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Specification of Training Tools and Methods Aeronautical Information Services

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Abstract

This guideline document outlines different training tools and methods suitable for Aeronautical Information Services (AIS) training.

It proposes a method for the classification of training objectives and details different training events. It also suggests a possible organisation of the training documentation. To illustrate this principle, the guideline details the training objectives of four subjects and proposes associated training plans with examples of test items.

Keywords

Methodology	Mode of Delivery	Training Event	Training Technique
Performance Objective	Progress Test	Training Event Plan	Syllabus
Assessment	Mastery Test	Media	Learning Rate

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EXECUTIVE SUMMARY

This document on the 'Specification of Training Tools and Methods' for the development and provision of Aeronautical Information Services (AIS) training has been produced to support the EATCHIP guidelines for 'Common Core Content and Training Objectives for Basic AIS Training (Phase 1 *Ab Initio*)' and '(Phase 2 Specialist)' (EATCHIP, 1997a and 1998a).

It is intended that this systematic approach to institutional training for the Aeronautical Information Services will assist training managers, course designers and AIS instructors to develop and deliver harmonised training to AIS students. The methodology developed by the ICAO TRAINAIR Programme, in particular TRAINAIR's 'Training Development Guideline' (ICAO, 1991) has been used as far as possible as a model for this guideline. The principles of the methodology are presented in Chapter 2, 'Methodology for Development and Provision of Training' and are further developed in Chapter 5, 'Detailed Description of Training Methodologies and Techniques'.

Chapter 3.1 details selected extracts from four subjects (Air Law, NOTAM Office (NOF), ATS Reporting Office (ARO) and Publications and Charts) were taken from the documents entitled 'Common Core Content and Training Objectives for Basic AIS Training (Phase 1 *Ab Initio*)' and '(Phase 2 Specialist)' (EATCHIP, 1997a and 1998a) to illustrate how these guidelines might be applied to training events, training event plans and assessment of student performance.

Training plans (see Chapter 3.2) show the layout of syllabus together with the type of training event and the educational material recommended.

In Chapter 3.3 **training event plans** detail, in addition to items described in the training plan, a breakdown of the learning session including suggested time allocation and a checklist of items relating to specific objectives. A two-page guide (see Chapter 3.3.1) gives an explanation of the creation of a training event plan.

This document does not give detailed examples of lesson plans but an indication of the way in which individual instructors can further develop training event plans to their own requirements.

In Chapter 5.7 examples of **assessment** describe performance objectives, derived from the general objectives (for mastery tests) and from the training objectives (for progress tests). These are supported by selected test items (questions) for mastery and progress tests.

The philosophy of this guideline on the 'Specification of Training Tools and Methods - Aeronautical Information Services' has been adopted from the document produced by Drafting Group 4 (DG4) of the Task Force on Common Core Content (TFCCC) for the training of Air Traffic Controllers (ATCOs), 'Volume 1: Guideline on Tools and Methodology for the Development and the Specification of Training Tools and Methods - Air Traffic Control' (EATCHIP, 1998b), and adapted to the needs of AIS training.

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1. INTRODUCTION

1.1 Background

The European Air Traffic Control Harmonisation and Integration Programme (EATCHIP) was created to produce for the States of the European Civil Aviation Conference (ECAC) an environment covering all aspects of Air traffic Services (ATS), including Human Resources (HUM), which will enable greater harmonisation within Europe for the ever increasing levels of air traffic. In its 'strategy for the 90s' (ECAC, 1990), ECAC called specifically for the definition of 'Guidelines for the selection, training and licensing of Air Traffic Services Staff in the ECAC Member States'. A Task Force was established by the Training Sub-Group (TSG) of the Human Resources Team (HRT) to produce guidelines for 'Common Core Training and Training Objectives for Basic AIS Training' (EATCHIP, 1997a and 1998a).

The AIS Training Task Force (AIS-TF) has adapted Volume 1 of the 'Specification of Training Tools and Methods', produced by the TFCCC's DG4, to the needs of the Aeronautical Information Services.

1.2 Aim

The AIS-TF has produced the 'Specification of Training Tools and Methods for Basic AIS Training' with the aim of providing guidelines that will assist AIS course designers and instructors in the preparation of training plans, training event plans and tests using the 'Common Core Content for Basic AIS Training (Phase 1 *Ab Initio*)' and '(Phase 2 Specialist)' (EATCHIP, 1997a and 1998a).

1.3 Layout

Taking selected extracts on four subjects from the two guideline documents on basic AIS training, the AIS-TF has presented examples of training plans, training event plans (lesson plans), mastery tests and progress tests.

The templates for training events, training event plans and performance objectives can be applied to any subject in the syllabus and their content developed to suit national training requirements. By applying this methodology (see [Chapter 2](#)) it should be possible to achieve greater harmonisation of AIS training.

Examples of test items in mastery and progress tests have been kept to the minimum so as to preserve the integrity of testing and to avoid this document becoming too bulky.

The 'Training Development Guideline' from ICAO's TRAINAIR Programme (ICAO, 1991) has been used as far as possible as reference material in the design of training plans, training event plans and in the choice of mode of delivery.

Chapter 3.2.1 on 'Air Law' will detail plans based mainly on classroom activities.

The selected extracts from NOTAM Office (NOF) (see Chapter 3.2.2), ATS Reporting Office (ARO) (see Chapter 3.2.3) and Publications and Charts (see Chapter 3.2.4) will detail plans based mainly on classroom activities and Computer Based Training (CBT).

These modules provide examples of possible approaches to deliver the common core content (syllabus).

In Chapter 5 of this document are a number of sections detailing the methodology for the development and provision of AIS training e.g. taxonomy, mode of delivery and training techniques.

1.4 Co-ordination

The training has not been considered in isolation. Its links backward (to selection) and forward (to job description) have been studied and the available information has been extracted from the studies currently being carried out in the areas of 'AIS Concept' (EATCHIP, 1998c) and 'AIS Staff Profile Requirements' (EATCHIP, 1997b).

2. METHODOLOGY FOR DEVELOPMENT AND PROVISION OF TRAINING

2.1 Training Structure and Definitions

2.1.1 Training Structure

The structure originates in the Guidelines for 'Common Core Content and Training Objectives for Basic AIS Training (Phase 1 *Ab Initio*)' and '(Phase 2 Specialist)', now released as deliverables (EATCHIP, 1997a and 1998a). These guidelines will be referred to as the 'syllabus'. A **syllabus** is a listing of subjects and topics showing the training necessary to fill the training gap and achieve the course aim.

In both Phases 1 and 2 of basic AIS training the syllabus is divided into ten **subjects** based on the development work carried out by the AIS-TF and with reference to 'ICAO Technical Assistance Guideline - Aeronautical Information Officer (ICAO, 1981). The subjects are divided into **topics**, these topics being themselves divided into **sub-topics**.

A **general objective** corresponds to each subject. A general objective is a goal; it describes the direction to move in rather than a detailed quantitative objective.

Training objectives are aligned with sub-topics. A training objective should be a clear statement of what the student has to do, at a particular stage of training.

The AIS-TF has increased the readability of the objectives in the syllabus by shortening them to an action verb detailing the expected terminal performance.

A **content** helps to detail the sub-topics.

A **performance objective** is a clear and unambiguous statement of what a student is expected to be able to do - terminal **performance** or terminal behaviour, with the minimum level of acceptable performance - the **standard**, in terms of quality, quantity and time allowed for completion, and the **conditions** under which the performance is to be carried out. The performance objective clearly establishes a link between the training objective and the method required to assess if this training objective has been reached.

2.1.2 Taxonomy of Training Objectives

A taxonomy is a classification based on explicit principles. The purpose of a taxonomy in the training domain is to classify training objectives, according to the level of learning and performance required.

This document makes use of the taxonomy adopted by the AIS-TF - defined as Levels 0 to 3 - and notes two higher level objectives (Levels 4 and 5).

- Level 0 Not performance-related. 'To be aware of; to be familiar with'.
- Level 1 Requires a basic knowledge of the subject. It is the ability to remember essential points; the trainee is expected to memorise data and to retrieve it.
- Level 2 Requires an understanding of the subject sufficient to enable the student to discuss intelligently. The individual is able to represent for himself/herself certain objects and events and to act upon these objects and events.

The verb 'to appreciate' means that the student is able to state the plan but not required to apply it. In a given situation the student will say that co-ordination should be done and with whom (the student appreciates the necessity for co-ordination). In a practical situation (i.e. Level 3) the student will co-ordinate - that is he/she will apply the techniques and procedures learnt.

- Level 3 Requires a thorough knowledge of the subject and the ability to apply it with accuracy. The student should be able to make use of his/her repertoire of knowledge to develop plans and activate them.

Note : For a more complete explanation of the taxonomy proposed, including Levels 4 and 5, please refer to Chapter 5.1.

2.1.3 Definition of Training Phases

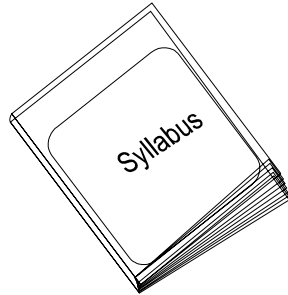
Table 1: Definition of Training Phases

TRAINING PHASE	DEFINITION
Institutional Training¹	Training that is provided in an establishment designed or designated specifically for training and staffed for that purpose.
Basic training (Phase 1 <i>Ab Initio</i>)	Training designed to impart fundamental knowledge and skills to enable student Aeronautical Information Services Personnel to progress to specialised AIS training.
Basic training (Phase 2 Specialist)	Specialised AIS training to provide knowledge and skills related to a job category and appropriate to the discipline to be pursued in the AIS environment (ARO, NOF and Publications).
Operational Training	Training given in the operational work situation and following institutional training. It comprises transition training, pre-On-the-Job Training (pre-OJT) and On-the-Job Training (OJT).
Transition Training	Phase following basic training during which site-specific theoretical knowledge and understanding will be transferred to the trainee using a variety of methods, and during which skills will be developed through the use of site-specific simulations.
Pre - On-the-Job Training (pre-OJT)	Phase of locally-based training during which extensive use of simulation, using site-specific facilities, will enhance the development of previously acquired routines and abilities to an exceptionally high level of achievement.
On-the-Job Training (OJT)	'Live training' where previously acquired skills and routines are further developed and consolidated under the supervision of a qualified coach in an operational situation.
Continuation Training	Provision of training related to a job category in order to increase knowledge and skills and/or to prepare for new technologies.
Conversion Training	Provision of knowledge and skills appropriate to a change in job category, environment and/or systems.
Refresher Training	The process of further training in work currently performed in order to improve job performance. Also, further training given in skills previously acquired but in which the individual may not currently be up to standard.

¹ For the Aeronautical Information Services, this phase of training may be conducted at a training establishment, an operational training unit or by an approved method of distance learning.

2.2 Structure of Training Documentation

1. Syllabus



2. Training Plan + Assessment Plan



3. Training Event Plans



2.2.1 Syllabus

The subjects to be studied in a particular course. A **syllabus** is a listing of subjects and topics showing the training necessary to fill the training gap and achieve the course aim. For the purposes of this document syllabus refers to the 'Common Core Content and Training Objectives for Basic AIS Training (Phase 1 *Ab Initio*)' and '(Phase 2 Specialist)' (EATCHIP, 1997a and 1998a).

2.2.2 Training Plan

A **training plan** is a syllabus with additional information. The training plan details for each subject and topic the training requirements, the methods of achievement and usually, the time scale for achievement. It provides an earlier and more general view than the day-to-day training programme.

A **training programme** is an implementation of the training plan in terms of training events set out in a chronological sequence and showing the time allowed for each, the place, the features of instruction to be used and the person responsible for giving it.

2.2.3 Assessment

A basic principle has been adopted - assessment is an integral part of the training activity. The assessment plan should therefore be integrated into the training plan from the beginning of its development.

There are two broad categories of assessment:

1. **Formative assessment** is a verbal or written factual assessment given for the purpose of personal development and which should have an important and **lasting** influence on that person's abilities or attitudes. It should be only for that person's attention or use.

The formative assessment is done through **progress tests**. Progress tests determine whether a trainee has accomplished intermediate objectives and provide feedback to trainee and instructor on the progress being made. Progress test items are derived from the training objectives.

2. **Summative assessment** is a verbal and written factual judgement which represents a summary of the trainees attitudes and abilities over a period of time.

The summative assessment is done through **mastery tests**. Mastery tests determine whether a trainee has accomplished terminal training objectives for a particular phase of training. Mastery test items are derived from the general objectives.

For both progress and mastery tests, detailed performance objectives must be written.

Details on the functions and techniques of assessment can be found in [Chapter 5.7](#).

2.2.4 Training Event Plan

The **training event plan** (lesson plan) is the document to be used by the instructor when preparing and when providing the training. It recalls the objectives of the training event and its type. It gives a timeline, and indicates material references and hints for the performance.

A **training event** is a set of actions (instructional events) identified in the training plan (and later in the training program and in the student timetable) as a smaller unit. The training event has a name (e.g. lesson, exercise) but is more accurately described by the association of a training technique, a learning rate, a media and a mode of delivery.

2.2.5 List of Training Events Used in AIS Training

Training Events

- ⇒ Lecture
 - Lesson
 - Demonstration

- ⇒ Guided CBT
 - Exercise

- ⇒ Hands-on

- ⇒ Visit

- ⇒ Analytical simulation

- ⇒ Case Study
 - Role-play

Additional Training Events

- ⇒ Briefing
 - Tutoring
 - Debriefing

2.3 Description of Training Events

2.3.1 Classification

For the purpose of classification they are described by a combination of four properties:

- the training technique,
- the time control (or the learning rate),
- the media,
- the mode of delivery.

It is only in this way that the classification is meaningful.

This approach allows us to keep each list simple and make it easy to ensure that there is a common understanding of the individual components while the combination provides a powerful tool to characterise the methods used in AIS training.

An additional factor is the training style that is determined by the instructor.

Here is an example of the properties of a training event:

Training Technique	Time Control (Learning Rate)	Media	Mode of Delivery
Interactive training	Self-paced	Multimedia computer	Individualised training material dependent

However, it is sometimes possible and useful to summarise the properties into a title. For instance, the preceding session will simply be called 'Guided CBT'. This simplification will be done every time it does not lead to confusion.

Guided CBT			
Interactive	Self	MMC	ITMD

Thus, the training event has a name that is easy to remember but is more accurately described by the association of a mode of delivery, a media, a training technique and a learning rate.

Detailed descriptions of training events and their properties are to be found in Chapters 5.2 to 5.6.

2.3.2 Properties of Training Events

A listing of the various properties (and their abbreviations) that combine to form a training event.

2.3.2.1 *Training Techniques*

Lect:	Lecture
Lesson:	Lesson
Demo:	Demonstration
Case:	Case study
Sup. Pract:	Supervised practice
Interactive:	Interactive training
Simul:	Simulation
Role:	Role-play
Brief:	Briefing
Tutoring:	Tutoring

2.3.2.2 *Learning Rate*

Self:	Self-Paced Learning
Rstd:	Time-restricted learning
Real:	Real time

2.3.2.3 *Media*

Media is the physical means by which an instructor communicates a message embedded with educational materials. One medium can use several supports. For instance, a multimedia computer might use graphics, video and sound.

In this document, we will not attempt to list all of the many types of support and educational materials.

Eqpt:	Real equipment, i.e. operational
Sim:	Simulator
PTT:	Part-task trainer
MMC:	Multimedia computer
AV:	Audiovisual aids
Vis:	Visual aids
Aud:	Audio aids
Txt:	Text

2.3.2.4 *Mode of Delivery*

The mode of delivery indicates the way training is delivered.

The two main dimensions of mode of delivery are:

- whether it should be individualised or given in a group,
and
- whether the training should be based on validated training material or should be left to the judgement of the instructor.

The choice of **mode of delivery** for each module and each instructional event within each module depends on many factors (see [Chapter 5.5](#) for more detailed descriptions).

When detailing the training module, the course developer should specify the mode of delivery by using [Table 2](#) below.

Table 2: Mode of Delivery

	Material-dependent	Instructor-dependent
Group Training	GTMD	GTID
Individualised Training	ITMD	ITID

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3. EXAMPLES OF TRAINING

3.1 Syllabus

3.1.1 Air Law

3.1.2 NOTAM Office

3.1.3 ATS Reporting Office

3.1.4 Publications and Charts

Note: The pages in this chapter are extracted from the Guidelines 'Common Core Content and Training Objectives for Basic AIS Training (Phase I *Ab Initio*)' and '(Phase 2 Specialist)' (EATCHIP, 1997a and 1998a).

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3.1.1 Air Law

The general objectives for Air Law are:

- (i) to enable students to appreciate the basic principles of Air Law;
- (ii) to enable students to apply the regulations governing Rules of the Air, airspace and flight planning;
- (iii) to ensure that students understand the authority vested in AIS Personnel and the means by which that authority is exercised.

TOPIC / SUB-TOPIC	OBJECTIVES <i>Students shall...</i>	L	CONTENT
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1. INTRODUCTION			
1.1. <i>National and International Organisations</i>	1.1.1. state the necessity for Air Law	1	ICAO, ECAC, EU, JAA, EUROCONTROL, national authority
	1.1.2. name the key national and international aviation organisations	1	
	1.1.3. describe the impact these organisations have on air traffic operations and their interaction with each other	2	
2. INTERNATIONAL ORGANISATIONS			
2.1. <i>ICAO</i>	2.1.1. explain the purpose and function of ICAO	2	SARPS, PANS, SUPPS, ICAO Annexes and Documents, ICAO Regional Offices
	2.1.2. describe the methods by which ICAO notifies and implements legislation	2	
2.2. <i>Other Agencies</i>	2.2.1. describe the purpose and function of other international agencies and their relevance to air traffic operations	2	ECAC, EU, JAA, EUROCONTROL

TOPIC / SUB-TOPIC	OBJECTIVES <i>Students shall...</i>	L	CONTENT
2.3. <i>International Aviation Associations</i>	2.3.1. describe the purpose of international controller, pilot, airline operator and airspace user associations and their interrelation with air traffic operations	2	IFATCA, IFALPA, IATA, IAOPA, IACA
3. NATIONAL ORGANISATIONS			
3.1. <i>General</i>	3.1.1. describe the purpose and function of appropriate national agencies and their relevance to air traffic operations	2	Civil Aviation Authority/Administration (CAA) agencies, government agencies, military ATS
3.2. <i>National Legislative Procedures</i>	3.2.1. describe the methods by which legislation is implemented and notified	2	NOTAM, AIPs, AICs, national procedures
3.3. <i>National Regulatory Body</i>	3.3.1. name the body responsible for ensuring that legislation and operational procedures are enforced	1	
	3.3.2. describe how the body carries out its safety regulation responsibilities	2	
3.4. <i>National Aviation Associations</i>	3.4.1. describe the purpose of national controller, pilot, airline operator and airspace user associations, and their interrelation with air traffic operations	2	

TOPIC / SUB-TOPIC	OBJECTIVES <i>Students shall...</i>	L	CONTENT
4. RULES AND REGULATIONS			
4.1. <i>General</i>	4.1.1. list the types of Air Navigation Services (ANS)	1	ATM (ATS, ATFM, ASM), AIS, MET, COM, SAR
	4.1.2. state the objectives of the Air Traffic Services (ATS)	1	ICAO Annex 11 Chap. 2.2
	4.1.3. list the types of Air Traffic Services (ATS)	1	ATC, Advisory, FIS, Alerting
4.2. <i>Airspace</i>	4.2.1. explain airspace classification	2	Classes A-G and national application
	4.2.2. differentiate between the different types of airspace	2	Such as: control zones, control areas, airways, upper and lower airspace, FIR
4.3. <i>Rules of the Air</i>	4.3.1. explain the international Rules of the Air	2	ICAO Annex 2 Chaps. 2, 3, 4, and 5
	4.3.2. explain any notified national differences with ICAO	2	National legislation
	4.3.3. be aware of the influence of relevant general flight rules on ATC	0	ICAO Annex 2 Chap. 3
	4.3.4. differentiate between flying in accordance with visual and instrument flight rules (VFR and IFR)	2	ICAO Annex 2 Chaps. 4 and 5

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3.1.2 NOTAM Office

The general objectives for the NOTAM Office are:

- (I) to describe and explain the purpose, function and significance of NOTAM;
- (II) to prepare, distribute and store outgoing NOTAM;
- (III) to receive and process incoming NOTAM.

Selected extracts from Sub-topics 1.4 and 1.5:

TOPIC / SUB-TOPIC	OBJECTIVES <i>Students shall...</i>	L	CONTENT
1. NOTAM			
1.4. <i>NOTAM Qualification</i>	1.4.1. explain the purpose of NOTAM qualification (Q-Line)	2	ICAO Doc 8126 Chap. 4, NOTAM Selection Criteria (NSC), automation
	1.4.2. state the general rules relating to NOTAM qualification	1	NOTAM Selection Criteria
	1.4.3. explain NOTAM qualifiers	2	FIR, NOTAM code, traffic, purpose, scope, lower/ upper, geographical reference
	1.4.4. decode and encode NOTAM qualifiers	3	
1.5. <i>NOTAM Items</i>	1.5.1. explain the purpose of NOTAM items	2	
	1.5.2. describe NOTAM item content	2	Items A-G, ICAO Annex 15 App. 6 (proposed Item 'X')
	1.5.3. decode and encode NOTAM items	3	

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3.1.3 Air Traffic Services Reporting Office - ARO

The general objectives for ARO are:

- (I) to accept, verify and transmit flight plans and associated messages;
- (II) to conduct an appropriate and complete briefing.

Selected extracts from Sub-topics 2.1, 2.2 and 3.1:

TOPIC / SUB-TOPIC	OBJECTIVES <i>Students shall...</i>	L	CONTENT
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2. FLIGHT PLAN AND RELATED MESSAGES			
2.1. <i>Introduction</i>	2.1.1. recall different types of flight plan	1	FPL, AFIL and RPL
2.2. <i>ICAO Model Flight Plan Form (FPL)</i>	2.2.1. describe the three parts of a FPL form	2	ICAO Doc 4444 App. 2, COM, ATS data and supplementary information
	2.2.2. explain all the items contained in a FPL form	2	Items and their content
	2.2.3. encode and decode flight plans	3	ICAO Doc 4444

3. PRE-FLIGHT BRIEFING			
3.1. <i>Content of Pre-flight Briefing</i>	3.1.1. list the content of a pre-flight briefing	1	NOTAM, SNOWTAM, NAT tracks, MET info, charts, ATFM messages, national publications
	3.1.2. explain the scope of the available briefing material	2	
	3.1.3. appreciate the significance of this material to the customer	2	
	3.1.4. decode the abbreviations used in the briefing material	3	ICAO Doc 8400
	3.1.5. interpret the information given in the briefing material	3	

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3.1.4 Publications and Charts

The general objectives for Publications and Charts are:

- (I) to collect and prepare aeronautical information for publication in the appropriate format;
- (II) to prepare and publish aeronautical charts.

Selected extracts from Sub-topics 1.1 and 5.1:

TOPIC / SUB-TOPIC	OBJECTIVES <i>Students shall...</i>	L	CONTENT
1. BASIC STEPS FOR PUBLICATION			
1.1. <i>Collection of Information</i>	1.1.1. list the authorised sources of raw data	1	ICAO Doc 8126 Chaps. 1 and. 3
	1.1.2. list channels of communication for submission of raw data	1	ICAO Doc 8126 Chaps. 2 and 3
	1.1.3. describe the area of responsibility for publication	2	
	1.1.4. recognise the need for recording and filing raw data	1	ICAO Doc 8126 Chap. 3
	1.1.5. file raw data	3	
5. AERONAUTICAL CHARTS			
5.1. <i>Aeronautical Charts</i>	5.1.1. explain the need for aeronautical charts	2	ICAO Annex 15 Chap. 4, ICAO Doc 8697 Chap. 2
	5.1.2. list types of aeronautical charts	1	ICAO Annex 15 Chap. 4, ICAO Annex 4
	5.1.3. describe the format and layout of aeronautical charts	2	ICAO Annex 4
	5.1.4. state the information contained in aeronautical charts	1	ICAO Annex 4, ICAO Doc 8697
	5.1.5. decipher the data depicted on charts	3	ICAO Annex 4 App. 2, ICAO Doc 8126 App. E, ICAO Doc 8697 Chap. 7
	5.1.6. describe the operational function of aeronautical charts	2	ICAO Annex 4 Chap. 2, ICAO Doc 8697 Chap. 2
	5.1.7. select chart(s) to be inserted in an appropriate section of the AIP	3	ICAO Doc 8126 App. H

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3.2 Training Plans

3.2.1 Air Law

3.2.2 NOTAM Office

3.2.3 ATS Reporting Office

3.2.4 Publications and Charts

Note: The training plans illustrated on the following pages are typical examples and do not represent existing material. The 'time' column indicates, in minutes, the minimum recommended time.

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3.2.1 Air Law

3.2.1.1 General Objectives

The general objectives for Air Law are:

- (i) to enable students to appreciate the basic principles of Air Law;
- (ii) to enable students to apply the regulations governing Rules of the Air, airspace and flight planning;
- (iii) to ensure that students understand the authority vested in AIS Personnel and the means by which that authority is exercised.

3.2.1.2 Training Plan for Air Law

Institutional Training /Basic

LAW	AIR LAW				
Objectives	Training Content	Level	Training Event	Educational Material: Type / References	Time
1 INTRODUCTION					
1.1 National and International Organisations					
1.1.1 state the necessity for Air Law		1	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	05
1.1.2 name the key national and international aviation organisations	ICAO, ECAC, EU, JAA, EUROCONTROL, national authority	1	Lesson <i>Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	05
1.1.3 describe the impact these organisations have on air traffic operations and their interaction with each other		2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	10

Institutional Training /Basic

LAW	AIR LAW					
Objectives	Training Content	Level	Training Event	Educational Material: Type / References	Time	
2 INTERNATIONAL ORGANISATIONS						
2.1 ICAO						
2.1.1	explain the purpose and function of ICAO		2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	25
2.1.2	describe the methods by which ICAO notifies and implements legislation	SARPS, PANS, SUPPS, ICAO Annexes and Documents, ICAO Regional Offices	2	Lesson <i>Lesson Rstd. Vis or MMC AV GTMD</i>	OHP / computer presentation, film/video	30
2.2 Other Agencies						
2.2.1	describe the purpose and function of other international agencies and their relevance to air traffic operations	ECAC, EU, JAA EUROCONTROL	2	Lesson <i>Lesson Rstd. Vis and MMC AV GTMD Txt</i>	OHP / computer presentation, film / video ----- ICAO Annexes and Documents	55
2.3 International Aviation Associations						
2.3.1	describe the purpose of international controller, pilot, airline operator and airspace user associations and their interrelation with air traffic operations	IFATCA IFALPA IATA IAOPA IACA	2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	10

Institutional Training /Basic

LAW	AIR LAW					
Objectives	Training Content	Level	Training Event	Educational Material: Type / References	Time	
3 NATIONAL ORGANISATIONS						
3.1 General						
3.1.1	describe the purpose and function of appropriate national agencies and their relevance to air traffic operations	CAA agencies, government agencies, military Air Traffic Services	2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	Provided by national authority where this differs from, or goes beyond, ICAO Standards	45
3.2 National Legislative Procedures						
3.2.1	describe the methods by which legislation is implemented and notified	NOTAM AIPs AICs national procedures	2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	Provided by national authority where this differs from, or goes beyond, ICAO Standards	30
3.3 National Regulatory Body						
3.3.1	name the body responsible for ensuring that legislation and operational procedures are enforced	National methodology	1	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	Provided by national authority where this differs from, or goes beyond, ICAO Standards	05
3.3.2	describe how the body carries out it's safety regulation responsibilities		2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	Provided by national authority where this differs from, or goes beyond, ICAO Standards	15

Institutional Training /Basic

LAW	AIR LAW					
	Objectives	Training Content	Level	Training Event	Educational Material: Type / References	Time
3.4 National Aviation Associations						
3.4.1	describe the purpose of national controller, pilot, airline operator and airspace user associations and their interrelation with air traffic operations	National bodies	2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	Provided by national authority where this differs from, or goes beyond, ICAO Standards	20
4 RULES AND REGULATIONS						
4.1 General						
4.1.1	list the types of Air Navigation Services (ANS)	ATM (ATS, ATFM, ASM) AIS, MET, COM, SAR	1	Guided CBT <i>Interactive Self- MMC ITMD</i> + Vis	----- ICAO Posters	30
4.1.2	state the objectives of the Air Traffic Services (ATS)	ICAO Annex 11, Chap. 2.2	1	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation, ICAO Documents, manual of ATC (national)	15
4.1.3	list the types of Air Traffic Services (ATS)	ATC Advisory FIS Alerting	1	Lesson <i>Lesson Rstd. AV GTMD</i>	Film / video	30

Institutional Training /Basic

LAW	AIR LAW					
Objectives	Training Content	Level	Training Event	Educational Material: Type / References	Time	
4.2 Airspace						
4.2.1	explain airspace classification	Classes A-G and national application	2	Guided CBT <i>Interactive Self MMC ITMD</i> + Vis	Provided by national authority where this differs from, or goes beyond, ICAO Standards ----- ICAO Posters	75
4.2.2	differentiate between the different types of airspace	Control zones, control areas, airways, FIR, upper and lower airspace, etc.	2	Guided CBT <i>Interactive Self MMC ITMD</i> + Vis	Provided by national authority where this differs from, or goes beyond, ICAO Standards ----- ICAO Posters	45
4.3 Rules of the Air						
4.3.1	explain the international Rules of the Air	ICAO Annex 2 Chaps. 2, 3, 4, and 5	2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	45
4.3.2	explain any notified national differences with ICAO	National legislation	2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	40
4.3.3	be aware of the influence of relevant general flight rules on ATC	ICAO Annex 2 Chap. 3	0	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	40
4.3.4	differentiate between flying in accordance with visual and instrument flight rules (VFR and IFR)	ICAO Annex 2 Chaps. 4 and 5	2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	35

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3.2.2 NOTAM Office

3.2.2.1 General Objectives

The general objectives for the NOTAM Office are:

- (I) to describe and explain the purpose, function and significance of NOTAM;
- (II) to prepare, distribute and store outgoing NOTAM;
- (III) to receive and process incoming NOTAM.

3.2.2.2 Training Plan for NOTAM Office

Institutional Training/Basic

NOF	NOTAM OFFICE					
Objectives	Training Content	Level	Training Event	Educational Material: Type / References	Time	
1	NOTAM					
1.4	NOTAM Qualification					
1.4.1	explain the purpose of NOTAM qualification (Q-Line)	ICAO Doc 8126 Chap. 4, NSC, automation	2	Lesson <i>Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	45
1.4.2	state the general rules relating to NOTAM qualification	NSC	1	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	40
1.4.3	explain NOTAM qualifiers	FIR, NOTAM Code, traffic purpose, scope, lower and upper geographic reference	2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	75
1.4.4	decode and encode NOTAM qualifiers		3	Exercise <i>Sup. Pract Rstd. Txt or MMC ITMD</i>	Exercise templates	3x45

Institutional Training/Basic

NOF	NOTAM OFFICE				
Objectives	Training Content	Level	Training Event	Educational Material: Type / References	Time
1.5 NOTAM Items					
1.5.1 explain the purpose of NOTAM items		2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	20
1.5.2 describe NOTAM item content	Items A-G, ICAO Annex 15 App. 6, (proposed Item 'X')	2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	4x45
1.5.3 decode and encode NOTAM items		3	Case Study <i>Case Rstd. Txt / MMC ITMD</i>	Exercise template	2x45

3.2.3 Air Traffic Services Reporting office - ARO

3.2.3.1 General Objectives

The general objectives for ARO are:

- (I) to accept, verify and transmit flight plans and associated messages;
- (II) to conduct an appropriate and complete briefing.

3.2.3.2 Training Plan for Air Traffic Services Reporting Office

Institutional Training/Basic

ARO	ATS REPORTING OFFICE					
Objectives	Training Content	Level	Training Event	Educational Material: Type / References	Time	
2 FLIGHT PLAN AND RELATED MESSAGES						
2.1 Introduction						
2.1.1 recall different types of flight plan	FPL, AFIL and RPL	1	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	05	
2.2 ICAO Model Flight Plan Form						
2.2.1 describe the three parts of FPL form	ICAO Doc 4444 App. 2, COM, ATS data and supplementary info	2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	40	
2.2.2 explain all the items contained in a FPL form	Items and their content	2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i> +Vis	OHP / computer presentation ----- ICAO Poster	7x45	
2.2.3 encode and decode flight plans	ICAO Doc 4444	3	Exercise <i>Sup. Pract Rstd. Txt or MMC ITMD</i>	Exercise template	6x45	

Institutional Training/Basic

ARO	ATS REPORTING OFFICE					
Objectives	Training Content	Level	Training Event	Educational Material: Type / References	Time	
3 PRE-FLIGHT BRIEFING						
3.1 Content of Pre-flight Briefing						
3.1.1	list the content of a pre-flight briefing	NOTAM, SNOWTAM, NAT tracks, MET info, charts, ATFM messages, national publications	1	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	45
3.1.2	explain the scope of the available briefing material		2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	40
3.1.3	appreciate the significance of this material to the customer		2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	Computer presentation OHP view foils	35
3.1.4	decode the abbreviations used in the briefing material	ICAO Doc 8400	3	Exercise <i>Sup. Pract Rstd. Vis or MMC ITMD</i>	Exercise template	45
3.1.5	interpret the information given in the briefing material		3	Case study <i>Case Rstd. Vis/Txt/MM C GTMD</i>	Briefing material	2x45

3.2.4 Publications and Charts

3.2.4.1 General Objectives

The general objectives for Publications and Charts are:

- (I) to collect and prepare aeronautical information for publication in the appropriate format;
- (II) to prepare and publish aeronautical charts.

3.2.4.2 Training Plan for Publications and Charts

Institutional Training/Basic

PUB	PUBLICATIONS AND CHARTS				
Objectives	Training Content	Level	Training Event	Educational Material: Type / References	Time
1 BASIC STEPS FOR PUBLICATION					
1.1 Collection of Information					
1.1.1 list the authorised sources of raw data	ICAO Doc 8126 Chaps. 1 and 3	1	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	20
1.1.2 list channels of communication for submission of raw data	ICAO Doc 8126 Chaps. 2 and 3	1	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	25
1.1.3 describe the area of responsibility for publication		2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	25
1.1.4 recognise the need for recording and filing raw data	ICAO Doc 8126 Chap. 3	1	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	10
1.1.5 file raw data		3	Hands-on <i>Sup. Pract Real Eqpt GTMD</i>	Filing system	45

Institutional Training/Basic

PUB	PUBLICATIONS AND CHARTS					
	Objectives	Training Content	Level	Training Event	Educational Material: Type / References	Time
5	AERONAUTICAL CHARTS					
5.1	Aeronautical Charts					
5.1.1	explain the need for aeronautical charts	ICAO Annex 15 Chap. 4, ICAO Doc 8697 Chap. 2	2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	30
5.1.2	list types of aeronautical charts	ICAO Annex 15 Chap. 4, ICAO Annex 4	1	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	15
5.1.3	describe the format and layout of aeronautical charts	ICAO Annex 4	2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i> + Vis + AV	OHP / computer presentation ----- Aeronautical charts ICAO video	3x45
5.1.4	state the information contained in aeronautical charts	ICAO Annex 4, ICAO Doc 8697	1	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	35
5.1.5	decipher the data depicted on charts	ICAO Annex 4 App. 2, ICAO Doc 8126 App. E, ICAO Doc 8697 Chap. 7	3	Exercise <i>Sup. Pract Rstd. Vis or MMC GTMD</i>	OHP / computer presentation / charts and ICAO Documents	3x45

Institutional Training/Basic

PUB	PUBLICATIONS AND CHARTS				
Objectives	Training Content	Level	Training Event	Educational Material: Type / References	Time
5.1.6 describe the operational function of aeronautical charts	ICAO Annex 4 Chap. 2, ICAO Doc 8697 Chap. 2	2	Lesson <i>Lesson Rstd. Vis or MMC GTMD</i>	OHP / computer presentation	45
5.1.7 select chart(s) to be inserted in an appropriate section of the AIP	ICAO Doc 8126 App. H	3	Exercise <i>Sup. Pract Rstd. Vis or MMC ITMD</i>	AIP and charts	45

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3.3 Training Event Plans

3.3.1 Explanation of a Training Event Plan

3.3.2 Air Law

3.3.3 NOTAM Office

3.3.4 ATS Reporting Office

3.3.5 Publications and Charts

Note: These examples give only an indication for the preparation of a training event plan. It is the responsibility of individual instructors to prepare detailed plans according to their requirements. Allocated timing is only a guideline.

3.3.1 Explanation of a Training Event Plan

Example : Lesson in Basic Course - Subject: 'Air Law'

Table 3: Explanation of a Training Event Plan

Event	Example Description	Explanation
Training Event Plan Identification	LAW 1/6	'Lesson' or training event n°1 of 6 for Air Law
Course Title	Basic AIS Training - Phase 1 <i>Ab Initio</i> (EATCHIP, 1997a)	Full title of course
Training Event Title	National and International Organisations	Title for this lesson derived from the syllabus (pp. 17-18)
Duration	Two periods	The duration of a training event is subject to local requirements. It is assumed that a standard period lasts between 40 and 60 minutes. The proposals in this guideline are based on 45 min.
Lesson Properties	Lesson-Rstd-Vis/MMC-GTMD	Identifies the properties of a training event (pp. 12-13)
Topic(s)	Introduction and International organisations	Taken from the syllabus (p. 17)
Sub-topic(s)	National and International Organisations, ICAO	Taken from the syllabus (p. 17)
Training Objectives	State the necessity for Air Law, etc.	Relate directly to the sub-topics (p. 17)
Level	1 or 2	The level represents the level of learning and performance required ('Taxonomy of Training Objectives'- p. 6)

Table 3: Explanation of a Training Event Plan (continued)

Event	Description	Explanation
Code	1.1.1, etc.	Refers to the identification of each individual training objective (p. 17)
Prerequisite(s)		Helps to ensure the correct sequence of training events within a course
Summary of the Objectives of this Training Event		A guidance for the instructor and a feature to open the lesson (introduction)
Indications on Assessment		A guidance for the instructor about the assessment related to this training event (p. 9 and <u>Chap. 5.7</u>)
Miscellaneous Remarks		Only if necessary as an additional guidance for the instructor
Time	00:00 - 01:30	Allocation of time (for the designated periods)
Item	Introduction: the necessity for Air Law, etc.	A list of items to be taught in the lesson. Represents also a checklist for the instructor
References		Useful if official documents or other handouts are available as reference material
Remarks		Useful as guidance or reminder to the instructor e.g. handouts, media, etc.

3.3.2 Air Law

LAW 1/6	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 1 <i>Ab Initio</i>			
Training Event Title	National and International Organisations			
Duration	Two periods			
Normal Properties	Lesson	Rstd	Vis/MMC	GTMD

Topic	1 and 2	Introduction and International Organisations
Sub-topic	1.1 and 2.1	National and International Organisations, ICAO

Training Objectives	Level	Code
State the necessity for Air Law	1	1.1.1
Name the key national and international aviation organisations	1	1.1.2
Describe the impact these organisations have on air traffic operations and their interactions with each other	2	1.1.3
Explain the purpose and function of ICAO	2	2.1.1
Describe the methods by which ICAO notifies and implements legislation	2	2.1.2
Prerequisites		

Summary of the Objectives of this Training Event**Indications on Assessment****Miscellaneous Remarks**

TRAINING EVENT PLAN

LAW 1/6

Course Title		Basic AIS Training - Phase 1 <i>Ab Initio</i>
Training Event Title		National and International Organisations
Duration		Two periods
Topic	1 and 2	Introduction and International Organisations
Sub-topic	1.1 and 2.1	National and International Organisations, ICAO

Time	Item	References	Remarks
00:00	Introduction: the necessity for Air Law; the general purpose and functions of national and international organisations; the impact these organisations have on air traffic operations		
00:20	ICAO: 1. Location 2. Purpose 3. Process of Foundation 4. Convention 5. Organisation		
00:45	<i>Break</i>		
00:50	ICAO working methods, notification and implementation procedures: 1. Assemblies 2. Regions 3. SARPS 4. PANS 5. Annexes 6. Documents 7. Manuals		
01:20	<i>Conclusion</i>		
01:30	<i>End of lesson</i>		

LAW 2/6	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 1 <i>Ab Initio</i>			
Training Event Title	International Organisations			
Duration	Two periods			
Normal Properties	Lesson	Rstd	Vis/MMC	GTMD

Topic	2	International Organisations
Sub-topic	2.2 and 2.3	Other Agencies, International Aviation Associations

Training Objectives	Level	Code
Describe the purpose and function of other international agencies and their relevance to air traffic operations	2	2.2.1
Describe the purpose and function of international controller, pilot, airline operator and airspace user associations and their interrelation with air traffic operations	2	2.3.1

Prerequisites

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

TRAINING EVENT PLAN		LAW 2/6
Course Title		Basic AIS Training - Phase 1 <i>Ab Initio</i>
Training Event Title		International Organisations
Duration		Two periods
Topic	2	International Organisations
Sub-topic	2.2 and 2.3	Other Agencies and International Aviation Associations

Time	Item	References	Remarks
00:00	Introduction: general purpose and functions of international agencies; necessity and history of European co-operation in ATM and the relevance to air traffic operations		
00:15	ECAC: purpose, process of foundation, Member States and meaning of membership with respect to aviation		
00:25	EU: purpose, process of foundation, Member States and meaning of membership with respect to aviation		
00:35	EUROCONTROL: purpose, process of foundation, Member States, structure and meaning of membership with respect to aviation and its impact on ATM		
00:45	<i>Break</i>		
00:50	EUROCONTROL: present and future tasks, EATCHIP, EATMS		
01:10	Aviation authorities: IFATCA, IFALPA, IATA, IAOPA, IACA, military organisations		
01:20	<i>Conclusion</i>		
01:30	<i>End of lesson</i>		

LAW 3/6		TRAINING EVENT PLAN		
Course Title	Basic AIS Training - Phase 1 <i>Ab Initio</i>			
Training Event Title	National Organisations			
Duration	Two periods			
Normal Properties	Lesson	Rstd	Vis/MMC	GTMD

Topic	3	National Organisations
Sub-topic	3.1-3.4	General; National Legislative Procedures; National Regulatory Body; National Aviation Associations

Training Objectives	Level	Code
Describe the purpose and function of appropriate national agencies and their relevance to air traffic operations	2	3.1.1
Describe the methods by which legislation is implemented and notified	2	3.2.1
Name the body responsible for licensing and ensuring that legislation and operational procedures are enforced	1	3.3.1
Describe how the body carries out its safety regulation responsibilities	2	3.3.2
Describe the purpose of national controller, pilot, airline operator and airspace user associations and their interrelation with air traffic operations	2	3.4.1
Prerequisites		

Indications on Assessment

Miscellaneous Remarks

TRAINING EVENT PLAN

LAW 3/6

Course Title		Basic AIS Training - Phase 1 <i>Ab Initio</i>
Training Event Title		National Organisations
Duration		Two periods
Topic	3	National Organisations
Sub-topic	3.1-3.4	General; National Legislative Procedures; National Regulatory Body; National Aviation Associations

Time	Item	References	Remarks
00:00	Introduction: general functions and purposes of national legislative bodies	National references	In accordance with national requirements
00:10	national legislation, ATS and aviation authorities: their functions, responsibilities and working methods	National references	In accordance with national requirements
00:45	<i>Break</i>		
00:50	Methods by which legislation is implemented and notified	NOTAM, AIPs, AICs	
			<i>* Additional periods may be needed dependent on the complexities of national requirements</i>
01:20	<i>Conclusion</i>		
01:30	<i>End of lesson</i>		

LAW 4/6	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 1 <i>Ab Initio</i>			
Training Event Title	Rules and Regulations			
Duration	Two periods			
Normal Properties	Lesson	Rstd	Vis/MMC	GTMD

Topic	4	Rules and Regulations
Sub-topic	4.1	General

Training Objectives	Level	Code
List the types of Air Navigation Services (ANS) (as laid down in ICAO annexes)	1	4.1.1
State the objectives of the Air Traffic Services (ATS)	1	4.1.2
List the types of Air Traffic Services (ATS)	1	4.1.3

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

TRAINING EVENT PLAN		LAW 4/6
Course Title		Basic AIS Training - Phase 1 <i>Ab Initio</i>
Training Event Title		Rules and Regulations
Duration		Two periods
Topic	4	Rules and Regulations
Sub-topic	4.1	General

Time	Item	References	Remarks
00:00	Introduction		
00:10	Air Navigation Services (ANS) (according to ICAO): <ol style="list-style-type: none"> 1. Air Traffic Services (ATS) 2. ATFM 3. Airspace Management 4. AIS 		
00:30	The objectives of the Air Traffic Services (ATS)	ICAO Annex 11 Chap. 2.2	
00:45	<i>Break</i>		
00:50	Air Traffic Services (ATS): <ol style="list-style-type: none"> 1. ATC services 2. Advisory Service 3. FIS 4. Alerting Service 		
01:20	<i>Conclusion</i>		
01:30	<i>End of lesson</i>		

LAW 5/6	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 1 <i>Ab Initio</i>			
Training Event Title	Airspace			
Duration	Three periods			
Normal Properties	Lesson	Rstd	Vis/MMC	GTMD

Topic	4	Rules and regulations
Sub-topic	4.2	Airspace

Training Objectives	Level	Code
Explain airspace classification	2	4.2.1
Differentiate between the different types of airspace	2	4.2.2
Prerequisites		

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

TRAINING EVENT PLAN

LAW 5/6

Course Title		Basic AIS Training - Phase 1 <i>Ab Initio</i>
Training Event Title		Airspace
Duration		Three periods
Topic	4	Rules and Regulations
Sub-topic	4.2.	Airspace

Time	Item	References	Remarks
00:00	Introduction: history and necessity of airspace structure		
00:10	Explain basic structure of airspace	CTR, CTA, AWY, FIR, upper and lower airspace, etc.	
00:45	<i>Break</i>		
00:50	Airspace classification: 1. National history 2. Necessity for international unification		
01:00	Types of airspace and their general differentiation: 1. Class A 2. Class B 3. Class C 4. Class D 5. Class E		<i>Additional periods may be needed dependent on the complexities of national requirements</i>
01:30	<i>Break</i>		
01:35	6. Class F 7. Class G		
01:50	Areas with flight restrictions: 1. Restricted areas 2. Danger areas 3. Prohibited areas 4. Aerodrome Traffic Zones (ATZ) 5. Military areas 6. Special-use areas		<i>Additional periods may be needed dependent on the complexities of national requirements</i>
02:10	<i>Conclusion</i>		
02:15	<i>End of lesson</i>		

LAW 6/6	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 1 <i>Ab Initio</i>			
Training Event Title	Rules of the Air			
Duration	Four periods			
Normal Properties	Lesson	Rstd	Vis/MMC	GTMD

Topic	4	Rules and Regulations
Sub-topic	4.3	Rules of the Air

Training Objectives	Level	Code
Explain the international Rules of the Air	2	4.3.1
Explain any notified national differences with ICAO	2	4.3.2
Be aware of the influence of relevant general flight rules on ATC	0	4.3.3
Differentiate between flying in accordance with visual and instrument flight rules (VFR and IFR)	2	4.3.4
Prerequisites		

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

TRAINING EVENT PLAN

LAW 6/6

Course Title		Basic AIS Training - Phase 1 <i>Ab Initio</i>
Training Event Title		Rules of the Air
Duration		Four periods
Topic	4	Rules and Regulations
Sub-topic	4.3	Rules of the Air

Time	Item	References	Remarks
00:00	Introduction: general history and necessity of internationally agreed Rules of the Air		
00:10	Explain international Rules of the Air	ICAO Annex 2	
00:45	<i>Break</i>		
00:50	National legislation regarding the Rules of the Air and the differences with ICAO		
01:30	<i>Break</i>		
01:35	Introduce division of rules relevant for the operation of aircraft		
01:45	General flight rules and their relevance on ATC	ICAO Annex 2 Chap. 3	
2:15	<i>Break</i>		
2:20	Instrument and visual flight rules and their relevance on ATC	ICAO Annex 2 Chaps. 4 and 5	<i>Additional periods may be needed dependent on the complexities of national requirements</i>
02:55	<i>Conclusion</i>		
03:00	<i>End of lesson</i>		

3.3.3 NOTAM Office

NOF 4/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	NOTAM Qualification			
Duration	Four periods			
Normal Properties	Lesson	Rstd	Vis/MMC	GTMD

Topic	1	NOTAM
Sub-topic	1.4	NOTAM Qualification

Training Objectives	Level	Code
Explain the purpose of NOTAM qualification	2	1.4.1
State the general rules relating to NOTAM qualification	1	1.4.2
Explain NOTAM qualifiers	2	1.4.3
Prerequisites		

Summary of the Objectives of this Training Event**Indications on Assessment****Miscellaneous Remarks**

(NOF 4/xx indicates that this is Training Event N°4 of an undetermined number).

TRAINING EVENT PLAN

NOF 4/xx

Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		NOTAM Qualification
Duration		Four periods
Topic	1	NOTAM
Sub-topic	1.4	NOTAM Qualification

Time	Item	References	Remarks
00:00	Introduction: purpose of NOTAM qualifiers	ICAO Doc 8126	
00:45	<i>Break</i>		
00:50	General rules relating to NOTAM qualification	NOTAM Selection Criteria	
01:30	<i>Break</i>		
01:35	Explaining NOTAM qualifiers		
02:15	<i>Break</i>		
02:20	Explaining NOTAM qualifiers (continued)		<i>Additional periods may be needed dependent on the requirements</i>
02:55	<i>Conclusion</i>		
03:00	<i>End of lesson</i>		

NOF 5/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	NOTAM			
Duration	Three periods - Exercise			
Normal Properties	Sup Pract	Rstd	Txt/MMC	ITMD

Topic	1	NOTAM
Sub-topic	1.4	NOTAM Qualification

Training Objectives	Level	Code
Decode and encode NOTAM qualifiers	3	1.4.4
Prerequisites		

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

Exercises should be graded in complexity and applied as appropriate during the lesson periods.

TRAINING EVENT PLAN		NOF 5/xx
Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		NOTAM
Duration		Three periods - Exercise
Topic	1	NOTAM
Sub-topic	1.4	NOTAM Qualification

Time	Item	References	Remarks
00:00	Practical exercises in decoding and encoding NOTAM qualifiers		
00:40	<i>Conclusion</i>		
00:45	<i>End of Exercise N°1</i>		

Repeat as required.

NOF 6/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	NOTAM Items			
Duration	Four periods			
Normal Properties	Lesson	Rstd	Vis/MMC	GTMD

Topic	1	NOTAM
Sub-topic	1.5	NOTAM Items

Training Objectives	Level	Code
Explain the purpose of NOTAM items	2	1.5.1
Describe NOTAM item content	2	1.5.2

Prerequisites

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

TRAINING EVENT PLAN		NOF 6/xx
Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		NOTAM Items
Duration		Four periods
Topic	1	NOTAM
Sub-topic	1.5	NOTAM Items

Time	Item	References	Remarks
00:00	Introduction: purpose of NOTAM items		
00:20	Describe NOTAM item content: A) to D)		<i>This item requires at least two periods</i>
00:45	<i>Break</i>		
00:50	Describe NOTAM item content: A) to D) continued		
01:30	<i>Break</i>		
01:35	Describe NOTAM item content: E) to G) including X)		<i>This item requires at least two periods</i>
02:15	<i>Break</i>		
02:20	Describe NOTAM item content: E) to G) including X) continued		<i>Additional periods may be needed dependent on the requirements</i>
02:55	<i>Conclusion</i>		
03:00	<i>End of lesson</i>		

NOF 7/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	NOTAM Items			
Duration	Two periods - Exercise			
Normal Properties	Sup Pract	Rstd	Vis/Txt	ITMD

Topic	1	NOTAM
Sub-topic	1.5	NOTAM Items

Training Objectives	Level	Code
Decode and encode NOTAM items	3	1.5.3

Prerequisites

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

Exercises should be graded in complexity and applied as appropriate during the lesson periods.

TRAINING EVENT PLAN		NOF 7/xx
Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		NOTAM Items
Duration		Two periods - Exercise
Topic	1	NOTAM
Sub-topic	1.5	NOTAM Items

Time	Item	References	Remarks
00:00	Practical exercise in decoding and encoding NOTAM items		
00:40	<i>Conclusion</i>		
00:45	<i>End of Exercise N°1</i>		

Repeat as required.

3.3.4 ATS Reporting Office

ARO 4/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	Flight Plan			
Duration	One period			
Normal Properties	Lesson	Rstd	Vis/MMC	GTMD

Topic	2	Flight Plan and Related Messages
Sub-topic	2.1 and 2.2	Introduction, ICAO Model Flight Plan Form

Training Objectives	Level	Code
Recall different types of flight plan	1	2.1.1
Describe the three parts of FPL form	2	2.2.1
Prerequisites		

Summary of the Objectives of this Training Event**Indications on Assessment****Miscellaneous Remarks**

(ARO 4/xx indicates that this is Training Event N°4 of an undetermined number).

TRAINING EVENT PLAN		ARO 4/xx
Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		Flight Plan
Duration		One period
Topic	2	Flight Plan and Related Messages
Sub-topic	2.1 and 2.2	ICAO Model Flight Plan Form

Time	Item	References	Remarks
00:00	Introduction: description of flight plan form		
00:40	<i>Conclusion</i>		
00:45	<i>End of lesson</i>		

ARO 5/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	Flight Plan Items			
Duration	Seven periods			
Normal Properties	Lesson	Rstd	Vis/MMC	GTMD

Topic	2	Flight Plan and Related Messages
Sub-topic	2.2	ICAO Model Flight Plan Form

Training Objectives	Level	Code
Explain all the items contained in FPL form	2	2.2.2
Prerequisites		

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

TRAINING EVENT PLAN

ARO 5/xx

Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		Flight Plan Items
Duration		Seven periods
Topic	2	Flight Plan and Related Messages
Sub-topic	2.2	ICAO Model Flight Plan Form

Time	Item	References	Remarks
00:00	Detailed explanation of FPL Items 7, 8, 9		
00:30	Detailed explanation of FPL Item 10		
00:45	<i>Break</i>		
00:50	Item 10 continued		<i>Additional periods may be needed dependent on the requirements</i>
01:25	<i>Conclusion</i>		
01:30	<i>End of lesson</i>		

00:00	Detailed explanation of FPL Item 13		
00:10	Detailed explanation of FPL Item 15		<i>This item requires at least three periods</i>

	Detailed explanation of FPL Items 16, 18		<i>This item requires at least one period</i>
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	Detailed explanation of FPL Item 19		<i>This item requires at least one period</i>
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Note: No time indications have been given after the first two periods as this will depend upon local requirements and student prerequisites.

ARO 6/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	Encoding and Decoding Flight Plans			
Duration	Six periods - Exercise			
Normal Properties	Sup Pract	Rstd	Txt/MMC	ITMD

Topic	2	Flight Plan and Related Messages
Sub-topic	2.2	ICAO Model Flight Plan Form

Training Objectives	Level	Code
Encode and decode flight plans	3	2.2.3
Prerequisites		

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks
Exercises should be graded in complexity and applied as appropriate during the lesson periods.

TRAINING EVENT PLAN		ARO 6/xx
Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		Encoding and Decoding Flight Plans
Duration		Six periods - Exercise
Topic	2	Flight Plan and Related Messages
Sub-topic	2.2	ICAO Model Flight Plan Form

Time	Item	References	Remarks
00:00	Practical exercise in encoding and decoding flight plans		
00:40	<i>Conclusion</i>		
00:45	<i>End of Exercise N°1</i>		

Repeat as required.

ARO 7/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	Pre-flight Briefing			
Duration	Three periods			
Normal Properties	Lesson	Rstd	Vis/MMC	GTMD

Topic	3	Pre-flight Briefing
Sub-topic	3.1	Content of Pre-flight Briefing

Training Objectives	Level	Code
List the content of a pre-flight briefing	1	3.1.1
Explain the scope of the available briefing material	2	3.1.2
Appreciate the significance of this material to the customer	2	3.1.3

Prerequisites

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

TRAINING EVENT PLAN		ARO 7/xx
Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		Pre-flight Briefing
Duration		Three periods
Topic	3	Pre-flight Briefing
Sub-topic	3.1	Content of Pre-flight Briefing

Time	Item	References	Remarks
00:00	Identify content of pre-flight briefing: NOTAM, SNOWTAM, NAT tracks, etc.		
00:45	<i>Break</i>		
00:50	Explain the scope of the available briefing material e.g. PIB, ATFM messages, local warning		
01:30	<i>Break</i>		
01:35	Appreciate the significance of this material to the customer		
02:10	<i>Conclusion</i>		
02:15	<i>End of lesson</i>		

ARO 8/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	Pre-flight Briefing			
Duration	One period - Exercise			
Normal Properties	Sup Pract	Rstd	Vis/MMC	ITMD

Topic	3	Pre-flight Briefing
Sub-topic	3.1	Content of Pre-flight Briefing

Training Objectives	Level	Code
Decode the abbreviations used in the briefing material	3	3.1.4
Prerequisites		

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

TRAINING EVENT PLAN

ARO 8/xx

Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		Pre-flight Briefing
Duration		One period
Topic	3	Pre-flight Briefing
Sub-topic	3.1	Content of Pre-flight Briefing

Time	Item	References	Remarks
00:00	Exercise(s) on decoding abbreviations used in the briefing material		
00:40	<i>Conclusion</i>		
00:45	<i>End of exercise</i>		

ARO 9/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	Interpret Pre-flight Briefing Information			
Duration	Two periods - Case Study			
Normal Properties	Case	Rstd	Vis/Txt/MMC	GTMD

Topic		Pre-flight Briefing
Sub-topic		Content of Pre-flight Briefing

Training Objectives	Level	Code
Interpret information given in the briefing material	3	3.1.5
Prerequisites		

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

TRAINING EVENT PLAN		ARO 9/xx
Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		Interpret Pre-flight Briefing Information
Duration		Two periods
Topic	3	Pre-flight Briefing
Sub-topic	3.1	Content of Pre-flight Briefing

Time	Item	References	Remarks
00:00	Case study - Part one		<i>Compare contents of PIB from different originators; compare the content of different PIB types</i>
00:40	Break		
00:45	Case study - Part two		<i>Consequences of missing or incorrect information</i>
01:25	<i>Conclusion</i>		
01:30	<i>End of case study</i>		

3.3.5 Publications and Charts

PUB 1/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	Collection of Information			
Duration	Two periods			
Normal Properties	Lesson	Rstd	Vis/MMC	GTMD

Topic	1	Basic Steps for Publication
Sub-topic	1.1	Collection of Information

Training Objectives	Level	Code
List the authorised sources of raw data	1	1.1.1
List channels of communication for submission of raw data	1	1.1.2
Describe the area of responsibility for publication	2	1.1.3
Recognise the need for recording and filing raw data	1	1.1.4
Prerequisites		

Summary of the Objectives of this Training Event**Indications on Assessment****Miscellaneous Remarks**

(PUB 1/xx indicates that this is Training Event N°1 of an undetermined number).

TRAINING EVENT PLAN

PUB 1/xx

Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		Collection of Information
Duration		Two periods
Topic	1	Basic Steps for Publication
Sub-topic	1.1	Collection of Information

Time	Item	References	Remarks
00:00	List the authorised sources of raw data, e.g. services within own CAA, other CAAs, others sources		
00:20	List channels of communication for submission of raw data, e.g. postal service, aeronautical service		
00:45	<i>Break</i>		
00:50	Describe the area of responsibility for publication		<i>Additional periods may be needed dependent on the requirements</i>
01:15	Recognise the need for recording and filing raw data		
01:25	<i>Conclusion</i>		
01:30	<i>End of lesson</i>		

PUB 2/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	Collection of Information			
Duration	One period - Hands-on			
Normal Properties	Sup Pract	Real	Eqpt	GTMD

Topic	1	Basic Steps for Publication
Sub-topic	1.1	Collection of Information

Training Objectives	Level	Code
File raw data	3	1.1.5
Prerequisites		

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

TRAINING EVENT PLAN

PUB 2/xx

Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		Collection of Information
Duration		One period
Topic	1	Basic Steps for Publication
Sub-topic	1.1	Collection of Information

Time	Item	References	Remarks
00:00	Supervised practice in classifying and filing raw data		
00:20	<i>Conclusion</i>		
00:45	<i>End of hands-on exercise</i>		

PUB 9/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	Aeronautical Charts			
Duration	Three periods			
Normal Properties	Lesson	Rstd	Vis/MMC	GTMD

Topic	5	Aeronautical Charts
Sub-topic	5.1	Aeronautical Charts

Training Objectives	Level	Code
Explain the need for aeronautical charts	2	5.1.1
List types of aeronautical charts	1	5.1.2
State the information contained in aeronautical charts	1	5.1.4
Prerequisites		

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

TRAINING EVENT PLAN		PUB 9/xx
Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		Aeronautical Charts
Duration		Three periods
Topic	5	Aeronautical Charts
Sub-topic	5.1	Aeronautical Charts

Time	Item	References	Remarks
00:00	Explain the need for aeronautical charts		
00:30	List types of aeronautical charts		
00:45	<i>Break</i>		
00:50	Listing of aeronautical charts, continued		
01:05	State the information contained in aeronautical charts		<i>Additional periods may be needed dependent on the requirements</i>
01:30	<i>Break</i>		
01:35	State the information contained in aeronautical charts, continued		
02:10	<i>Conclusion</i>		
02:15	<i>End of lesson</i>		

PUB 10/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	Format and Layout of Aeronautical Charts			
Duration	Four periods			
Normal Properties	Lesson	Rstd	Vis/MMC	GTMD

Topic	5	Aeronautical Charts
Sub-topic	5.1	Aeronautical Charts

Training Objectives	Level	Code
Describe the format and the layout of aeronautical charts	2	5.1.3
Describe the operational function of aeronautical charts	2	5.1.6
Prerequisites		

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

TRAINING EVENT PLAN		PUB 10/xx
Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		Format and Layout of Aeronautical Charts
Duration		Four periods
Topic	5	Aeronautical Charts
Sub-topic	5.1	Aeronautical Charts

Time	Item	References	Remarks
00:00	Description of format, layout and operational function of aeronautical charts, e.g. area, en-route, instrument approach and aerodrome charts		<i>Minimum requirement is four periods Additional periods may be required</i>
02:50	<i>Conclusion</i>		
03:00	<i>End of lesson</i>		

Note : In practice, aeronautical charts could be grouped (e.g. aerodrome, en-route, visual) and training events would consider the format, layout, function and deciphering of each group of charts in turn.

PUB 11/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	Deciphering Data on Aeronautical Charts			
Duration	Three periods - Exercise			
Normal Properties	Sup Pract	Rstd	Vis/MMC	ITMD

Topic	5	Aeronautical Charts
Sub-topic	5.1	Aeronautical Charts

Training Objectives	Level	Code
Decipher the data depicted on charts	3	5.1.5
Prerequisites		

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

Exercises should be graded in complexity and applied as appropriate during the lesson periods.

TRAINING EVENT PLAN		PUB 11/xx
Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		Deciphering Data on Aeronautical Charts
Duration		Three periods
Topic	5	Aeronautical Charts
Sub-topic	5.1	Aeronautical Charts

Time	Item	References	Remarks
00:00	Decipher the data depicted on charts (selected according to grouping)		<i>Minimum requirement is three period. Additional periods may be required</i>
02:50	<i>Conclusion</i>		
03:00	<i>End of exercise</i>		

PUB 12/xx	TRAINING EVENT PLAN			
Course Title	Basic AIS Training - Phase 2 Specialist			
Training Event Title	Selecting Charts for AIP			
Duration	One period - Exercise			
Normal Properties	Sup Pract	Rstd	Vis/MMC	ITMD

Topic	5	Aeronautical Charts
Sub-topic	5.1	Aeronautical Charts

Training Objectives	Level	Code
Select charts(s) to be inserted in an appropriate section of the AIP	3	5.1.7
Prerequisites		

Summary of the Objectives of this Training Event

Indications on Assessment

Miscellaneous Remarks

TRAINING EVENT PLAN		PUB 12/xx
Course Title		Basic AIS Training - Phase 2 Specialist
Training Event Title		Selecting Charts for AIP
Duration		One period
Topic	5	Aeronautical Charts
Sub-topic	5.1	Aeronautical Charts

Time	Item	References	Remarks
00:00	Select charts(s) to be inserted in an appropriate section of the AIP		
00:40	<i>Conclusion</i>		
00:45	<i>End of exercise</i>		

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4. EXAMPLES OF ASSESSMENT

4.1 Performance Objectives - Mastery Tests

4.1.1 Air Law

4.1.2 NOTAM Office

4.1.3 ATS Reporting Office

4.1.4 Publications and Charts

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4.1.1 **Air Law**

PERFORMANCE OBJECTIVE - MASTERY TEST		LAW 1
Course	Basic AIS Training - Phase 1 <i>Ab Initio</i>	
Subject	AIR LAW	
General Objective	To enable students to appreciate the basic principles of Air Law	
PERFORMANCE OBJECTIVE	In a classroom, either on paper or using PC-based material, explain the necessity for Air Law, how it is legislated nationally and internationally and its effect on the aviation community	
Corresponding Training Objectives	Introduction: International organisations: National organisations :	1.1.1. - 1.1.3. 2.1.1. - 2.3.1. 3.1.1. - 3.2.1. + 3.4.1.
Prerequisites		
Format of Mastery Test LAW 1	Written and/or oral	

PERFORMANCE OBJECTIVE - MASTERY TEST	LAW 2
Course	Basic AIS Training - Phase 1 <i>Ab Initio</i>
Subject	AIR LAW
General Objective	To enable students to apply the regulations governing Rules of the Air, airspace and flight planning
PERFORMANCE OBJECTIVE	In a classroom, either on paper or using PC-based material, identify and describe the regulations (ICAO and national) governing a flight and the corresponding ATS including the classification of airspace
Corresponding Training Objectives	Rules and regulations: 4.1.1. - 4.3.4.
Prerequisites	
Format of Mastery Test LAW 2	Written and/or oral

PERFORMANCE OBJECTIVE - MASTERY TEST	LAW 3
Course	Basic AIS Training - Phase 1 <i>Ab Initio</i>
Subject	AIR LAW
General Objective	To ensure students understand the authority vested in AIS Personnel and the means by which that authority is exercised
PERFORMANCE OBJECTIVE	In a classroom, answer questions, either written or orally, regarding the means by which the legislation and operational procedures are exercised in accordance with national regulations
Corresponding Training Objectives	National organisations: 3.3.1. - 3.3.2.
Prerequisites	
Format of Mastery Test LAW 3	Written and/or oral

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4.1.2 NOTAM Office

PERFORMANCE OBJECTIVE - MASTERY TEST		NOF 1
Course	Basic AIS Training - Phase 2 Specialist	
Subject	NOTAM OFFICE	
General Objective	To describe and explain the purpose, function and significance of NOTAM	
PERFORMANCE OBJECTIVE	<p>In a classroom, either on paper or using PC-based material:</p> <ol style="list-style-type: none"> 1. Describe and explain the purpose, function and significance of NOTAM; 2. Decode and encode NOTAM qualifiers (the use of reference material may be permitted) and NOTAM items, <p>according to ICAO Standards and Recommended Practices</p>	
Corresponding Training Objectives	<p>General: 1.1.1. - 1.5.3. NOTAM for special purposes: 6.1.1. - 6.3.5. NOTAM Summary: 7.1.1. - 7.1.2. Messages referring to NOTAM: 8.1.1. - 8.3.3.</p>	
Prerequisites		
Format of Mastery Test NOF 1	Written and/or oral, practical	

PERFORMANCE OBJECTIVE - MASTERY TEST		NOF 2
Course	Basic AIS Training - Phase 2 Specialist	
Subject	NOTAM OFFICE	
General Objective	To prepare, distribute and store outgoing NOTAM	
PERFORMANCE OBJECTIVE	<p>In a simulated environment, using the raw data provided:</p> <ol style="list-style-type: none"> 1. Select raw data appropriate for dissemination by NOTAM; 2. Check data for completeness; 3. Prepare NOTAM; 4. Apply NOTAM distribution procedures, according to national procedures 	
Corresponding Training Objectives	<p>NOTAM production: 2.1.1. - 2.3.2.</p> <p>Fall back procedures 9.1.1. - 9.1.3.</p>	
Prerequisites		
Format of Mastery Test NOF 2	Practical	

PERFORMANCE OBJECTIVE - MASTERY TEST		NOF 3
Course	Basic AIS Training - Phase 2 Specialist	
Subject	NOTAM OFFICE	
General Objective	To receive and process incoming NOTAM	
PERFORMANCE OBJECTIVE	<p>In a simulated environment, given examples of NOTAM:</p> <ol style="list-style-type: none"> 1. Check data for completeness; 2. Clarify ambiguous or erroneous content; 3. Apply NOTAM storage procedures, according to national procedures 	
Corresponding Training Objectives	<p>Incoming NOTAM: 3.1.1. - 3.2.4. NOTAM storage: 4.1.1. - 4.1.3. NOTAM database: 5.1.1. - 5.3.3. NOTAM Summary: 7.1.3. - 7.1.5.</p>	
Prerequisites		
Format of Mastery Test NOF 3	Practical	

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4.1.3 ATS Reporting Office

PERFORMANCE OBJECTIVE - MASTERY TEST		ARO 1
Course	Basic AIS Training - Phase 2 Specialist	
Subject	ATS REPORTING OFFICE	
General Objective	To accept, verify and transmit flight plans and associated messages	
PERFORMANCE OBJECTIVE	In a classroom, given examples of flight plans: <ol style="list-style-type: none"> 1. Verify the contents of flight plans; 2. Identify any errors and propose correct solutions; 3. Address flight plans accordingly; 4. Compose appropriate flight plan-related message(s), in accordance with ICAO procedures	
Corresponding Training Objectives	Flight plans and related messages: Co-ordination:	2.1.1. - 2.7.5. 6.1.1. - 6.2.2.
Prerequisites		
Format of Mastery Test ARO 1	Practical	

PERFORMANCE OBJECTIVE - MASTERY TEST	ARO 2
Course	Basic AIS Training - Phase 2 Specialist
Subject	ATS REPORTING OFFICE
General Objective	To conduct an appropriate and complete briefing
PERFORMANCE OBJECTIVE	<p>In a simulated environment, given the required material and all relevant reference manuals:</p> <ol style="list-style-type: none"> 1. Prepare appropriate pre-flight briefing according to a specified request; 2. Communicate the information to the customer; 3. React on post-flight information, <p>according to national procedures and using standard forms</p>
Corresponding Training Objectives	<p>Briefing: 1.1.1. - 1.2.3. Pre-flight briefing: 3.1.1. - 3.4.11. SNOWTAM: 4.1.1. - 4.4.3. Post-flight information: 5.1.1. - 5.1.2.</p>
Prerequisites	
Format of Mastery Test ARO 2	Practical

4.1.4 Publication and Charts

PERFORMANCE OBJECTIVE - MASTERY TEST		PUB 1
Course	Basic AIS Training - Phase 2 Specialist	
Subject	PUBLICATION AND CHARTS	
General Objective	To collect and prepare aeronautical information for publication	
PERFORMANCE OBJECTIVE	<p>In a classroom, given suitable material:</p> <ol style="list-style-type: none"> 1 Select the most suitable form of publication; 2. Prepare information in the appropriate format, <p style="text-align: center;">in accordance with published procedures (ICAO and national)</p>	
Corresponding Training Objectives	<p>Basic steps for publication:</p> <p>AIP:</p> <p>AIC:</p> <p>NOTAM Summary:</p>	<p>1.1.1. - 1.4.4.</p> <p>2.1.1. - 2.2.13.</p> <p>3.1.1. - 3.1.5.</p> <p>4.1.1. - 4.1.2.</p>
Prerequisites		
Format of Mastery Test PUB 1	Practical	

PERFORMANCE OBJECTIVE - MASTERY TEST	PUB 2
Course	Basic AIS Training - Phase 2 Specialist
Subject	PUBLICATION AND CHARTS
General Objective	To prepare and publish aeronautical charts
PERFORMANCE OBJECTIVE	<p>In a classroom, given the appropriate data and with the necessary equipment:</p> <ol style="list-style-type: none"> 1 Construct an aeronautical chart for a specific purpose; 2. Verify data contained in the chart, in conformity with ICAO Standards
Corresponding Training Objectives	Aeronautical charts: 5.1.1. - 5.2.5.
Prerequisites	
Format of Mastery Test PUB 2	Practical

4.2 Performance Objectives - Progress Tests

4.2.1 Air Law

4.2.2 NOTAM Office

4.2.3 ATS Reporting Office

4.2.4 Publications and Charts

Note: This chapter provides two examples of performance objectives for each subject from which examples of progress test items will be constructed.

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4.2.1 Air Law

PERFORMANCE OBJECTIVE - PROGRESS TEST	LAW 1.1.2
Course	Basic AIS Training - Phase 1 <i>Ab Initio</i>
Subject	AIR LAW
Training Objective	1.1.2 Name the key national and international aviation organisations
PERFORMANCE OBJECTIVE	In a classroom, given a written or PC-based text, complete the list of key national and international aviation organisations
Topic	1. Introduction
Sub-topic	1.1 National and International Organisations
Content	ICAO, ECAC, EU, JAA, EUROCONTROL, national authority
Format of Progress Test Item(s) for LAW 1.1.2	Written/PC-based, e.g. completion

Note : The numbering of the performance objective relates directly to the training objective. For each performance objective, there may be any number of test items (1.1.2/01, 1.1.2/02, etc.). This will help to establish a database of test items.

PERFORMANCE OBJECTIVE - PROGRESS TEST	LAW 4.2.2
Course	Basic AIS Training - Phase 1 <i>Ab Initio</i>
Subject	AIR LAW
Training Objective	4.2.2 Differentiate between the different types of airspace
PERFORMANCE OBJECTIVE	In a classroom, using written or PC-based text and given appropriate airspace charts, differentiate types of airspace indicating typical upper and lower limits
Topic	4. Rules and Regulations
Sub-topic	4.2 Airspace
Content	Such as control zones, control areas, airways, upper and lower airspace, FIR
Format of Progress Test Item(s) for LAW 4.2.2	Written/PC-based, e.g. identification, completion, true/false

4.2.2 NOTAM Office

PERFORMANCE OBJECTIVE - PROGRESS TEST	NOF 1.4.2
Course	Basic AIS Training - Phase 2 Specialist
Subject	NOTAM OFFICE
Training Objective	1.4.2 State the general rules relating to NOTAM qualification
PERFORMANCE OBJECTIVE	In a classroom, given a written or PC-based text, state the general rules relating to NOTAM qualification, and indicate how each field is separated within the item. State the rule for when no entry is made in a field
Topic	1. NOTAM
Sub-topic	1.4 NOTAM Qualification
Content	NOTAM Selection Criteria
Format of Progress Test Item(s) for NOF 1.4.2	Written/PC-based, e.g. short answer, completion (of NOTAM item), multiple choice

PERFORMANCE OBJECTIVE - PROGRESS TEST	NOF 1.5.1
Course	Basic AIS Training - Phase 2 Specialist
Subject	NOTAM OFFICE
Training Objective	1.5.1. Explain the purpose of NOTAM items
PERFORMANCE OBJECTIVE	In a classroom, using written or PC-based text, explain the purpose of NOTAM items particularly in relation to automatic retrieval, presentation to users, format, storage and compatibility of NOTAM exchange
Topic	1. NOTAM
Sub-topic	1.5. NOTAM Items
Content	
Format of Progress Test Item(s) for NOF 1.5.1	Written/PC-based, e.g. structured question, multiple choice

4.2.3 ATS Reporting Office

PERFORMANCE OBJECTIVE - PROGRESS TEST	ARO 2.2.1
Course	Basic AIS Training - Phase 2 Specialist
Subject	ATS REPORTING OFFICE
Training Objective	2.2.1 Describe the three parts of FPL form
PERFORMANCE OBJECTIVE	In a classroom, given a written or PC-based text, describe the three parts of an ICAO model flight plan form
Topic	2. Flight Plan and Related Messages
Sub-topic	2.2 ICAO Model Flight Plan Form
Content	ICAO Doc 4444 App. 2, COM, ATS data and supplementary info
Format of Progress Test Item(s) for ARO 2.2.1	Written/PC-based, e.g. structured question, multiple choice

PERFORMANCE OBJECTIVE - PROGRESS TEST	ARO 3.1.1
Course	Basic AIS Training - Phase 2 Specialist
Subject	ATS REPORTING OFFICE
Training Objective	3.1.1 List the content of a pre-flight briefing
PERFORMANCE OBJECTIVE	In a classroom, given a written or PC-based text, identify the main items contained in a pre-flight briefing
Topic	3. Pre-flight Briefing
Sub-topic	3.1 Content of Pre-flight Briefing
Content	NOTAM, SNOWTAM, NAT tracks, MET info, charts, ATFM messages, national publications
Format of Progress Test Item(s) for ARO 3.1.1	Written/PC-based, e.g. true/false, completion, multiple choice

4.2.4 Publications and Charts

PERFORMANCE OBJECTIVE - PROGRESS TEST	PUB 1.1.1
Course	Basic AIS Training - Phase 2 Specialist
Subject	PUBLICATIONS AND CHARTS
Training Objective	1.1.1 List the authorised sources of raw data
PERFORMANCE OBJECTIVE	In a classroom, given a written or PC-based text, list the authorised sources for raw data (basic and ephemeral)
Topic	1. Basic Steps for Publication
Sub-topic	1.1 Collection of Information
Content	ICAO Doc 8126 Chaps. 1 and 3
Format of Progress Test Item(s) for PUB 1.1.1	Written/PC-based, e.g. completion, multiple choice, short answer

PERFORMANCE OBJECTIVE - PROGRESS TEST	PUB 5.1.1
Course	Basic AIS Training - Phase 2 Specialist
Subject	PUBLICATIONS AND CHARTS
Training Objective	5.1.1 Explain the need for aeronautical charts
PERFORMANCE OBJECTIVE	In a classroom, given a written or PC-based text, explain why aeronautical charts are needed emphasising their use for ATC, navigation and planning purposes
Topic	5. Aeronautical Charts
Sub-topic	5.1 Aeronautical Charts
Content	ICAO Annex 15 Chap. 4, ICAO Doc 8697 Chap. 2
Format of Progress Test Item(s) for PUB 5.1.1	Written/PC-based, e.g. multiple choice; structured question

4.3 Mastery Tests

4.3.1 Air Law

4.3.2 NOTAM Office

Note: The subjects and corresponding objectives covered in mastery and progress tests have been reduced to two, 'Air Law' and 'NOTAM Office'. The aim is to illustrate various types of test items and not to cover all subjects in detail.

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4.3.1 Air Law

BASED ON PERFORMANCE OBJECTIVE - MASTERY TEST LAW 2

Item N°1 (based on a test item from Germany)

In the following scenario underline breaches of regulations.

'Mr. Miller is the pilot-in-command of a C182 on a VFR flight from Egelsbach to Stuttgart. He has filed no flight plan. His passengers are two friends who have asked for a flying trip. After departure from Egelsbach and after having left the control zone, the flight heads for an unpopulated, mountainous area. There are some nice castles to be seen in this area which, on sunny days like today, attract many tourists. Mr. Miller circles above one of the castles at an altitude of about 500ft. in order to allow his friends to take some photographs. Thereafter, Mr. Miller picks up course for Stuttgart and, in order to be well above the cloud layer ahead, he decides to contact flight information and ask for clearance to climb to FL 115. The climb is approved by Frankfurt Information. Since the air is very calm and the visibility extremely good, Mr. Miller performs some acrobatic manoeuvres, like tight turns, steep turns and descents, just to show his friends the excellent performance of his aircraft.etc.....'

Item N°2

1. Which of the following groups of airspace classifications contains **only** controlled airspace ?
 - a) A, C, F, G,
 - b) A, B, C, D,
 - c) A, B, E, F,
 - d) B, C, E, G.

2. Indicate the combination of flight rules and meteorological conditions that is **not** permitted:
 - a) IFR - IMC,
 - b) IFR - VMC,
 - c) VFR - IMC,
 - d) VFR - VMC.

3. VFR flights are prohibited in airspace class:
 - a) A,
 - b) C,
 - c) D,
 - d) G.

4. The service provided in airspace class G is:

- a) ATC service,
- b) flight information service,
- c) advisory service,
- d) none of the above.

Item N°3

Explain the basic differences between flights flying under visual flight rules (VFR) and flights flying under the instrument flight rules (IFR).



Suggested Responses

Item N°1

'Mr. Miller is the pilot-in command of a C182 on a VFR flight from Egelsbach to Stuttgart. He has filed no flight plan. His passengers are two friends who have asked for a flying trip. After departure from Egelsbach and after having left the control zone, the flight heads for an unpopulated, mountainous area. There are some nice castles to be seen in this area which, on sunny days like today, attract many tourists. Mr. Miller circles above one of the castles at an altitude of about 500ft. in order to allow his friends to take some photographs. Thereafter, Mr. Miller picks up course for Stuttgart and, in order to be well above the cloud layer ahead, he decides to contact flight information and ask for clearance to climb to FL 115. The climb is approved by Frankfurt Information. Since the air is very calm and the visibility extremely good, Mr. Miller performs some acrobatic manoeuvres, like tight turns, steep turns and descents, just to show his friends the excellent performance of his aircraft.etc.....'

Item N°2

1 - b); 2 - c); 3 - a); 4 - b).

Item N°3

Key points for marking (8 points):

VFR flights operate under VMC and maintain own separation. They remain in visual contact with the ground and require no flight plan outside controlled airspace.

IFR flights may operate in VMC and IMC but must file a flight plan and obtain ATC clearance to fly in controlled airspace where ATC provides separation.

Note: Differences may occur depending on national legislation and the classification of airspace.

4.3.2 NOTAM Office

BASED ON PERFORMANCE OBJECTIVE - MASTERY TEST NOF 1

Item N°1

1. NOTAM Selection Criteria are published in which ICAO Annex/Document ?
 - a) Annex 15
 - b) Doc 8585
 - c) Doc 8126
 - d) Doc 8523

2. The validity of a 'trigger' NOTAM relative to an AIP Amendment is:
 - a) 15 days
 - b) permanent
 - c) 3 months
 - d) 14 days estimated

3. The date of publication of a 'trigger' NOTAM relative to an AIP Amendment is:
 - a) as soon as possible
 - b) the same date as the date of an AIRAC Cycle
 - c) the same date as that of an AIP Supplement
 - d) at the date of effective change

4. Which message refers to a NOTAM ?
 - a) SQL
 - b) RQL
 - c) SPL
 - d) RPL

5. Indicate the **non**-existent type of NOTAM:
 - a) NOTAMR
 - b) NOTAMN
 - c) NOTAMC
 - d) NOTAMS

6. Indicate which is **not** a 'NOTAM for Special Purpose':
 - a) 'trigger' NOTAM
 - b) SNOWTAM
 - c) NOTAM Summary
 - d) NOTAM checklist

7. To correct a NOTAM in force you issue a:

- a) NOTAMR
- b) NOTAMC
- c) NOTAMN
- d) NOTAMS

8. NOTAMC is issued:

- a) in a different series
- b) in a series C (c for cancellation)
- c) in the same series
- d) at the future start of validity

Item N°2

Encode the Q-line and items from the following plain language texts:

- 1. Runway 15/33 at Ciampino Airport is closed due to crashed aircraft. Runway expected to be reopened within four hours;
- 2. Urbe NDB is out of service for maintenance every Monday for two hours from 10 am to 12 noon local time WIE (15/06/98) until the 27th July 1998.

Item N°3

Correct the Q-lines:

- 1. Q)LFXX/QMRLC/IV/M/W/000/999/457N/1000E005
- 2. Q)ESMM/QMXLC/I/BO/A/999/000/----N-----E005

Item N°4

Cancel this NOTAM:

(A1314/98 NOTAMN

Q) LFBB/QFALC/IV/NBO/A/000/999/4400N00100W005

- A) LFBO
- B) 9806111700
- C) 9809101700
- E) AD CLOSED)



Suggested Responses

Item N°1

1. - c); 2 - a); 3 - b); 4 - b); 5 - d); 6 - c); 7 - a); 8 - c).

Item N°2

1. Q) LIRR/QMRLC/IV/NBO/A/000/999/----N-----E005

- A) LIRA
- B) 9806110800
- C) 9806111200EST
- E) RWY 15/33 CLOSED

2. Q) LIRR/QNBAS/IV/BO/AE/000/999/----N-----E025

- A) LIRA
- B) 9806150800
- C) 9807271000
- D) EVERY MON 0800 - 1000
- E) URB NDB OUT OF SERVICE

Item N°3

1. Q) LFEE/QMRLC/IV/NBO/A/000/999/4517N01000E005

Q) ESMM/QMXLC/IV/M/A/000/999/----N-----E005

Item N°4

1. (A1345/98 NOTAMC A1314/98

Q) LFBB/QFAAK/IV/NM/A/000/999/

- A) LFBO
- B) 9806121300
- E) AD RESUMED NORMAL OPS)

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4.4 Progress Tests

4.4.1 Air Law

4.4.2 NOTAM Office

Note: Only two subjects have been selected to show examples of progress test items. These relate to the mastery test items in the previous chapter.

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4.4.1 Air Law

BASED ON PERFORMANCE OBJECTIVE - PROGRESS TEST LAW 4.2.2

Item N°1

- 1 A TMA can cover more than one CTR
Mark True or False

True False

- 2 The lower limit of a TMA is at GND
Mark True or False

True False

- 3 The upper limit of a UIR is FL 660
Mark True or False

True False

- 4 The vertical limit of a CTR extends from ground to a specified height
Mark True or False

True False

- 5 There is always a TMA located above a CTR
Mark True or False

True False

- 6 An airway can pass through a TMA
Mark True or False

True False

- 7 The lower limit of a UIR is the same as the lower limit of a UTA
Mark True or False

True False

8 Below every TMA is at least one CTR
Mark True or False

True False

9 The lower limit of an FIR is 1000 ft AMSL
Mark True or False

True False

10 A CTR surrounds a controlled aerodrome
Mark True or False

True False

Item N°2

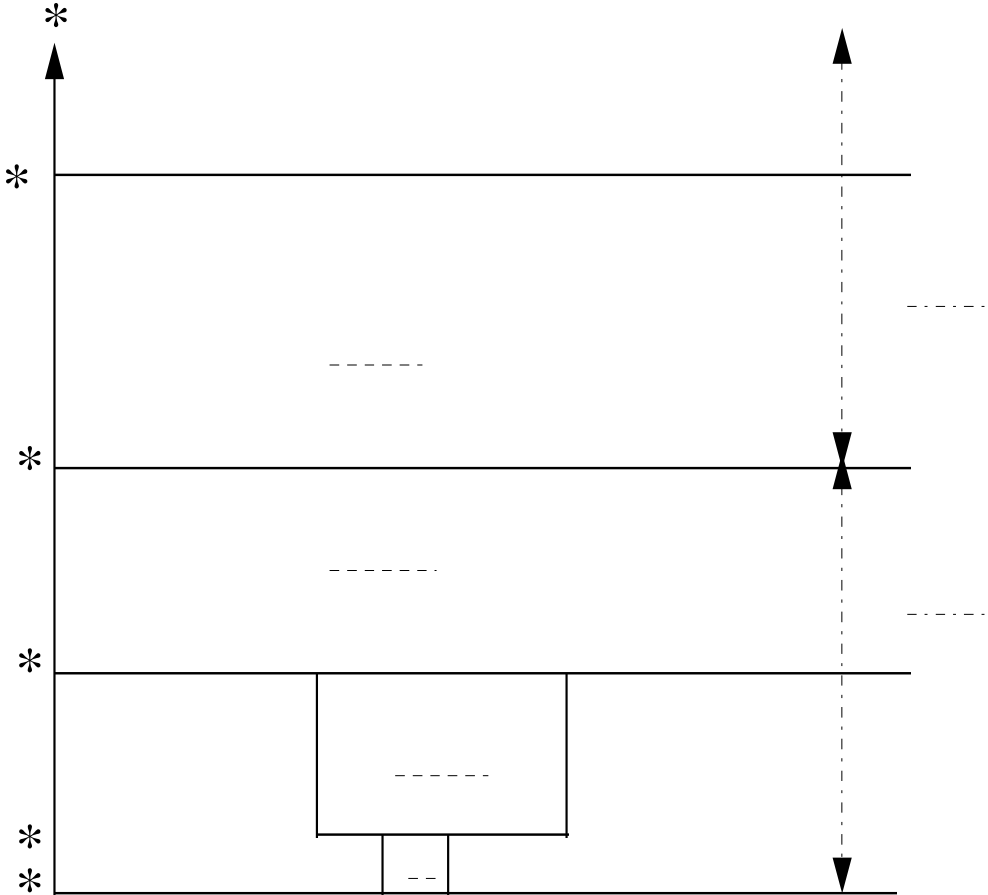
Complete the following statements by writing the correct word in the space:

1. The upper limit of a UTA is
2. The vertical limits of a CTR extend from to a specified height.
3. A UTA has the same lower vertical limit as a
4. A always surrounds a controlled aerodrome.

Item N°3

Look at the diagram of a basic airspace structure on the page opposite. Write the correct airspace abbreviation in the space provided (.....) and the appropriate height or flight level on the vertical axis (*).

The list of abbreviations and heights is below the diagram.



Airspace

FIR CTA TMA UIR CTR UTA

Flight Level

GND 3000ft FL 60 FL 195/245 FL 660 UNL

Suggested Responses

Item N°1

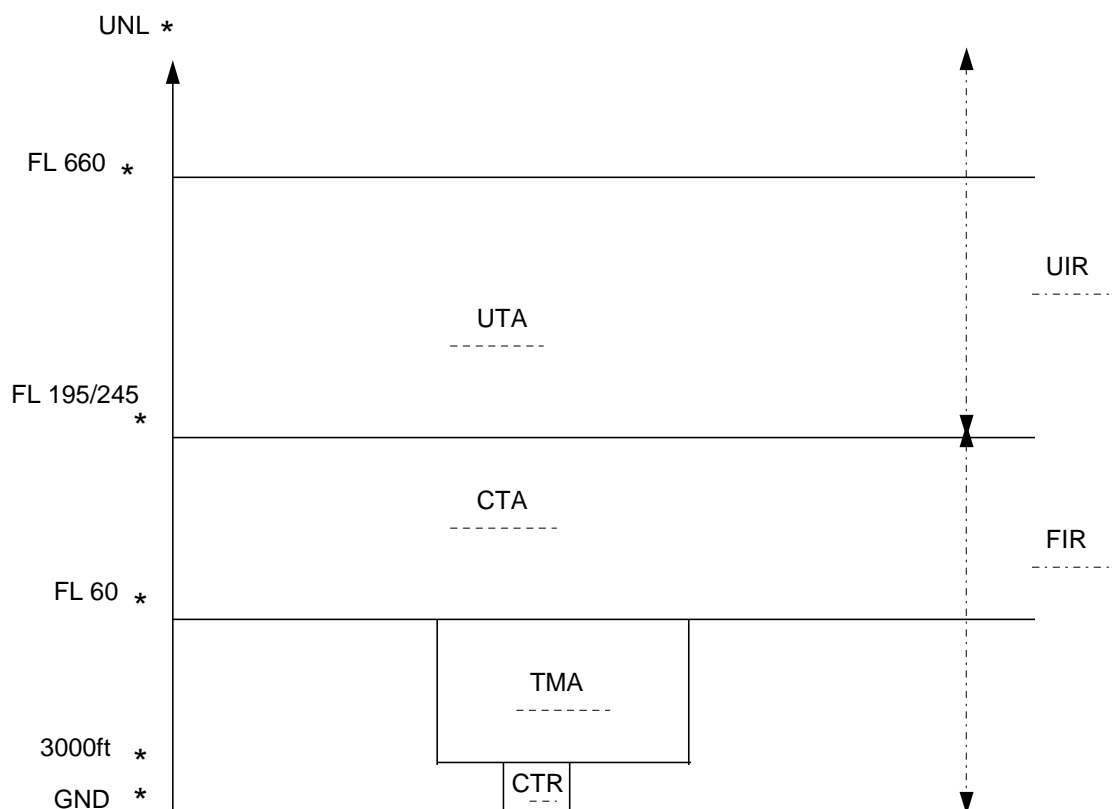
1 - true; 2 - false; 3 - false; 4 - true; 5 - false.

6 - true; 7 - true; 8 - true; 9 - false; 10 - true.

Item N°2

1. The upper limit of a UTA is FL 660.
2. The vertical limits of a CTR extend from GND to a specified height.
3. A UTA has the same lower vertical limit as a UIR.
4. A CTR always surrounds a controlled aerodrome.

Item N°3



4.4.2 NOTAM Office

BASED ON PERFORMANCE OBJECTIVES - PROGRESS TEST NOF 1.4.2 AND 1.5.1

Item N°1

1. How many qualifiers are in the Q-Line ?
 - a) 8
 - b) 9
 - c) 10
 - d) 11

2. Indicate the scope which does **not** exist
 - a) AE
 - b) AW
 - c) EW,
 - d) E

3. One of these purposes does **not** exist. Which one ?
 - a) NBO
 - b) BO
 - c) MO
 - d) NM

4. Indicate which condition is **not** permitted for a NOTAMC:
 - a) AK
 - b) AO
 - c) AL
 - d) AX

5. The meaning of 999 as an upper limit in the Q-Line is:
 - a) FL 999
 - b) FL is unknown
 - c) use only for AD location
 - d) unlimited

6. The meaning of Q) EGXX is:
 - a) Item A) has several AD locations
 - b) Item A) has several FIR locations in the same country
 - c) Item A) has several AD and FIR locations
 - d) Item A) has only FIR locations

Suggested Responses

Item N°1

1 - a); 2 - c); 3 - c); 4 - d); 5 - d); 6 - b); 7 - c); 8 - c); 9 - c); 10 - b).

Item N°2

Q	FIR	NOTAM Code	Traffic	Purpose	Scope	Lower Limit	Upper Limit	Co-ordinates, Radius	X
---	-----	------------	---------	---------	-------	-------------	-------------	----------------------	---

Item N°3

c) Q) ESMM/QACLV/V/NB/AE/000/050/----N-----E005

Item N°4

Q) ESMM/QIOAS/I/BO/A/000/999/----N-----E005

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5. DETAILED DESCRIPTION OF TRAINING METHODOLOGIES AND TECHNIQUES

5.1 Taxonomy

5.2 Training Techniques

5.3 Learning Rate

5.4 Media

5.5 Mode of Delivery

5.6 Training Events

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5.1 Taxonomy

A taxonomy is a classification based on explicit principles. The purpose of taxonomies in the training domain is to classify training objectives.

5.1.1 Levels

There are five levels, numbered 1 to 5, plus an initial level (numbered 0) of pure information. They are defined as follows :

Level 0 Not performance-related. 'To be aware of; to be familiar with'

Level 1 Requires a basic knowledge of the subject. It is the ability to remember essential points. The trainee is expected to memorise data and to restore it.

Level 2 Requires an understanding of the subject sufficient to enable the student to discuss intelligently. The individual is able to represent for himself or herself certain objects and events and to act upon these objects and events.

The verb 'to appreciate' means that the student is able to state the plan but not required to apply it. In a given situation the student will say that co-ordination should be done and with whom (the student appreciates the necessity for co-ordination). In a practical situation (i.e. Level 3) the student will co-ordinate - that is he/she will apply the techniques and procedures learnt.

Level 3 Requires a thorough knowledge of the subject and the ability to apply it with accuracy. The student should be able to make use of his/her repertoire of knowledge to develop plans and activate them.

Level 4 Ability to establish a plan within a set of known applications following the correct chronology and the adequate method to resolve a problem situation. This involves the integration of known applications in a familiar situation.

Level 5 Ability to analyse new situation in order to elaborate and apply one or other relevant strategy to solve a complex problem. The defining feature is that the situation is qualitatively different to those previously met, requiring judgement and evaluation of options.

5.1.2 Action Verbs

Table 4: Action Verbs

To BE AWARE OF Level 0	To KNOW Level 1	To UNDERSTAND Level 2	To APPLY Level 3	To ANALYSE AND INTEGRATE Level 4	To EVALUATE AND SELECT Level 5
BE AWARE OF	DEFINE	APPRECIATE	APPLY	ADAPT	APPRAISE
FAMILIARISE	DRAW	CHARACTERISE	CALCULATE	ANALYSE	BALANCE
	IDENTIFY	DEMONSTRATE	CHOOSE	CO-ORDINATE	DETERMINE
	LIST	DESCRIBE	COMPLETE	FILE	EVALUATE
	NAME	DIFFERENTIATE	ENCODE/DECODE	INTEGRATE	IMPROVISE
	QUOTE	EXPLAIN	ESTIMATE	ORGANISE	REVIEW
	RECALL	INTERPRET	EXTRACT	PREDICT	THEORISE
	RECOGNISE		ISSUE		VALIDATE
	SPECIFY		LOCATE		
	STATE		OPERATE		
			ORGANISE		
			UPDATE		
			USE		

Note: This is not a comprehensive listing. Some verbs may occur at more than one level depending on the interpretation put on them.

5.1.3 Definition of Action Verbs

Defining action verbs becomes increasingly difficult as the level increases.

Higher levels (4-5) and even Level 3 are the culmination of many actions and can only be described by either a breakdown into component actions or by a few high level words which are not exclusive to a particular level. This is compounded by the fact that such a list of verbs is not inclusive and has overlaps between the levels.

The main difference between Levels 4 and 5 is novelty (qualitative) of the problem. The actions are all similar apart from the integration of schemata in a new way.

Each level subsumes those previous to it, as it is hierarchical. You then begin to run out of suitable verbs.

The list is not complete, but a guideline only. We can in future add AIS specific terms known to refer to a particular level of performance.

5.1.4 Correspondence with Other Taxonomies

For readers who are already familiar with other taxonomies, Table 5 below gives an approximate relationship.

Table 5: Relationship between Taxonomies

TFCCC	Bloom (1956)	ICAO (1981)	France MAIS	Germany	Brien and Eastmond (1994)	Your Taxonomy
0						
1						
1	1	M	1	V(S)(R)		
2						
2	2	2	V(S&C)(P)			
3	3	3	A	W(S) R		
4	3					
4	4	I	W(S&C)R			
5						
5	6	5	S	4	W(C)P	

Note: The empty column on the right allows the reader to enter the taxonomy used locally if this taxonomy differs from the listed ones.

5.1.5 Brief Summary of Other Taxonomies

Stated here are the basic outlines of the different taxonomies referred to in Table 5.

5.1.5.1 ICAO (1981)

ICAO classifies training objectives in five steps or grades:

1. Denotes an understanding of a principle.
2. Denotes a basic knowledge of the subject.
3. Denotes knowledge of the subject, and the ability, where applicable, to apply it in practice.
4. Denotes a thorough knowledge of the subject, and the ability where applicable, to apply it with speed and accuracy.
5. Denotes a deep and extensive knowledge of the subject and the ability to apply procedures derived from it with judgement in the light of the prevailing circumstances.

5.1.5.2 Bloom (1956)

Classification of training objectives is achieved by allocating activity to one of three domains: cognitive, affective, psychomotor:

1. Cognitive

Recall or recognition of knowledge and the development of intellectual abilities and skills.

Within cognitive:

- Knowledge: The recall of specific and isolated bits of information and of methods to find, organise and use them.
- Comprehension: Lowest level of understanding.
- Application: Use of abstractions in particular and concrete situations.
- Analysis: Breakdown in constituent elements or parts such that the relative hierarchy is made clear and the relations between the ideas are made explicit.
- Judgement: About the values of material and methods.

2. Affective

Changes in interest, attitudes and values, and the development of appreciation and adequate adjustment.

3. Psychomotor

Manipulative or motor-skill area.

5.1.5.3 *Ecole Nationale de l'Aviation Civile (ENAC) - France*

ENAC classifies training objectives in four stages of ability (MAIS):

M - Memorisation: Ability to remember essential points. The trainee is expected to memorise the data and to retrieve it.

Example: Trainees state runway orientation.

A - Application: Ability to adopt the relevant behaviour in front of a particular and already known problem.

Example: Trainee vectors an aircraft to a defined track. This task is performed in isolation, i.e. not in combination with other tasks.

I - Integration: Ability to establish a plan within a set of known applications following the correct chronology and the adequate method to resolve a problem situation.

Example: Trainee vectors an aircraft to a defined track. While performing that vectoring trainee has to solve control problems and conflicts with other aircraft have to be avoided.

S - Strategy: Ability to analyse new situation in order to elaborate and apply one or other relevant strategy to solve a complex problem.

Example: Trainee analyses a new complex situation, then vectors and sequences aircraft to final approach.

5.1.5.4 *Deutsche Flugsicherung (DFS) Akademie Germany*

The classification is mainly based upon the six-level model of Bloom, but contracted into four levels:

1. Knowledge: Meaning the ability to memorise and recall facts and acquired knowledge.
2. Understanding: Meaning a functional knowledge, for example to describe procedures, methods, rules, etc.
3. Application: Meaning the transfer of knowledge and understanding by acquired formula and/or procedures in new situations.
4. Assessment: (including Levels 4-6 of the Bloom taxonomy). Meaning the ability to solve complex situations by an analysis and a judgement upon the possible choice of options as well as the ability to develop procedures for a solution.

5.1.5.5 *Brien and Eastmond (1994)*

Classification is achieved through determining levels of competency from stored knowledge to carrying out a complex sequence of actions:

- | | |
|--|---|
| <u>Virtual competency</u> : | Declarative and procedural knowledge stored in long-term memory. |
| <u>Working competency</u> : | Activated knowledge permits representation of existing, intermediate and desired situations, and also the generation and simulation of plans. |
| <u>Reproductive competency</u> :
(simple and complex) | Uses a known sequence of sub-procedures to accomplish the task. |
| <u>Productive competency</u> : | Has to discover, using heuristics, the order in which sub-procedures must be executed. |

5.2 Training Techniques

Lect: Lecture

A straight talk or exposition, possibly using visual or other aids, but without group participation other than questions, usually at the conclusion.

Lesson: Lesson

Training method incorporating a number of instructional techniques designed to ensure the participation of the students in reaching the specified behavioural objectives. The instructor is able to ascertain whether material is being assimilated.

Demo: Demonstration

A teaching method whereby the instructor, by doing, shows the student(s) what to do and how to do it, and with associated explanations indicates why, when and where it is done.

Case: Case Study

Technique in which a real or fictional situation or series of events are presented to trainees for their analysis and consideration of possible solutions or problems identified. Their findings in a real situation can be compared with what actually occurred.

Sup. Pract: Supervised Practices

Manipulations of equipment or of job aids where the instructor provides the necessary feedback.

Interactive Training

Provision of knowledge and skills by means of a computer with numerous interactions, student responses, analysis and allowing, when appropriate, free individual rhythm of learning (self-paced manner). This encompasses interactive guided learning and interactive exploration.

- **Interactive Guided Learning**

The student has to follow a predetermined path through the training material. There is extensive interaction between the student and the computer in the form of questions, feedback and participation.

- **Interactive Exploration**

The student is allowed to follow his or her own path through the training material. There is extensive interaction between the student and the computer in the form of questions, feedback and participation.

Simul: Simulation

A means of reproducing a representation of real working conditions to enable trainees to acquire and practise skills, knowledge and attitudes. Safety, costs and training effectiveness are some of the factors to be considered.

Role: Role-play

Students act out a working model of some real-world human situations in a group. They are provided with background data and roles to play together with constraints which may change as the play proceeds.

Brief: Briefing

With regard to training, a briefing is an introduction to a training event during which interruption of the student's activity is not normally anticipated e.g. OJT and simulation. Briefing and debriefing are always included as an integral part of training technique and considered as supplementary training events.

Debrief: Debriefing

With regard to training, a debriefing is a review and discussion on the outcome of a training event based on a formative assessment of that event. Briefing and debriefing are always included as an integral part of training technique and considered as supplementary training events.

Tutoring

The act of giving additional knowledge and guidance to an individual or small group of trainees in an off-the-job, informal training situation. Tutoring is considered as a supplementary training event.

5.3 Learning Rate

Self: Self-paced Learning

A learning/teaching system whereby the learner is able to control the pace at which he/she works.

Rstd: Time-restricted Learning

A learning/teaching system whereby the course developer or the instructor controls the pace at which the learner has to work.

Real: Real Time

A learning/teaching system whereby the pace at which the learner has to work is the same as in a real operation.

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5.4 Media

Media is the physical means by which an instructor communicates a message. One medium can use several supports (for instance, a multimedia computer may use graphics, video and sound). In this document we are going to define some of these media but will not attempt to list exhaustively the many types of support and educational materials.

Eqpt: Real Equipment

Either used in operational conditions (OJT) or in non-operational conditions (shadowing or demonstration).

Sim: Simulator

A device which presents the student with a representation of the important features of the real situation and reproduces operational conditions which enable him or her to practice directly real-time tasks.

PTT: Part-task Trainer

Training machine which allows the student to practice, in isolation, some operational functions independently from other functions which are not represented there although they are necessarily associated to the first ones in the operational task.

MMC: Multimedia Computer

Multimedia computer or workstation (networked or stand-alone) dedicated to one student to practice CBT.

AV: Audiovisual Aids

The generation, recording, storage and reproduction of animated images and associated sounds (video, films and other).

Vis: Visual Aids

Aids to communication which utilise the sense of sight (such as computer-based presentation, slides, overheads or viewfoils, pictures, charts, posters, and models).

Aud: Audio Aids

Aids to communication which utilise the sense of hearing.

Txt: Text

The provision of written documents including handouts, textbooks, manuals, training documents, etc.

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5.5 Mode of Delivery

5.5.1 Dimensions of Mode of Delivery

The mode of delivery indicates the way training is delivered. We consider modes of delivery generally before considering the specificities of AIS training.

The two main dimensions of mode of delivery are:

- whether it should be individualised or given in a group,
- and
- whether the training should be based on validated training material or should be left to the judgement of the instructor.

5.5.2 Terms Describing the Dimensions of Mode of Delivery

Material-dependent

A training event will be considered as material dependent when its provision requires the use of validated training material.

Instructor-dependent

A training event will be considered as instructor-dependent where its provision does not require the use of validated training material and, therefore, relies much more on instructor performance. The instructor may make use of reference material.

Validated Training Material

Validated training material takes the form of a well documented and repeatable package which has been tested and shown to be effective.

Reference Material

This is material not specifically developed for training purposes and may include:

- ICAO Annexes,
- ICAO Documents,
- operational procedures,
- manuals, etc.

Individualised Training

The provision of possibly different stimuli to each student, the separated analysis of their response and the provision of consequent new stimuli independent of the answers of other students.

Instruction of a small group of students which are considered as an entity is considered as individualised training.

Group Training

All the participants are presented the same learning material under the same conditions.

5.5.3 Range of Modes of Delivery

The two dimensions, each with two options, gives four possible modes of delivery:

Group Training - Instructor-dependent

The Instructor is the main source of information and decides what to include and how to carry out the training, being given training objectives only.

Group Training - Material-dependent

The instructor is provided with validated training material which he must use according to detailed instructions provided in an instructor's guide.

Individualised Training - Instructor-dependent

The instructor works as a tutor to each individual trainee, prescribing readings and activities according to the need of each individual and giving private sessions/explanations from time to time. A modification of this mode is the tutoring of a very small group of trainees with similar needs.

Individualised Training - Material-dependent

The trainee is given self-instructional validated training material. The Instructor is responsible for the planning of trainees' activities, for controlling their progress according to detailed instructions provided in an instructor's guide and from time to time arranging for supplementary explanations, discussions, etc., according to individual needs.

5.5.4 Determining Mode of Delivery

The choice of **delivery mode** for each module and each instructional event within each module depends on many factors.

When detailing the training module, the course developer shall specify the mode of delivery by using Table 6 below.

Table 6: Identifying Mode of Delivery

	Material-dependent	Instructor-dependent
Group Training	GTMD	GTID
Individualised Training	ITMD	ITID

Generally, individualised training, rather than group training, may be considered **desirable**.

However, these general considerations have to be adapted to the specificity of AIS training:

- Achieving the objective(s) involve(s) very limited ‘social skills’ (human relations) requiring interaction between individuals;
- Not all the trainees of the target population have to achieve all the objectives (e.g. different categories are to perform partly different tasks);
- There are degrees of variation in the target population's acquired skills and aptitudes of learning style;
- Trainees are sophisticated self-learners.

The nature of individualised training is very different from group training and there may be constraints which force you to choose group training even if individualised training is desirable. In reaching this decision it will be necessary to first consider:

- trainees and instructors **attitudes** towards individualised and group training;
- trainees predominant **learning mode** and aptitudes for self-study;
- **number of trainees** that can be released simultaneously from their jobs (flexibility in scheduling training);
- **available resources** (time, money, instructors, course developers, equipment, training facilities, etc.);

- **existing training schemes** (Can an individualised course be accommodated in the existing programme?).

In Annex 10 - 'Individualized Training Guideline' - of ICAO's TRAINAIR Training Development Guideline (ICAO, 1991) can be found advice on the preparation and implementation of individualised training.

5.5.5 Determining whether Validated Training Material is Justified

Validated training material is training material produced for a specific training need. It has proved to be relevant to aspects of AIS training and a regular assessment of its efficiency and accuracy is ensured. Harmonisation process will lead to the availability of more and more largely validated training material.

Validated training material (for instance, what TRAINAIR calls a Standardised Training Package - STP) may be considered desirable when factors such as the following prevail:

- a **limited number of qualified instructors** is available;
- **there is a high turnover of instructors;**
- achieving the **same standard** (reliable level of competency) at the end of formal **training is important;**
- a **large number of trainees** will use the training material;
- the **subject-matter content is stable** (will not require major updating in the next five years);
- training has to be implemented in **various locations;**
- **sufficient resources** are available for course development (course developers, production support staff, equipment, time and money).

5.5.6 How to Determine Mode of Delivery

In determining the desirable delivery mode for individual modules and instructional events within the modules, the course developer must take into account that the various decision factors listed above may have different priorities and that, in the final analysis, only one or two of them will be decisive.

The importance of the decision factors may also vary according to the performance objectives.

Individual modules may well consist of material for both individualised and group training.

The following forms which are derived from ICAO's TRAINAIR (Training Development Form 8) have been designed as a job aid to help **indicate the**

desirable mode of delivery. They ensure that the most important decision factors are considered and provide a summary justification in a convenient format.

It can be more profitably used for choosing between individualised and group training in new course development rather than in upgrading existing training where the course developer may already benefit from considerable past experience.

**Training Development
Form 8**

MODE OF DELIVERY

Put a cross in the appropriate columns and add up the total. This indicates the tendency towards the mode of delivery, but the final choice will be a matter of judgement. Look out for overriding factors and constraints.

QUESTIONS	AGREE	DISAGREE	DON'T KNOW
1. The objectives rarely include 'social skills' (human relations) which require the interaction of individuals			
2. Training is task-oriented rather than growth-oriented (career development)			
3. Different individuals in the target population (e.g. different categories) are to perform partly different tasks			
4. The target population is mixed (differences in previously acquired skills, aptitudes of learning style)			
5. Trainees are sophisticated self-learners			
Total			

If more crosses in this column, consider individualised training

If more crosses in this column, consider group training

**Training Development
Form 8**

**MODE OF DELIVERY
(PART 2)**

Put a cross in the appropriate columns and add up the total. This indicates the tendency towards the mode of delivery, but the final choice will be a matter of judgement. Look out for overriding factors and constraints.

QUESTIONS	AGREE	DISAGREE	DON'T KNOW
1. The content of the topic is stable (expected to be valid with minor modifications five years or more)			
2. The number of individuals to train is large			
3. It is important that trainees achieve the same standard (reliability of output)			
4. Qualified instructors are scarce or their turnover is high			
5. The same training is to be implemented in various locations			
Total			

If more crosses in this column, consider preparing validated training material

If more crosses in this column, development of validated training material may not be justified

5.5.7 Specificity of AIS

Mode of Delivery

AIS is a discipline based on national and international standards and, therefore, material-dependent instruction is the most effective method for use in training.

Table 7: Material-dependent Instruction

	Material-dependent
Group Training	GTMD
Individualised Training	ITMD

Teamwork

Teamwork is an integral part of AIS. Team building should be considered throughout the training. This should be always kept in mind when considering the need of individualised training. This fact makes the difference between 'individualised' and 'group' a little more difficult.

Individualised Training Involving Several Training Cells

This consideration of team building and the operational conditions imply that, very often in AIS training, the 'learner' is not an individual but part of a 'team'.

A team is '... a group of two or more persons who interact dynamically and interdependently within assigned specific roles, functions and responsibilities. They have to adapt continuously to each other ...' (EATCHIP, 1996a).

There is of course an apparent contradiction between the terms 'individualised' and 'team-interaction'. This has to be understood by differentiation between the terms 'team' and 'group'.

Example: A number of students, in groups of two or three, may be conducting the same simulation exercise. Each group being independent of the other. This is not group training although within each group the individuals work as a team. However, the simulation could be taken to a higher level and all the groups now work in co-ordination with each other. We would call this 'group training'.

5.6 Training Events

5.6.1 Definition

Training Event

A training event is a set of actions (instructional events) identified in the training program and the student timetable as the smaller unit. The training event has a name but is more accurately described by the association of a training technique, a learning rate, a media and a mode of delivery.

Instructional Event

An instructional event is any action which moves the learner (trainee) towards the accomplishment of an instructional objective (TRAINAIR).

5.6.2 List of Training Events

Group Training

Table 8: List of Group Training Events

Training Event	Comments
Group simulation	Real-time simulation simultaneously involving several sectors
Lecture	
Lesson	
Demonstration	Action or procedure shown by instructor
Case study	
Role-play	
Hands-on	Supervised practice on real equipment which is not in operation
Shadowing	Passive supervised practice on real equipment which is in operation
Visit	Occasion to experience an operational environment
Additional Training Event	Comments
Briefing	Included in the other training events
Tutoring	Included in the other training events
Debriefing	Included in the other training events

Individualised TrainingTable 9: List of Individual Training Events

Training Event	Comments
Lesson	To be individualised, it has to be self-study or distance learning
Case studies and role-plays	To be individualised, they have to be based upon text scenario or upon dedicated software
Hands-on	Supervised practice on real equipment which is not in operation
Shadowing	Passive supervised practice on real equipment which is in operation
Exercise	Gives practice in consolidating knowledge and understanding and helps to develop skills - not necessarily on a simulator
Pre-simulation exercise	It allows practice in restricted, or in real time, of part of the skills necessary for the operational task in a possibly not realistic environment
Analytical simulation	A particular part-task training based on simulations. It allows for practice in restricted or in real time a part of the skills necessary for the operational task in a realistic environment (PTT or simulator)
Global simulation	Might involve an individual student or an individualised cell made up of several students
Guided pre-simulation	Pre-simulation with interactive assessment, comments and guidance
Guided analytical simulation	Analytical simulation with interactive assessment, comments and guidance
Guided CBT	Interactive guided learning making use of a multimedia computer
Explorative CBT	Interactive-discovery learning making use of a multimedia computer
Additional Training Event	Comments
Briefing	Included in the other training events
Tutoring	Included in the other training events
Debriefing	Included in the other training events

5.6.3 Possible Combination of Properties for Training Events

Below can be found possible combinations of properties, i.e. training technique, learning rate, media and mode of delivery for a given type of training event:

Training Event			
Training technique	Learning rate	Media	Mode

Group Training

Group Simulation

Group Simulation			
Simul	Real	Sim	GTMD

Lecture

Lecture			
Lect	Rstd	AV, Vis, Aud, Txt	GTMD

Lesson

Lesson			
Lesson	Rstd	AV, Vis, Aud, Txt	GTMD

Demonstration

Demonstration			
Demo	Rstd	AV, Vis, Aud, Txt	GTMD

Case Study

Case Study			
Case	Rstd	AV, Vis, Aud, Txt, MMC	GTMD

Note: If a case-study session includes use of simulator or PTT, this is called simulation.

Role-play

Role-play			
Role	Rstd	AV, Vis, Aud, Txt, MMC	GTMD

Note: If a role-play session includes use of simulator or PTT, this is called simulation.

Hands-on

Hands-on			
Sup. Pract	Real	Eqpt	GTMD

Note: Group training with at least some of the students performing a few planned operations at a position, the others watching and listening.

Shadowing

Shadowing			
Sup. Pract	Real	Eqpt	GTMD

Visit

Visit			
Sup. Pract	Real	Eqpt	GTMD

Individualised Training

Lesson

Lesson			
Lesson	Rstd	AV, Vis, Aud, Txt, MMC	ITMD

Demonstration

Demonstration			
Demo	Rstd	AV, Vis, Aud, Txt, MMC	ITMD

Exercise

Exercise			
Sup. Pract	Rstd	PTT, Eqpt, MMC	ITMD

Case Study

Case Study			
Case	Rstd	AV, Vis, Aud, Txt, MMC	ITMD

Note: If a case-study session includes use of simulator or PTT, this is called simulation.

Role-play

Role-play			
Role	Rstd	AV, Vis, MMC	ITMD

Note: If a role-play session includes use of simulator or PTT, this is called simulation.

Hands-on

Hands-on			
Sup. Pract	Real	Eqpt	ITMD

Shadowing

Shadowing			
Sup. Pract	Real	Eqpt	ITMD

Pre-simulation Exercise

Pre-simulation Exercise			
Interactive	Rstd/Real	PTT, MMC	ITMD

Analytical Simulation

Analytical Simulation			
Interactive	Rstd/ Real	PTT, MMC	ITMD

Global Simulation

Global Simulation			
Simul	Real	Sim	ITMD

Guided Pre-simulation

Guided Pre-simulation			
Interactive	Rstd/Real	PTT, MMC	ITMD

Note: There are no simulators known to us which present significant features of guidance during the simulation (June 1998).

Guided Analytical Simulation

Guided Analytical Simulation			
Interactive	Rstd/Real	PTT, MMC	ITMD

Note: There are no simulators known to us which present significant features of guidance during the simulation (June 1998).

Guided CBT

Guided CBT			
Interactive	Self	MMC	ITMD

Explorative CBT

Explorative CBT			
Interactive	Self	MMC	ITMD

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5.7 **Assessment**

The assessment of student performance is a complex, highly sensitive and confidential matter.

This chapter outlines a basic principle and some very broad directions on the adequacy of the different testing methods to the different levels of our taxonomy.

Also highlighted are the different functions of assessment.

5.7.1 **Basic Principle**

A basic principle has been adopted - assessment is an integral part of the training activity. The assessment plan should therefore be integrated into the training plan from the beginning of its conception.

There are two broad categories of assessment:

- **Formative assessment** is a verbal or written factual assessment given for the purpose of personal development and which should have an important and lasting influence on that person's abilities or attitudes. It should be only for that person's attention or use. The formative assessment is done through progress tests.
- **Summative assessment** is a verbal and written factual judgement which represents a summary of the trainees attitudes and abilities over a period of time. The summative assessment is done through mastery tests.

5.7.2 **Function of Assessment**

Four functions are identified as being frequently attributed to the assessment process.

5.7.2.1 *Progress*

Checking if individuals, or groups, have achieved stated objectives (prerequisites) that allow them to start the next training phase or module.

5.7.2.2 *Validation*

Checking that some objectives have been achieved in order to determine if the training was efficiently provided and to decide on modification and upgrades.

5.7.2.3 *Prediction*

To check the performance of individuals and predict their success as professionals.

5.7.2.4 *Reward*

To produce results to be used for reward and ranking of the students.

This document only refers to the two first functions: 'progress measurement' and 'validation of training'. Trainers should be aware that it is a complex and risky process to apply the assessment functions 'prediction' and 'reward'.

5.7.3 **Assessment Techniques**

5.7.3.1 *Assessment of 'Level O' Objectives*

Pure information ('To be aware of...'). Performance not measurable therefore no necessity for assessment.

5.7.3.2 *Assessment of 'Level 1' Objectives*

Level 1: The objectives require a basic knowledge of the subject. It is the ability to remember essential facts. The trainee is expected to memorise data and to retrieve it when required.

What is demanded from the student is to store facts and information in the long-term memory during formative and summative assessment:

- select the correct answer from lists of information/statements,
- recall the fact directly from memory,
- mark true or false to presented statements,
- fill in missing data,
- identify/name components of a given image or picture.

Examples of tests: matching, true/false, completion, identification.

Scoring can be done by counting the number of answered items and/or by counting the number of correct answers. A total score can either be presented as a summary score or as a ratio. Scoring traces success to the relevant training objectives.

Essential elements: time, sufficient items.

5.7.3.3 *Assessment of 'Level 2' Objectives*

Level 2: The objectives require an understanding of the subject sufficient to enable the students to discuss intelligently. The individual is able to represent for himself, or herself, certain objects and events and to act upon these objects and events.

The verb 'to appreciate' means that the students are able to state the plan but not required to apply it. In a given situation, the student will say that co-ordination should be done and with whom (the student appreciates the necessity for co-ordination). In a practical situation, (i.e. Level 3) the student will actually co-ordinate - that is, he/she will apply the techniques and procedures learnt.

What is demanded from the student is to process the information given so that during formative or summative examination he or she can:

- illustrate concepts and principles,
- give examples of cause and effects from a specific point of view,
- predict outcomes and consequences from given inputs.

Examples of tests: multiple choice, short answer, structured and oral questions.

Scoring can be done by judgements from Subject Matter Experts (SMEs) on a Likert type scale which goes from 'not applicable at all' to 'very appropriate'. A total score can either be presented as a summary score or as a ratio.

Essential elements: time, representative items.

5.7.3.4 *Assessment of 'Level 3' Objectives*

Level 3: The objectives require a thorough knowledge of the subject and the ability to apply it with accuracy. The student should be able to make use of his/her repertoire of knowledge to develop plans and activate them.

What is demanded from the student is to process the information given so that during examination he/she can carry out action(s) or task(s) specific to a stated training objective.

Example of tests: demonstration, practical.

Scoring can be done by judgements from SMEs on a Likert type scale which goes from 'not applicable at all to 'very appropriate'. A total score can either be presented as a summary score or as a ratio.

Essential elements: completeness, appropriacy, accuracy, expedition.

5.7.3.5 *Assessment of 'Level 4' Objectives*

This subject is to be developed later as there are no Level 4 objectives in the basic phase.

5.7.3.6 *Assessment of 'Level 5' Objectives*

This subject is to be developed later as there are no Level 5 objectives in the basic phase.

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GLOSSARY

For the purposes of this document, the following glossary of terms shall apply. The terms defined here are taken from the 'Glossary of Training Terms' (EATCHIP, 1996b), currently being compiled by DG4 of the TF-CCC as part of the Specification of Training Tools and Methods.

Term	Definition	Context
Taxonomy	Taxonomy is a classification based on explicit principles. The purpose of taxonomies in the training domain is to classify training objectives.	Objectives
Level 0	Not performance related. 'To be aware of; to be familiar with'.	Objectives
Level 1	Requires a basic knowledge of the subject. It is the ability to remember essential points. The trainee is expected to memorise data and to retrieve it.	Objectives
Level 2	Requires an understanding of the subject sufficient to enable the student to discuss intelligently.	Objectives
Level 3	Requires a thorough knowledge of the subject and the ability to apply it with accuracy. The student should be able to make use of his/her repertoire of knowledge to develop plans and activate them.	Objectives
Level 4	Ability to establish a plan within a set of known applications following the correct chronology and the adequate method to resolve a problem situation. This involves the integration of known applications in a familiar situation.	Objectives
Level 5	Ability to analyse a new situation in order to elaborate and apply one or other relevant strategy to solve a complex problem. The defining feature is that the situation is quantitatively different to those previously met, requiring judgement and evaluation of options.	Objectives

Term	Definition	Context
Institutional Training	Training that is provided in an establishment designed or designated specifically for training and staffed for that purpose. (For AIS, this phase of training may be conducted at a training establishment, an operational training unit or by an approved method of distance learning.)	Phases
Basic Training (Phase 1 <i>Ab Initio</i>)	Training designed to impart fundamental knowledge and skills to enable AIS students to progress to specialised AIS training.	Phases
Basic Training (Phase 2 Specialist)	Specialised AIS training to provide knowledge and skills related to a job category and appropriate to the discipline to be pursued in the AIS environment (ARO, NOF and Publications).	Phases
Operational Training	Training given in the operational work situation and following institutional training. It comprises transition training, pre-OJT and OJT.	Phases
Transition Training	Phase following basic training during which site-specific theoretical knowledge and understanding will be transferred to the trainee using a variety of methods and during which skills will be developed through the use of site-specific simulations.	Phases
Pre-On-the-Job Training (Pre-OJT)	Phase of locally-based training during which extensive use of simulation, using site-specific facilities, will enhance the development of previously acquired routines and abilities to an exceptionally high level of achievement.	Phases

Term	Definition	Context
On-the-Job Training (OJT)	'Live training' where previously acquired skills and routines are further developed and consolidated under the supervision of a qualified coach in an operational situation.	Phases
Continuation Training	Provision of training related to a job category in order to increase knowledge and skills and/or to prepare for new technologies.	Phases
Conversion Training	Provision of knowledge and skills appropriate to a change in job category, environment and/or systems.	Phases
Refresher Training	The process of further training in work currently performed in order to improve job performance. Also, further training given in skills previously acquired but in which the individual may not currently be up to standard.	Phases
Subject	A predominant theme entered upon during a course.	Syllabi
Topic	Theme which presents a unity and which corresponds to one major training objective.	Syllabi
Sub-topic	Subdivision of a topic.	Syllabi
Objective (General)	What the training is designed to accomplish overall. Also called training purpose or aim.	Objectives
Objective (Performance)	Clear and unambiguous statement of what a student is expected to do (Performance) with the minimum level of acceptable performance (Standard) and the conditions under which the performance is to be carried out (Conditions): PSC	Objectives

Term	Definition	Context
Objective (Training) <i>also 'Intermediate or Enabling'</i>	What a trainee is expected to accomplish in terms of skills, knowledge and attitudes at specified points in a training course.	Objectives
Syllabus	A listing of subjects and topics showing the training necessary to fill the training gap and achieve the course aim.	Organisation
Training Gap	The training required to bring students from their present level of competence to the level identified in the training aim.	Organisation
Training Plan	A training plan is a syllabus with additional information. The training plan details, for each subject or topic, the training requirements, the methods of achievement and, usually, the time scale for achievement.	Organisation
Training Programme	An implementation of the training plan in terms of training events set out in a chronological sequence and showing the time allowed for each, the place, the features of instruction to be used and the person responsible for giving it.	Organisation
Training Event	A set of actions (instructional events) identified in the training plan (and later in the training programme and in the student timetable) as a smaller unit.	Organisation
Instructional Event	Any action which moves the trainee towards the accomplishment of any instructional objective.	Organisation
Training Event Plan	Document used by an instructor when preparing and providing the training.	Organisation
Media	The physical means by which an instructor communicates a message embedded within educational material. One media can use several supports.	Media

Term	Definition	Context
Real Equipment	Either used in operational conditions (OJT) or in non-operational conditions (shadowing or demonstration).	Media
Simulator	A device which presents the student with a representation of the important features of the real situation and reproduces operational conditions which enable him or her to practice directly real-time tasks.	Media
Part-task Trainer	Training machine which allows the student to practice some operational functions independently from other functions which are not represented there, although they are necessarily associated to the first ones in the operational task.	Media
Multimedia Computer	Multimedia computer or workstation (networked or stand-alone) dedicated to one student to practice CBT.	Media
Audiovisual Aids	The generation, recording, storage and reproduction of animated images and associated sounds (video, films and other).	Media
Visual Aids	Aids to communication which utilise the sense of sight (such as computer-based presentation, slides, overheads or viewfoils, mock-up, models, posters).	Media
Audio Aids	Aids to communication which utilise the sense of hearing.	Media
Text	The provision of written documents including handouts, textbooks, training manuals, etc.	Media
Self-paced Learning	A learning/teaching system whereby the learner is able to control the pace at which he/she works.	Rate
Time-restricted Learning	A learning/teaching system whereby the course developer or the instructor controls the pace at which the learner has to work.	Rate

Term	Definition	Context
Real time	A learning/teaching system whereby the pace at which the learner has to work is the same as in a real operation.	Rate
Lecture	A straight talk or exposition, possibly using visual or other aids, but without group participation other than questions, usually at the conclusion.	Techniques
Lesson	Training method incorporating a number of instructional techniques designed to ensure the participation of the students in reaching the specified behavioural objectives. The instructor is able to ascertain whether material is being assimilated.	Techniques
Demonstration	A teaching method whereby the instructor, by doing, shows the student(s) what to do and how to do it, and with his associated explanations indicates why, when and where it is done.	Techniques
Case Study	Technique in which a real or fictional situation or series of events are presented to trainees for their analysis and consideration of possible solutions or problems identified.	Techniques
Supervised Practice	Manipulations of equipment or of job aids where the instructor provides the necessary feedback.	Techniques
Interactive Training	Provision of knowledge and skills by means of a computer with numerous interactions, student responses, analysis and allowing for appropriate individual rhythm of learning (self-paced manner).	Techniques
Interactive Guided Learning	The student has to follow a predetermined path through the training material. There is an extensive interaction between the student and the computer in the form of questions, feedback and participation.	Techniques

Term	Definition	Context
Interactive Exploration	The student is allowed to follow his own path through the training material. There is extensive interaction between the student and the computer in the form of questions, feedback and participation.	Techniques
Simulation	A means of reproducing a representation of real working conditions to enable trainees to acquire and practice skills, knowledge and attitudes. Safety, costs and training effectiveness are some of the factors to be considered.	Techniques
Role-play	Students act out a working model of some real-world human situation in a group. They are provided with background data and roles to play together with constraints which may change as the play proceeds.	Techniques
Job Aid	Device (e.g. checklist) made available on-the-job and designed to facilitate correct performance of the task by extending the performer's capability to retain and utilise information.	Techniques
Briefing	With regard to training, a briefing is an introduction to a training event during which interruption of the student's activity is not normally anticipated e.g. OJT and simulation.	Techniques
Debriefing	A debriefing is a review and discussion on the outcome of a training event based on a formative assessment of that event. Briefing and debriefing are always included as an integral part of training technique.	Techniques
Tutoring	The act of giving additional knowledge and guidance to an individual or small group of trainees in an off-the-job, informal training situation.	Techniques
Mode of Delivery	The mode of delivery is the way used to deliver training.	Delivery

Term	Definition	Context
Material-dependent	A training event will be considered as material-dependent when its provision requires the use of validated training material.	Delivery
Instructor-dependent	A training event will be considered as instructor-dependent where its provision does not require the use of validated training material and, therefore, relies much more on instructor performance. The instructor may make use of reference material.	Delivery
Validated Training Material	This takes the form of a well-documented and repeatable package which has been tested and shown to be effective.	Delivery
Reference Material	This is material not specifically developed for training purposes and may include ICAO Annexes, ICAO Documents, operational procedures, manuals, etc.	Delivery
Individualised Training	The provision of possibly different stimuli to each student, the separated analysis of their response and the provision of consequent new stimuli independent of the answers of other students.	Delivery
Group Training	Either the provision of stimuli or the analysis and the processing of the feedback cannot be separately done for each student.	Delivery
Teamwork	The ability of a group of people to work well together. An integral part of AIS. Team building should be considered throughout the training. This should be always kept in mind when considering the need for individualised training.	Delivery
Group Simulation	Real-time simulation simultaneously involving several sectors.	Organisation

Term	Definition	Context
Exercise	Practice in consolidating knowledge and applying it in order to increase or develop understanding and skill.	Organisation
Hands-on	Supervised practice on real equipment which is not in operation.	Organisation
Shadowing	Passive supervised practice on real equipment which is in operation.	Organisation
Visit	Occasion to experience an operational environment.	Organisation
Pre-simulation Exercise	Allows practice in restricted or in real time part of the skills necessary for the operational task in a possibly not realistic environment.	Organisation
Analytical Simulation	A particular part-task training based on simulations. It allows to practice in restricted or in real time a part of the skills necessary for the operational task in a realistic environment (PTT or simulator).	Organisation
Global Simulation	A means of reproducing a representation of real working conditions to enable trainees to acquire and practice skills, knowledge and attitudes. Might involve individual students or an individualised cell made up of several students.	Organisation
Guided Pre-simulation	Pre-simulation with interactive assessment, comments and guidance.	Organisation
Guided Analytical Simulation	Analytical simulation with interactive assessment, comments and guidance.	Organisation
Guided CBT	Interactive guided learning making use of a multimedia computer	Organisation
Discovery CBT	Interactive discovery learning making use of a multimedia computer.	Organisation

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ABBREVIATIONS AND ACRONYMS

For the purposes of this document the following abbreviations and acronyms shall apply:

AD	Aerodrome
AFIL	Air Filed Flight Plan
AIC	Aeronautical Information Circular (<i>ICAO</i>)
AIP	Aeronautical Information Publication (<i>ICAO</i>)
AIS	Aeronautical Information Services (<i>ICAO</i>)
AIS-TF	AIS Training Task Force (<i>EATCHIP, HRT</i>)
AMSL	Above Mean Sea Level (<i>ICAO</i>)
ANS	Air Navigation Services (<i>EUROCONTROL</i>)
App.	Appendix
ARO	ATS Reporting Office (<i>ICAO</i>)
ASM	Airspace Management
ATC	Air Traffic Control (<i>ICAO</i>)
ATCO	Air Traffic Controller/Air Traffic Control Officer (US/UK)
ATFM	Air Traffic Flow Management (<i>ICAO</i>)
ATM	Air Traffic Management
ATS	Air Traffic Services (<i>ICAO</i>)
ATZ	Aerodrome Traffic Zone (<i>ICAO</i>)
Aud	Audio aids
AV	Audiovisual
AWY	Airway (<i>ICAO</i>)
Brief	Briefing
CAA	Civil Aviation Administration/Authority
Case	Case study
CBT	Computer Based Training
CD-ROM	Compact Disk - Read Only Memory
Chap.	Chapter
COM	Communications (<i>EATCHIP, ICAO</i>)
CTA	Control Area (<i>ICAO</i>)
CTR	Control Zone (<i>ICAO</i>)
DEL	Deliverable (<i>EATCHIP</i>)

Demo	Demonstration
DG	Drafting Group (<i>EATCHIP, HRT</i>)
DG4	Drafting Group 4 (<i>EATCHIP, HRT</i>)
Doc	Document (<i>ICAO</i>)
EATCHIP	European Air Traffic Control Harmonisation and Integration Programme
EATMS	European Air Traffic Management System
ECAC	European Civil Aviation Conference
Eqpt	Equipment
ET	Executive Task (<i>EATCHIP</i>)
EU	European Union
EUROCONTROL	European Organisation for the Safety of Air Navigation
EWP	EATCHIP Work Programme
FIR	Flight Information Region (<i>ICAO</i>)
FIS	Flight Information Service (<i>ICAO</i>)
FL	Flight Level (<i>ICAO</i>)
FPL	Flight Plan (<i>ICAO model format</i>)
GND	Ground (<i>ICAO</i>)
GTID	Group Training - Instructor-dependent
GTMD	Group Training - Material-dependent
GUI	Guidelines (<i>EATCHIP</i>)
HRT	Human Resources Team (<i>EATCHIP</i>)
HUM	Human Resources (Domain) (<i>EATCHIP</i>)
IACA	International Air Carrier Association
IAOPA	International Council of Aircraft Owner and Pilot Associations
IANS	EUROCONTROL Institute of Air Navigation Services
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IFALPA	International Federation of Air Line Pilots' Associations
IFATCA	International Federation of Air Traffic Controllers' Associations
IFR	Instrument Flight Rules (<i>ICAO</i>)
ITID	Individual Training - Instructor-dependent

ITMD	Individual Training - Material-dependent
IMC	Instrument Meteorological Conditions (<i>ICAO</i>)
JAA	Joint Aviation Authorities
Lect	Lecture
MET	Meteorology/Meteorological (<i>ICAO</i>)
MMC	Multimedia Computer
NAT	North Atlantic Traffic
NDB	Non-Directional Radio Beacon (<i>ICAO</i>)
NOTAM	Notice to Airmen
NOF	NOTAM Office
NSC	NOTAM Selection Criteria
OHP	Overhead Projector
OJT	On-the-Job Training
PANS	Procedures for Air Navigation Services (<i>ICAO</i>)
PC	Personal Computer
PIB	Pre-flight Information Bulletin
PSC	Performance, Standard, Conditions
PTT	Part-Task Trainer
PUB	Publications and Charts (<i>AIS-TF</i>)
Real	Real time
Role	Role-play
RPL	Repetitive Flight Plan (<i>ICAO</i>)
Rstd	Restricted (time-restricted learning)
SAR	Search And Rescue (<i>ICAO</i>)
SARPS	Standards and Recommended Practices (<i>ICAO</i>)
Self	Self-paced learning
Sim	Simulator
Simul	Simulation
SME	Subject Matter Expert

SNOWTAM	NOTAM on Snow Conditions (<i>ICAO</i>)
ST	Specialist Task (<i>EATCHIP</i>)
STP	Standardised Training Package
SUPPS	Regional Supplementary Procedures (<i>ICAO</i>)
TF	Task Force (<i>EATCHIP</i>)
TFCCC	Task Force Common Core Content (<i>EATCHIP, HRT</i>)
TMA	Terminal Control Area (<i>ICAO</i>)
TSG	Training Sub-Group (<i>EATCHIP, HRT</i>)
Txt	Text
UIR	Upper Flight Information Region (<i>ICAO</i>)
UNL	Unlimited (<i>ICAO</i>)
UTA	Upper Control Area (<i>ICAO</i>)
VFR	Visual Flight Rules (<i>ICAO</i>)
Vis	Visual aids
VMC	Visual Meteorological Conditions (<i>ICAO</i>)

LIST OF TASK FORCE MEMBERS

AIS TRAINING TASK FORCE (AIS-TF) - JUNE 1998

CHAIRMAN

Adrian ENRIGHT EUROCONTROL IANS

SECRETARY

Guyllaine DELORME FRANCE

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