 2 | AIP; NOTAM; AIC; LOAs; National procedures; Local procedures; National telecommunication procedures |
| **3. FIS LICENSING** Students shall appreciate the legal aspects associated with the FIS Licence | | | |
| 3.1 Ratings and Privileges | 3.1.1. Explain the privileges and conditions attached to holding an Aerodrome Flight Information Service Instrument (AFI) rating | 2 | BL 6-71 |
| | 3.1.2. Explain the requirements for maintaining a rating | 2 | |
| 3.2. Incident/Accident | 3.2.1. Explain the procedures used following an incident/accident | 2 | National regulations; 'Human Factors Module – CISM' |

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## SUBJECT 3: AIR TRAFFIC MANAGEMENT

The general objective is:
Students shall apply operational procedures in aerodrome flight information service to ensure a safe, orderly and expeditious service.

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| **1. AIR NAVIGATION SERVICES** | | | |
| 1.1. Air Traffic Service/Aerodrome Flight Information Service | 1.1.1. Define aerodrome flight information service | 1 | ICAO ANNEX 11 Chapter 1 |
| | 1.1.2. Explain specific areas of responsibility of aerodrome flight information service | 2 | ICAO ANNEX 11 Chapter 2 |
| | 1.1.3. Appreciate own area of responsibility | 3 | Control Zone; ATZ; TIZ; Traffic Circuit; Manoeuvring Area; Movement Area; Vicinity |
| | 1.1.4. Differentiate between different types of aerodromes | 2 | Controlled; Uncontrolled; AFIS |
| 1.2. Flight Information Service (FIS) | 1.2.1. Explain the responsibility for the provision of FIS | 2 | ICAO Doc 4444 Part 2 |
| | 1.2.2. State the information that shall be passed to aircraft by an aerodrome flight information operator | 1 | SIGMETS; Serviceability of NAVAIDs; Weather; Flight Safety Information; ICAO Doc 4444 Part 5 |
| | 1.2.3. Relay appropriate aerodrome information | 3 | ICAO Doc 4444 Part 5 |
| | 1.2.4. Relay appropriate traffic information | 3 | ICAO Doc 4444 Part 9 |
| 1.3. Alerting Service | 1.3.1. Explain the responsibility for the provision of alerting service | 2 | ICAO Doc 4444 Part 2; National legislation; Requirements; Procedures |
| | 1.3.2. Respond to distress and urgency signals | 3 | ICAO Doc 4444; EATMP Poster (ASSIST) Reference: 'Controller Training in the Handling of Unusual Incidents' |
| | 1.3.3. Apply appropriate action in abnormal situations | 3 | ICAO Doc 4444 - Special Codes; Seek assistance (TRM); Checklist; National Legislation requirements |

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| 1.4. Air Traffic Flow Management (ATFM) | 1.4.1. Appreciate the working principles of ATFM | 3 | Working principles of ATFM; CFMU; Slot management; Local procedures; Slot allocation procedures |
| | 1.4.2. Organise traffic to take account of flow management | 4 | Slot allocation Procedures |
| | 1.4.3. Inform appropriate authority | 3 | e.g. Abnormal situations; Decrease in sector capacity; Limitations on systems and equipment; Changes in workload/ capacity; Relevant information (e.g. reported ground-based Incidents, forest fire, smoke, oil pollution); Unusual meteorological Conditions |
| 1.5. Airspace Management (ASM) | 1.5.1. Appreciate the working principle of ASM | 3 | FUA |
| | 1.5.2. Organise traffic to take account of ASM | 4 | Conditional routes |
| **2. COMMUNICATION** Students shall appreciate the necessity for effective communication and use approved phraseology. | | | |
| 2.1. Effective Communication | 2.1.1. Analyse examples of pilot and controller communication for effectiveness | 4 | |
| | 2.1.2. Explain the need for approved phraseology | 2 | ICAO Doc 4444; ICAO Doc 9432; Standard words and phrases in ICAO ANNEX 10 |
| | 2.1.3. Use ICAO standard phraseology | 3 | ICAO Doc 4444; ICAO Doc 9432; Standard words and phrases in ICAO ANNEX 10 |
| | 2.1.4. Use national approved phraseology when applicable | 3 | |
| | 2.1.5. Perform communication effectively | 3 | Transmission techniques |
| 2.2. Phraseology for Use in the Vicinity of an Aerodrome | 2.2.1. Use approved phraseology | 3 | e.g. Identification of aircraft; Acknowledgement by visual means; Starting procedures; Flow management; Pushback; Towing procedures; Time check; Taxi procedures; Holding; Crossing runways; Preparation for take off; Take off; After take off; Entering an aerodrome traffic circuit; Landing; Missed approach; Information to aircraft after landing |

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| 2.3. Phraseology for Unusual Events | 2.3.1. Use approved phraseology | 3 | e.g. Distress; Urgency; Hi-Jack; Radio Failure; Meteorological Hazards |
| | 2.3.2. Apply change of radiotelephony call sign | 3 | ICAO Doc 4444 Part 2 |
| | 2.3.3. Extemporise phraseology in abnormal situations | 5 | |
| **3. ATC CLEARANCES AND INSTRUCTIONS** Students shall issue appropriate clearances and instructions. | | | |
| 3.1 Type and Content of ATC Clearances | 3.1.1 Define ATC clearance | 1 | ICAO Annex 2, Chap 1 |
| | 3.1.2 Describe the contents of an ATC clearance | 2 | ICAO Doc 4444, |
| 3.2. ATC Clearances | 3.2.1. Relay appropriate ATC clearances in the provision of aerodrome flight information service | 3 | ICAO Annex 11 Appropriate clearances |
| | 3.2.2. Integrate appropriate information in the aerodrome flight information service | 4 | e.g. Take off, Landing |
| **4. CO-ORDINATION** Students shall understand the need for, and conduct, co-ordination. | | | |
| 4.1 Principles, Types and Content | 4.1.1 Explain the principles of co-ordination | 2 | e.g. notification, negotiation, agreement, transfer of flight data and local agreements, ICAO Doc 4444, ICAO Annex 11 |
| 4.2. Necessity | 4.2.1. Identify the need for co-ordination | 3 | |
| 4.3. Tools and Methods | 4.3.1 Describe the means of co-ordination | 2 | e.g. data link, telephone, intercom, voice |
| | 4.3.2. Use the available tools for co-ordination | 3 | e.g. Electronic transfer of flight data; telephone; Interphone; Intercom; Direct speech; RTF; Local agreements; ICAO Doc 4444 |

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| 4.4. Co-ordination Procedures | 4.4.1. Co-ordinate in the provision of aerodrome flight information service | 4 | ICAO Doc 4444 Part 8 |
| | 4.4.2. Determine runway in use | 4 | Approach Control; Area Control |
| | 4.4.3. Co-ordinate in the provision of Flight Information Service (FIS) | 4 | ICAO Doc 4444 Part 8 |
| | 4.4.4. Co-ordinate in the provision of alerting service | 4 | ICAO Doc 4444 Part 8 |
| | 4.4.5. Select, after negotiation, an appropriate course of action | 5 | Including the cases when additional traffic cannot be accepted by the adjacent control position and when additional traffic cannot be accepted by own information position |
| | 4.4.6. Ensure the agreed course of action is carried out | 4 | |
| **5. ALTIMETRY AND LEVEL ALLOCATION** Students shall allocate appropriate levels to aircraft. | | | |
| 5.1. Altimetry | 5.1.1. Calculate appropriate levels | 4 | e.g. TRL; TA; Transition layer; Height; Flight level; Altitude; Vertical distance to airspace boundaries |
| | 5.1.2. Inform aircraft of appropriate levels (heights, altitudes and flight levels) according to altimetry data | 4 | ICAO Doc 8168 |
| **6. COLLISION AVOIDANCE** Students shall respond to any type of Airborne Collision Avoidance System (ACAS) notification. | | | |
| 6.1. Airborne | 6.1.1 Explain the effect of airborne collision avoidance systems on FIS operations | 2 | e.g. ACAS, TCAS |
| | 6.1.2. Respond to Airborne Collision Avoidance System (ACAS) notifications | 3 | ACAS; TCAS; GPWS |
| 6.2. Ground | 6.2.1 Explain the effect of conflict alert systems on FIS operations | 2 | e.g. MTCA, STCA, MSAW, DAIW |
| | 6.2.2. Respond to ground-based collision avoidance system warnings | 3 | Anti-incursion; |

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| **7. DATA DISPLAY** Students shall analyse data in order to manage traffic. | | | |
| 7.1 Data Extraction | 7.1.1 Extract pertinent data from a flight plan to produce a flight progress display | 3 | Flight progress Strips, electronic data display |
| | 7.1.2 Extract pertinent data from other sources to produce a flight progress display | 3 | Pilot reports, co- ordination, data exchange |
| 7.2. Data Management | 7.2.1. Analyse pertinent data on data displays | 4 | |
| | 7.2.2. Organise pertinent data on data displays | 4 | |
| | 7.2.3. Update pertinent data on data displays | 3 | e.g. strip marking symbols, strip movement procedures, electronic data |
| | 7.2.4. Process pertinent data on data displays | 3 | |
| **8. OPERATIONAL ENVIRONMENT** Students shall recognise and maintain the integrity of the simulated operational environment. | | | |
| 8.1. The Integrity of the Operational Environment | 8.1.1. Obtain information concerning the operational environment | 3 | e.g. Briefing; Handover; Notices; Local orders; Verify Information |
| | 8.1.2. Check and maintain the integrity of the operational environment | 3 | e.g. Frequency; Volmet; ATIS; SIGMET; Systems set-up; |
| | 8.1.3. Transfer information to relieving operator | 3 | e.g. Briefing; Handover; Notices; Local orders; Verify information |
| 8.2. Verification of the Currency of Operational Procedures | 8.2.1. Check all relevant documentation before managing traffic | 3 | e.g. Briefing; NOTAM; AIC; LOA |
| | 8.2.2. Apply the procedural changes while managing traffic | 3 | |

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| **9. PROVISION OF AN AERODROME FLIGHT INFORMATION SERVICE** | | | |
| 9.1. General | 9.1.1. Explain the responsibility for the provision of an aerodrome flight information service | 2 | ICAO Doc 4444;<br>ICAO ANNEX 11 |
| | 9.1.2. Describe the division of responsibility between ATS units | 2 | ICAO Doc 4444 Part 2 |
| | 9.1.3. Describe the responsibility in regard to military traffic | 2 | ICAO Doc 4444 Part 2 |
| | 9.1.4. Describe the responsibility in regard to unmanned free balloons | 2 | ICAO Doc 4444 Part 2 |
| 9.2. Functions of Aerodrome Flight Information Service | 9.2.1. Manage the general functions of aerodrome flight information service | 4 | ICAO Doc 4444 Part 5 |
| | 9.2.2. Manage the alerting service provided by aerodrome flight information service | 4 | ICAO Doc 4444 Part 5 |
| 9.3. Traffic and Taxi Circuits | 9.3.1. Predict positions of aircraft in the aerodrome and taxi circuits | 4 | ICAO Doc 4444 Part 5 |
| | 9.3.2. Select the runway in use | 4 | ICAO Doc 4444 Part 5 |
| 9.4. Aeronautical Ground Lights | 9.4.1. Select aeronautical ground lights | 4 | ICAO Doc 4444 Part 5 |
| 9.5. Information to Aircraft by Aerodrome Flight Information Service | 9.5.1. Provide information related to the operation of aircraft | 4 | ICAO Doc 4444 Part 5 |
| | 9.5.2. Provide information on aerodrome conditions | 4 | ICAO Doc 4444 Part 5 |

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| 9.6. Conduct of Aerodrome Traffic | 9.6.1. Notify the order of priority for arriving and departing aircraft | 3 | ICAO Doc 4444 Part 5 |
| | 9.6.2. Manage the manoeuvring area | 4 | ICAO Doc 4444 Part 5 |
| | 9.6.3. Manage the traffic circuit | 4 | ICAO Doc 4444 Part 5; Meteorological phenomena; Geographical knowledge; Environmental factors |
| | 9.6.4. Manage the conduct of arriving and departing traffic | 4 | ICAO Doc 4444 Part 5 Meteorological phenomena; Wake turbulence; Environmental factors |
| | 9.6.5. Integrate Direction Finding information in managing a safe orderly and expeditious flow of traffic | 4 | e.g. ADF; UDF; VDF |
| | 9.6.6. Integrate surface conditions into the conduct of aerodrome traffic | 4 | Damp; Wet; Water; Patches; Flooding; Snow; Slush; Ice; Braking action |
| | 9.6.7. Integrate information about meteorological phenomena and issue appropriate information | 4 | Clouds; Precipitation; Visibility; Wind; Meteorological hazards |
| 9.7. Radio Failure | 9.7.1. Explain the procedures when a pilot experiences complete or partial radio failure | 2 | Civil; Military |
| | 9.7.2. Explain the procedures followed when a military aircraft experiences complete or partial radio failure | 2 | |
| 9.8. Navigational Assistance | 9.8.1. Provide navigational assistance to aircraft lost or unsure of position | 4 | Nearest most suitable aerodrome; Track; Heading; Distance; Aerodrome information; Any other relevant Navigational assistance |
| **10. WAKE TURBULENCE** | | | |
| 10.1 Wake Turbulence | 10.1.1 Explain the wake turbulence categories and warning criteria | 2 | ICAO Doc 4444 |
| **11. PROVISION OF AERODROME FLIGHT INFORMATION SERVICE - INSTRUMENT** | | | |
| 11.1. General | 11.1.1. Provide information to aerodrome traffic | 4 | ICAO Doc 4444 Part 4 |
| | 11.1.2. Integrate the information provided by the air traffic monitor | 4 | Use; Advantages; Disadvantages |

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| 11.2. Departing Traffic | 11.2.1. Provide information for departing aircraft | 4 | ICAO Doc 4444 Part 4; Radar separation; Wake Turbulence |
| | 11.2.2. Provide appropriate traffic information to departing traffic | 4 | ICAO Doc 4444 Part 5; Radar separation; Wake turbulence |
| 11.3. Arriving Traffic | 11.3.1. Provide information for arriving aircraft | 4 | ICAO Doc 4444 Part 5; Wake turbulence |
| | 11.3.3. Integrate aircraft on visual approach | 4 | ICAO Doc 4444 Part 4; Visual holding patterns |
| | 11.3.4. Integrate aircraft on instrument approach | 4 | ICAO Doc 4444 Part 4; Radar Monitoring |
| | 11.3.5. Appreciate holding patterns and their uses | 3 | ICAO Doc 4444 Part 4; ICAO Doc 8168 Vol. 1 |
| | 11.3.8. Provide appropriate traffic information to arriving aircraft | 4 | ICAO Doc 4444 Part 4 |

## SUBJECT 4: METEOROLOGY

The general objective is:
Students shall acquire, decode and make proper use of Meteorological information relevant to the provision of ATS to aerodrome traffic.

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| **1. METEOROLOGICAL PHENOMENA** Students shall identify the impact of meteorological phenomena on aerodrome operations. | | | |
| 1.1. Meteorological Phenomena | 1.1.1. Appreciate the impact of different cloud types | 3 | e.g. Stratus; Cumulus; Cumulonimbus; Nimbostratus |
| | 1.1.2. Appreciate the impact of precipitation | 3 | Rain; Snow; Sleet; Hail; Precipitation and Microphysics |
| | 1.1.3. Appreciate the impact of atmospheric obscurity | 3 | Advection fog; Radiation fog; Mixing; Evaporation; Mist; Drizzle |
| | 1.1.4. Appreciate the effect and impact of wind | 3 | Veering; Backing; Gusting; Land breezes; Sea breezes; Föhn; Windsheer |
| | 1.1.5. Appreciate the effect and danger of hazardous meteorological phenomena | 3 | Turbulence; Thunder storms; Icing; Microbursts |
| **2. SOURCES OF METEOROLOGICAL DATA** Students shall identify the sources of meteorological data in an aerodrome working position. | | | |
| 2.1. Meteorological Instruments | 2.1.1. Decode meteorological instruments readings | 3 | Anemometer; RVR indicator; Cloud base indicator; Altimeter |
| 2.2. Other Sources | 2.2.1. Decode displays of meteorological data | 3 | Data displays |
| | 2.2.2. Use Aeronautical Fixed Telecommunications Network or telephone to obtain meteorological data | 3 | |
| | 2.2.3. Update meteorological data from pilot reports | 3 | Pilot reports; ICAO Doc 4444 Part 2 |

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## SUBJECT 5: NAVIGATION

The general objective is:
Students shall appreciate all local Navigational aspects in order to organise the aerodrome traffic.

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| **1. MAPS AND AERONAUTICAL CHARTS** | | | |
| 1.1. Map Symbols | 1.1.1. Decode symbols and information found on relevant aeronautical maps and charts | 3 | Visual approach charts; Instrument approach charts; Aerodrome charts; National maps and charts; Military maps and charts |
| 1.2. Maps and Charts used by ATS | 1.2.1. Use relevant maps and charts | 3 | Visual approach charts; Instrument approach charts; Aerodrome charts; National maps and charts; Military maps and charts |
| **2. RADIO NAVIGATION** Students shall estimate the behaviour of aircraft using different radio-navigational systems. | | | |
| 2.1. Navigation Aids | 2.1.1. Estimate the behaviour of aircraft using different radio-navigational systems | 3 | |
| | 2.1.2. Describe the possible operational status of radio-navigational of systems | 2 | NDB; VOR; DME; ILS; MLS; D-GPS |
| | 2.1.3. Decode operational status displays of ground- based systems | 3 | NDB; VOR; DME; ILS; MLS; D-GPS |

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## SUBJECT 6: AIRCRAFT

The general objective is:
Students shall analyse the performance of Aircraft in order to integrate them into traffic organisation.

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| **1. AIRCRAFT TYPES AND CATEGORIES.** Students shall explain wake turbulence and ICAO approach categories. | | | |
| 1.1. Wake Turbulence and ICAO Approach Categories | 1.1.1. Explain ICAO wake turbulence categories | 2 | ICAO Doc 4444 Part 5 and Appendix 2 |
| | 1.1.2. Explain national wake turbulence categories | 2 | National wake turbulence categories |
| | 1.1.3. Explain ICAO approach categories | 2 | ICAO Doc 8168 Part 3 |
| **2. FACTORS AFFECTING AIRCRAFT PERFORMANCE** Students shall estimate aircraft performance factors in the provision of aerodrome flight information service. | | | |
| 2.1. Take Off | 2.1.1. Estimate the influence of factors affecting aircraft on take off | 3 | Runway conditions; wind; temperature and aircraft weight |
| 2.2. Climb | 2.2.1. Estimate the influence of factors affecting aircraft during climb | 3 | Speed; Weight; Altitude; Wind and temperature |
| 2.3. Final Approach and Landing | 2.3.1. Estimate the influence of factors affecting aircraft during final approach and landing descent | 3 | Wind; Aircraft configuration; Weight; Meteorological conditions; Runway conditions |
| 2.4. Economic Factors | 2.4.1. Estimate the influence of economic factors affecting aircraft in the provision of aerodrome flight information service | 3 | Routing; Speed; Rate of climb; Rate of descent |
| 2.5. Ecological Factors | 2.5.1. Estimate the influence of ecological factors affecting aircraft in the provision of aerodrome flight information service | 3 | e.g. Fuel jettisoning; Noise abatement procedures; Minimum flight altitudes |
| 2.6. Miscellaneous Factors | 2.6.1. Estimate the influence of miscellaneous factors affecting aircraft in the provision of aerodrome flight information service | 3 | e.g. Military flying; Calibration flights; Aerial photography |
| **3. AIRCRAFT DATA** Students shall estimate the standard average performance data for the provision of aerodrome flight information service. | | | |
| 3.1. Recognition of Aircraft Types | 3.1.1. Differentiate the fifty most commonly used aircraft | 2 | e.g. Physical features; ICAO approach categories; Wake turbulence categories |
| 3.2. Performance Data | 3.2.1. Estimate the standard average performance of the most commonly used aircraft relevant to the provision of aerodrome flight information service | 3 | e.g. Speeds; Rate of climb; Rate of descent; Take off distance |

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| **4. PERFORMANCE DATA IN UNUSUAL SITUATIONS** Students shall recognise a potential or actual emergency situation. In case of simple unusual situations, the students shall apply standard solutions. | | | |
| 4.1. Recognition of Unusual Situation | 4.1.1. List unusual situations and state their recommended solutions | 1 | e.g. Engine failure; Pressurisation problems; Fire on board; Lack of fuel; Bird strike; CASEVAC flights; Go around |
| 4.2. Action during Unusual Situations | 4.2.1. Apply recommended solution | 3 | e.g. Engine failure; Pressurisation Problems; Fire on board; Lack of fuel; Bird strike; CASEVAC flights; Go around |

## SUBJECT 7: HUMAN FACTORS

The general objective is:
Students shall:
i. recognise the necessity to constantly extend their knowledge;
ii. analyse factors which affect personal and team performance.

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| **1. PSYCHOLOGICAL FACTORS** Students shall relate psychological factors to the decision-making process. | | | |
| 1.1. Cognitive | 1.1.1. Describe the factors which influence decision-making | 2 | e.g. Stress; Learning; Knowledge; Fatigue; Alcohol/drugs; Distraction; Interpersonal relations; TRM |
| | 1.1.2. Relate human factors to decision-making | 4 | |
| **2. MEDICAL AND PHYSIOLOGICAL FACTORS** Students shall respond to fatigue and lack of personal fitness in the performance of their duties. | | | |
| 2.1. Fatigue | 2.1.1. Describe the onset of fatigue | 2 | e.g. Lack of concentration; Listlessness; Irritability; Frustration |
| | 2.1.2. Recognise the onset of fatigue in self | 1 | |
| | 2.1.3. Recognise the onset of fatigue in others | 1 | |
| | 2.1.4. Respond to indications of fatigue in an appropriate manner | 3 | |
| 2.2. Fitness | 2.2.1. Recognise signs of lack of personal fitness | 1 | |
| | 2.2.2. Describe actions when aware of a lack of personal fitness | 2 | |
| **3. SOCIAL AND ORGANISATIONAL FACTORS** Students shall develop teamwork attitudes. | | | |
| 3.1. Human Relations | 3.1.1. Apply social and organisational factors to work with other team members | 3 | |
| 3.2. Team Resource Management (TRM) | 3.2.1. State the objectives of TRM | 1 | Suggested reference: ‘Guidelines for Developing and Implementing Team Resource Management’ |

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| 3.3. Group Dynamics | 3.3.1. Identify the professional relationships between members of the group | 3 | |
| | 3.3.2. Identify the reasons for conflicts | 3 | |
| | 3.3.3. Describe actions to prevent repetitions conflicts | 2 | |
| | 3.3.4. Take account of TRM Programmes | 2 | TRM |
| | 3.3.5. Respond to the application of TRM techniques | 3 | e.g. Role of members; Allocation of responsibilities within the team; Benefits of having other team members to rely on; Safety aspects; Assistance in abnormal situations; TRM |
| **4. COMMUNICATION**<br>Students shall:<br>i. accurately complete written reports;<br>ii. express themselves clearly so as to be understood by other team members and colleagues. | | | |
| 4.1. Written Work | 4.1.1. Record information by writing effectively | 3 | e.g. Strips; Reports; Log-books |
| | 4.1.2. Pass information by writing effectively | 3 | e.g. Strips; Reports; Log-books |
| 4.2. Verbal/Non-verbal Communication | 4.2.1. Recognise human communication theory | 1 | e.g. Different languages; Air traffic language |
| | 4.2.2. Characterise the factors which affect verbal communication | 2 | e.g. Speed of speech; Frequency; Volume; Background noise |
| | 4.2.3. Characterise non-verbal communication | 2 | e.g. Body language; Facial expressions |
| | 4.2.4. Use language effectively in the practice of ATC | 3 | |
| **5. STRESS**<br>Students shall integrate stress management procedures in the performance of their duties. | | | |
| 5.1. Stress | 5.1.1. Recognise the effects of stress | 1 | Stress and its symptoms in self and in others |
| 5.2. Helplessness | 5.2.1. Respond to feelings of helplessness | 3 | Normal/abnormal Situations |

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| 5.3. Stress Management | 5.3.1. Act to relieve or minimise stress in self and/or others | 3 | The effect of personality in coping with stress; The benefits of active Stress management |
| | 5.3.2. Obtain assistance in stressful situations | 3 | TRM; CISM; The benefits of offering and accepting help in stress situations |
| | 5.3.3. Recognise the effect of shocking and stressful events | 1 | Self and others; Abnormal situations; CISM; TRM |
| | 5.3.4. Consider the benefits of Critical Incident Stress Management (CISM) | 2 | CISM |
| | 5.3.5. Explain the procedures used following an incident/accident | 2 | CISM, National/Local Procedures and/or Regulations; Counselling; Human element |
| **6. HUMAN ERROR** Students shall be able to discuss the concept of human error. | | | |
| 6.1. Human Error | 6.1.1. Explain the relationship between error and safety | 2 | Number and combination of errors; Pro-active versus reactive approach to discovery of error |
| | 6.1.2. State the different types of error | 1 | Slips; Lapses; Mistakes; Violations |
| | 6.1.3. Differentiate between errors and violations | 2 | |
| | 6.1.4. Describe errorprone conditions | 2 | e.g. Increase in traffic |
| **7. WORKING METHODS** Students shall discuss the effect of human factors consideration on efficiency. | | | |
| 7.1. Efficiency | 7.1.1. Consider, from a human factors point of view, the factors affecting efficiency in the provision of ATS | 2 | Own and others workload; OJT; Customer requirements; Economy; Ecology; Safety |
| **8. WORKING KNOWLEDGE** Students shall explain the importance of maintaining and updating professional Knowledge. | | | |
| 8.1. Controller Knowledge | 8.1.1. Maintain and update professional knowledge to retain competence in the operational environment | 3 | e.g. Briefing; LOA; NOTAM; AICs; Reports of accident/incident; VOLMET; ATIS; SIGMET |

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## SUBJECT 8: EQUIPMENT AND SYSTEMS

The general objective is:
Students shall integrate knowledge and understanding of the working principles of Equipment and Systems in the provision of an aerodrome flight information service.

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| **1. RADIO** Students shall operate the radio and Direction Finding equipment. | | | |
| 1.1. Radio Communications | 1.1.1. Use two-way communication | 3 | Transmit/Receive switches; Equipment; Procedures; Frequency selection; Stand-by equipment |
| | 1.1.2. Identify indications of correct and/or faulty operation of radio equipment | 3 | Indicator lights; Serviceability displays; Selector/frequency Displays |
| | 1.1.3. Respond to faults | 3 | Local procedures |
| 1.2. Direction Finding | 1.2.1. Obtain and decode direction finding information | 3 | e.g. ADF/UDF/VDF; QDM; QDR; QTE |
| **2. AIR TRAFFIC MONITOR** Students shall operate the air traffic monitoring equipment. | | | |
| 2.1. Use of Air Traffic Monitor | 2.1.1. Use air traffic monitor | 3 | |
| **3. OTHER EQUIPMENT** | | | |
| 3.1. Anti-incursion Equipment | 3.1.1. Take account of data from anti-incursion equipment | 2 | Anti-incursion equipment |
| 3.2. Known New Developments | 3.2.1. Be aware of new developments | 0 | e.g. Voice recognition |
| **4. AUTOMATION IN ATS** Students shall extract appropriate information from automated data. | | | |
| 4.1. Aeronautical Fixed Tele-communications Network (AFTN) | 4.1.1. Decode AFTN messages | 3 | e.g. Movement and control messages; NOTAM; SNOWTAM; BIRDTAM |
| 4.2. On-line Data Interchange (OLDI) | 4.2.1. Operate electronic data transfer equipment | 3 | Accuracy; Speed and safety; Data links; Sequencing systems; Automated information and co-ordination |
| **5. OPERATING POSITIONS** Students shall identify and operate the equipment provided. | | | |
| 5.1. Aerodrome Flight information (Tower) | 5.1.1. Identify equipment in an operating position | 3 | e.g. Flight progress board; Flight data display; Radio; Telephone; Maps and charts; Stripprinter; Teleprinter; Clock; Information monitors (CCIS); Radar displays |
| | 5.1.2. Obtain information from equipment | 3 | e.g. Obtain information from wind direction indicator |

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## SUBJECT 9: PROFESSIONAL ENVIRONMENT

The general objective is:
Students shall identify the need for close co-operation with other agencies concerned with aerodrome flight information service.

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| **1. OTHER AGENCIES** Students shall consider the role of other operators which affect aerodrome operations. | | | |
| 1.1. Contributors to Aerodrome Operations | 1.1.1. Characterise civil and military Air Traffic Services (ATS) facilities | 2 | Preferably by study visits: TWR; APP; ACC; AIS; RCC; Radar; Air defence unit |
| | 1.1.2. Describe aerodrome facilities and services | 2 | Preferably by study visits: Fire and Emergency services; Engineering support |
| 1.2. Customer Relations | 1.2.1. Identify the role of ATS as a service provider | 3 | |
| | 1.2.2. Characterise the requirements of the aerodrome users | 2 | e.g. Aircraft: Civil; Military; Scheduled; Business; Private; Recreational |
| | 1.2.3. Characterise the requirements of the airport operator | 2 | Aerodrome authority; Operator; Owner |
| 1.3. Familiarisation Flights | 1.3.1. Participate in flight familiarisation programmes, where available | 3 | |
| | 1.3.2. Participate in flight simulator programmes, where available | 3 | |

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## SUBJECT 10: UNUSUAL/EMERGENCY SITUATIONS

The general objective is:
Students shall manage air traffic in Unusual/Emergency situations.

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| **1. General** | | | |
| 1.1. General | 1.1.1. List unusual situations | 1 | e.g. Engine failure; Hydraulic failure; Fire on board; Lack of fuel; Bird strike; CASEVAC flight; Hijack; Weather avoidance; Unknown traffic conflict; Radio failure; Transponder failure; Weather/ technical Diversion |
| | 1.1.2. Apply the recommended procedures for given unusual situations | 3 | |
| 1.2. Radio Failure | 1.2.1. Apply procedures when a controller experiences complete or partial failure of ground radio communication equipment | 3 | |
| | 1.2.2. Explain the procedures to be followed when a pilot experiences complete or partial radio failure | 2 | e.g. Civil; Military; Special national procedures |
| | 1.2.3. Explain the procedures to be followed when a military aircraft experiences complete or partial radio failure | 2 | |
| 1.3. Diversions | 1.3.1. Provide flight information to diverting aircraft | 4 | Nearest most suitable aerodrome; Aerodrome Information |
| | 1.3.2. Provide navigational assistance to diverting aircraft | 4 | Track/heading; Distance; Other Navigational assistance |

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## SUBJECT 11: DEGRADED SYSTEMS CAPABILITY

Not applicable in this Module 'Aerodrome Flight Information Service Instrument Rating'

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## SUBJECT 12: AERODROMES

The general objective is:
Students shall recognise and understand the design and layout of Aerodromes.

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| **1. GENERAL** | | | |
| 1.1. Standards and Recommended Practices | 1.1.1. Explain the difference between standards and recommended practices | 2 | ICAO ANNEX 14 |
| 1.2. Definitions | 1.2.1. Describe the general layout of an aerodrome | 2 | ICAO ANNEX 14 |
| | 1.2.2. Define the component parts of an aerodrome | 1 | ICAO ANNEX 14, e.g. Aerodrome elevation; Reference point; Apron; Movement area; Manoeuvring area |
| 1.3. Co-ordination | 1.3.1. Identify the information that has to be passed between Air Traffic Services (ATS) and the airport authority | 3 | Airport conditions; Fire/Rescue category; Condition of ground equipment and NAVAIDs; AIRAC; ICAO ANNEX 14 |
| **2. MOVEMENT AREA** | | | |
| 2.1. Movement Area | 2.1.1. Describe Movement Area | 2 | ICAO ANNEX 14 |
| | 2.1.2. Explain the marking of obstacles and unusable or unserviceable areas | 2 | Flags; Signs on pavement; Lights |
| | 2.1.3. Identify the conditions of the movement area that have to be passed to aircraft | 3 | |
| 2.2. Manoeuvring Area | 2.2.1. Describe manoeuvring area | 2 | ICAO ANNEX 14 |
| | 2.2.2. Describe Taxiway | 2 | |
| | 2.2.3 Describe the daylight marking on taxiways | 2 | |
| | 2.2.4 Describe taxiway lighting | 2 | |

| **TOPIC /** SUBTOPIC | **OBJECTIVES** Students shall .... | **L** | **CONTENT** |
|---|---|---|---|
| 2.3. Runways | 2.3.1. Describe runway | 2 | Runway; Runway surface; Runway strip; Shoulder; Runway end safety areas; Clearways; Stopways |
| | 2.3.2. Describe instrument runway | 2 | ANNEX 14 |
| | 2.3.3. Describe non-instrument runway | 2 | ANNEX 14 |
| | 2.3.4. Explain declared distances | 2 | TORA; TODA; ASDA; LDA |
| | 2.3.5. Explain the differences between ACN and PCN | 2 | Strength of Pavements |
| | 2.3.6. Explain the numbering system and orientation of runways | 2 | Deka degrees; Left; Centre; Right |
| | 2.3.7. Describe the daylight markings on runways | 2 | e.g. Colour; Designation; Centreline; Threshold; Aiming point; Fixed distance; Touchdown zone; Side strip |
| | 2.3.8. Describe runway lights | 2 | e.g. Colour; Centreline; Intensity; Edge; Touchdown zone; Threshold; Barrettes |
| | 2.3.9. Explain the functions of visual landing aids | 2 | e.g. AVASI; VASI; PAPI |
| | 2.3.10. Describe the approach lighting systems | 2 | Centre line; cross bars; Stroboscopic; Colours; Intensity and brightness |
| | 2.3.11. Characterise the effect of water/ice on runways | 2 | Damp; Wet; Water patches; Flooding; Snow; Slush; Ice |
| | 2.3.12. Describe braking action | 2 | |
| | 2.3.13. Explain the runway visual range | 2 | |
| **3. OBSTACLES** | | | |
| 3.1. General | 3.1.1. Explain the standards and recommendations for obstacle restrictions | 2 | Obstacle limitation surfaces; Obstacle limitation requirements; Objects outside the obstacle limitation surfaces; Other obstacles |
| 3.2. Obstacle Limitation Surfaces | 3.2.1. Explain obstacle clearance surfaces | 2 | Outer horizontal; Conical; Inner approach; Transitional; Inner transitional; Balked landing; Take off climb |

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