



European Union Aviation Safety Agency

Notice of Proposed Amendment 2021-08(F)

in accordance with

Articles 6(3), 7 and 8 (Standard procedure: public consultation) of MB Decision
No 18-2015

Enhanced mobility options and streamlined qualifications for air traffic controllers

RMT.0668

AMC1 ATCO.D.010(a)(2)(iv) Composition of initial training

APPROACH CONTROL SURVEILLANCE RATING (APS) TRAINING - ~~SUBJECT OBJECTIVES AND~~ TRAINING OBJECTIVES

This document has been provided to help reviewers make a comparison between the Easy Access Rules for Air Traffic Controllers' Licensing and Certification (Regulation (EU) 2015/340) and associated AMCs published in December 2019 (Reference: AMC1 to ATCO.D.010(a)(2)(v)- Composition of initial training) and the amendments proposed by the ATCO CCC TF. Proposed changes are the result of the review process agreed between EASA and EUROCONTROL and performed in 2020.

TRACK CHANGES FILE

The text of the amendment is arranged to show deleted, new or relocated text as shown below:

Deleted information is in red colour with the ~~strikethrough-effect~~

New information is in blue colour text.

Relocated information is in black colour with the ~~strikethrough-effect~~

The rationale/explanation of the change is, when appropriate, in the blue text box beneath the modified objective.

When an existing objective has been relocated (and consequently renumbered), the new number is shown in black to the left of the objective and the original (former version) number in red below the new one.

3.2.1 current objective number (if not modified it is the same as in the earlier version)

3.3.3 former objective number that may have an additional subject indication if moved from one subject to another or B(asic) and R(ating) if moved from one syllabus to another. In Human Factors subject HUMUC indication means that related objective has been deleted and proposed for relocation to later stages of ATCO training (Unit-Continuation).

1.5.3 new objective number for relocated objectives at its original location that may have an additional indication of a new subject or B(asic) and R(ating) if moved from one syllabus to another.

APPROACH CONTROL SURVEILLANCE RATING (APS) TRAINING —~~SUBJECT OBJECTIVES AND~~ TRAINING OBJECTIVES

(a) The general principles that apply to this AMC are contained in AMC1 ATCO.D.010(a).

(b) The ATCO Rating training Approach Control Surveillance Rating (APS) should contain the following ~~subject-objectives and~~ training objectives that are associated with the subjects, topics and subtopics contained in Appendix ~~7-6 to of~~ Annex I to Commission Regulation (EU) No 2015/340 — Approach Control Surveillance Rating (APS).

(c) Subjects, topics and subtopics from Appendix ~~7-6 to of~~ Annex I to Commission Regulation (EU) 2015/340 are repeated in this AMC for the convenience of the reader and do not form part of it.

Subject 1 : INTRODUCTION TO THE COURSE

The subject objective is:

~~Learners shall know and understand the training programme that they will follow and learn how to obtain the appropriate information.~~

INTR 1		COURSE MANAGEMENT		
INTR	1.1	Course introduction		
APS INTR	1.1.1	Explain the aims and main objectives of the course.	2 2	ALL
<p>ACCCT TF decided to discontinue (delete) the subject objectives, now being AMCs to ATCO Licensing Regulation, since they have no added value to the remaining training content (subjects/topics/subtopisc in the IR and associated training objectives in the AMCs). The proposal to remove the whole subject INTRODUCTION TO THE COURSE as regulatory requirement not accepted. Although not required by ICAO it is very useful and represents a good practice that should continue.</p>				
INTR	1.2	Course administration		
APS INTR	1.2.1	State how the course is administered.	1 1	ALL
INTR	1.3	Study material and training documentation		
APS INTR	1.3.1	Use appropriate documents and their sources for course studies.	3 3	ALL <i>Optional content: training documentation, library, CBT library, web, learning management server</i>
APS INTR	1.3.2	Integrate appropriate information into course studies.	4 4	ALL Training documentation <i>Optional content: supplementary information, library</i>
INTR 2		INTRODUCTION TO THE ATC TRAINING COURSE		
INTR	2.1	Course content and organisation		
APS INTR	2.1.1	State the different training methods used during the course.	1 1	ALL Theoretical training, practical training, self-study, types of training events
APS INTR	2.1.2	State the subjects covered by the course and their purpose.	1 1	ALL

APS INTR 2.1.3	Describe the organisation of theoretical training.	2 2	<i>Optional content: course programme</i>	ALL
APS INTR 2.1.4	Describe the organisation of practical training.	2 2	<i>Optional content: PTP, simulation, briefing, debriefing, course programme</i>	ALL
INTR	2.2	Training ethos		
APS INTR 2.2.1	Recognise the feedback mechanisms available.	1 1	Training progress, assessment, briefing, debriefing, learner/instructor feedback, instructor/instructor feedback	ALL
INTR	2.3	Assessment process		
APS INTR 2.3.1	Describe the assessment process.	2 2		ALL

Subject 2 : AVIATION LAW

The subject objective is:

~~Learners shall know, understand and apply the Rules of the Air and the Regulations regarding reporting, airspace and appreciate the Licensing and Competence principles:~~

LAW 1 ATCO LICENSING/CERTIFICATE OF COMPETENCE						
LAW	1.1	Privileges and conditions				
APS LAW	1.1.1	Appreciate the conditions which shall be met to issue an Approach Control Surveillance rating.	3	3	Regulation (EU) 2015/340 on ATCO Licensing <i>Optional content: national documents</i>	APS
APS LAW	1.1.2	Explain how to maintain and update professional knowledge and skills to retain competence in the operational environment.	2	2		ALL
APS LAW	1.1.3	Explain the conditions for suspension/revocation of ATCO licence.	2	2	Regulation (EU) 2015/340 on ATCO Licences	ALL
LAW 2 RULES AND REGULATIONS						
LAW	2.1	Reports				
APS LAW	2.1.1	Describe the functions of, and processes for, reporting.	2	2	Reporting culture, mandatory and voluntary occurrence reporting forms air traffic incident report , Regulation (EU) No 376/2014, Regulation (EU) No 2015/1018 <i>Optional content: breach of regulations, watchbook/logbook, records, voluntary reporting</i>	ALL
	2.1.2					
	2.1.1					
<div style="border: 1px solid black; padding: 5px;"> <p>The proposal to delete this objective as being more appropriate for Unit training not accepted. Content is modified to stress the importance of occurrence reports (mandatory and voluntary)</p> </div>						
APS LAW	2.1.1	List the standard forms for reports:	1	1	Air traffic incident report <i>Optional content: routine air reports; breach of regulations; watch/log book; records</i>	ALL
	2.1.1					
<div style="border: 1px solid black; padding: 5px;"> <p>The proposal to delete this objective as already covered in the following L2 and L3 objectives accepted.</p> </div>						

APS LAW	Use forms for reporting.	3	Regulation (EU) No 376/2014, mandatory and voluntary occurrence reporting forms air traffic incident reporting form(s) <i>Optional content: routine air reports, breach of regulations, watchbook/logbook, records</i>	ALL
2.1.2		3		
2.1.3				
2.1.2				

Content improved but proposal to move this LAW 2.1.2 objective to ABES subject not accepted - The location of the practical objective in the Rating training is almost irrelevant. They all need to be covered and are dependent on the prerequisites (relation with other subjects/topics...) The idea behind this L3 objective is to apply some practical examples in the Rating training that should prepare students for application in their future working environment! The form used could be any but based on Reg. (EU) No 376/2014 Annex 1 common and specific data fields

LAW	2.2	Airspace		
APS LAW	2.2.1	Appreciate airspace classes and structure and their relevance to operations using the Approach Control Surveillance rating.	3	APS
APS LAW	2.2.2	Provide planning, coordination and control actions appropriate to the classification and structure of airspace.	4	ALL
			4	<i>Optional content: Regulation (EU) No 923/2012, international requirements, civil requirements, military requirements, areas of responsibility, sectorization, national requirements</i>
APS LAW	2.2.3	Appreciate responsibility for terrain clearance.	3	ALL

LAW 3 **ATS ATC SAFETY MANAGEMENT**

LAW	3.1	Feedback process		
APS LAW	3.1.1	State the importance of controller contribution to the feedback process.	1	ALL
			1	<i>Optional content: voluntary reporting</i>
<p>The proposal to expend the relevance of safety management to ATS (not only ATC) accepted - topic title modified accordingly.</p>				
APS LAW	3.1.2	Describe how reported occurrences are analysed.	2	ALL
			2	<i>Optional content: Regulation (EU) No 376/2014, local procedures</i>

APS LAW 3.1.3	Name the means used to disseminate recommendations.	1 1	Optional content: safety letters, safety boards web pages	ALL
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APS LAW 3.1.4	Appreciate the "Just Culture" concept.	3 3	Benefits, prerequisites, constraints Optional content: https://www.Skybrary.aero	ALL
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LAW 3.2 Safety investigation

APS LAW 3.2.1	Describe role and objectives mission of safety investigation in the improvement of safety.	2 2		ALL
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Improved wording but proposal to add ICAO Annex 13 to content not accepted - no need for any (regulatory) reference.

APS LAW 3.2.2	Define working methods of Safety Investigation.	1 1		ALL
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Objective deleted - partially covered in the objective 3.2.1 and working methods not important for ATCOs.

Subject 3 : AIR TRAFFIC MANAGEMENT

The subject objective is:

~~Learners shall manage air traffic to ensure safe, orderly and expeditious services.~~

ATM 1		PROVISION OF SERVICES		
ATM	1.1	Air traffic control (ATC) service		
APS ATM	1.1.1	Appreciate own area of responsibility.	3	APP ACP APS ACS
			3	
APS ATM	1.1.2	Provide approach control service.	4	APP APS
			4	Regulation (EU) No 923/2012, ICAO Annex 11, ICAO Doc 7030, ICAO Doc 4444 , Regulation (EU) 2017/373, operating procedures for the simulated/training environment operation manuals
More appropriate wording for simulation environment and referenced documents				
ATM	1.2	Flight information service (FIS)		
APS ATM	1.2.1	Provide FIS.	4	ALL
			4	ICAO Doc 4444 Regulation (EU) No 923/2012, Regulation (EU) 2017/373 <i>Optional content: national documents</i>
Regulatory update - Regulation (EU) 373/2017 - Transposed within ATS.TR.300(c)(1). and ATS.TR.305 and associated AMC1 ATS.TR.305				
APS ATM	1.2.2	Use an ATS surveillance system in the provision of FIS.	3	APS ACS
			3	Regulation (EU) No 923/2012, Regulation (EU) 2017/373, ICAO Doc 4444 , information to identified aircraft concerning: traffic, navigation <i>Optional content: weather</i>
Regulatory updated - Regulation (EU) 2017/373 - Operational requirements transposed within ATS.TR.105(a) AMC1 ATS.TR.205(c).				
APS ATM	1.2.3	Issue appropriate information concerning the position of conflicting traffic.	3	APS ACS APP ACP
			3	Regulation (EU) No 923/2012, Regulation (EU) 2017/373, ICAO Doc 4444 traffic information, essential traffic information
Regulatory updated - Regulation (EU) 2017/373 - AMC1 ATS.TR.155(e).				

APS ATM 1.2.4	Appreciate the use of ATIS in the provision of flight information service.	3 3	Regulation (EU) No 923/2012	ADC APS APP ACP ACS
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ATM 1.3 Alerting service (ALRS)

APS ATM 1.3.1	Provide ALRS.	4 4	ICAO Doc 4444 Regulation (EU) 2017/373, Regulation (EU) No 923/2012 <i>Optional content: national documents</i>	ALL
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Regulatory updated - Regulation (EU) 2017/373 -Transposed within GM1 ATS.TR.400(b);GM1 ATS.TR.405(a)(1);GM2 ATS.TR.300(c)(2).

APS ATM 1.3.2	Respond to distress and urgency messages and signals.	3 3	Regulation (EU) No 923/2012, ICAO Annex 10, ICAO Doc 4444 <i>Optional content: EUROCONTROL Guidelines for Controller Training in the Handling of Unusual/Emergency Situations, ICAO Doc 4444, national documents</i>	ALL
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Regulatory updated - Regulation (EU) 2017/373. The proposal to add ICAO Annex 12 not accepted - Annex 12 is about and for SAR service - there is almost nothing there about how ATC units providing alerting service should respond to distress and urgency messages and signals.

APS ATM 1.3.3	Use an ATS surveillance system in the provision of ALRS.	3 3		APS ACS
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ATM 1.4 ATS system capacity and air traffic flow management

APS ATM 1.4.1	Appreciate the impact of ATS system capacity and air traffic flow management on the controller.	3 3	<i>Optional content: EUROCONTROL ATFCM Users Manual, FABs, FUA, free route airspace, local implementation of ATFCM principles, etc.</i>	APP ACP APS ACS
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The proposal to reduce the action verb level - not accepted. "Appreciate" in most of the cases does not require simulation and APS environment is affected by ATFCM as well.

APS ATM 1.4.2	Take account of Apply flow management procedures in the provision of ATC.	2 2<3	<i>Optional content: EUROCONTROL ATFCM Users Manual</i>	APP APS
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The proposal to reduce the level of action verb accepted - and although the APP/APS environment may be affected by ATFCM this TF accepted that it is difficult to simulate.

APS ATM 1.4.3	Organise traffic flows and patterns to take account of airspace boundaries.	4 4	<i>Optional content: civil and military, controlled, uncontrolled, advisory, restricted, danger, prohibited, special rules, sector boundaries, national boundaries, FIR boundaries, delegated airspace, transfer of control, transfer of communications, en-route, off-route</i>	APP ACP APS ACS
APS ATM 1.4.4	Organise traffic flows and patterns to take account of areas of responsibility.	4 4	<i>Optional content: EUROCONTROL ATFCM Users Manual</i>	APP ACP APS ACS
APS ATM 1.4.5	Inform supervisor of local factors affecting ATS system capacity and air traffic flow management.	3 3	<i>Optional content: abnormal situations, decrease in sector capacity, limitations on systems and equipment, changes in workload/capacity, unusual meteorological conditions, relevant information like: reported ground-based incidents, forest fire, smoke, oil pollution</i>	APP ACP APS ACS
APS ATM 1.4.6	Organise traffic flows and patterns to take account of ATS surveillance system capability.	4 4		APS ACS

ATM 1.5 Airspace management (ASM)

APS ATM 1.5.1	Appreciate the impact of ASM on the controller.	3 3	<i>Optional content: FABs, EUROCONTROL Specification for the application of FUA, TSAs, CDRs, CBAs, free route airspace</i>	APP ACP APS ACS
APS ATM 1.5.2	Organise traffic to take account of ASM.	4 4	Real-time activation, deactivation or reallocation of airspace <i>Optional content: CDR, TSA, TRA, CBA</i>	APS ACS

ATM 2 COMMUNICATION

ATM 2.1 Effective communication

APS ATM 2.1.1	List communication means between controllers. in charge of the same area of responsibility (sector or tower).	1 1	<i>Optional content: electronic, written, verbal and non-verbal communication</i>	ALL
HUM 6.2.1 2.1.1				

The proposal of merging and moving some communication objectives to ATM subject accepted. Objective modified to widen the scope.

APS ATM	Select the most suitable means of communication given the situation.	5		ALL
2.1.2		5		
2.1.2				

Important practical objective introduced in ATM communications .

APS ATM	Use approved phraseology.	3	Regulation (EU) No 923/2012	ALL
2.1.3		3	Optional content: published national/local language phraseology	
2.1.1				

The proposal to add national references to optional content modified to "published national/local language phraseology" - to avoid the challenge for auditors in dealing with the national and EU/ICAO differences particularly in the practical part (safety risk due to different content)

APS ATM	Ensure effective communication.	4	Use of plain language when required, communication within the sector/working position, between the sectors/WPs /ATC Units	ALL
2.1.4		4	Communication techniques, readback/verification of readback	
2.1.2				

Improved content

APS ATM	Analyse examples of pilot and controller communication for effectiveness.	4	Optional content: real life recordings, situation in the simulator	ALL
2.1.5		4		
HUM 6.1.2				

Merging of communication objectives in the ATM and optional content added to clarify the requirement.

ATM 3 ATC CLEARANCES AND ATC INSTRUCTIONS

ATM	3.1	ATC clearances		
APS ATM	Issue appropriate ATC clearances.	3	Regulation (EU) No 923/2012	ALL
3.1.1		3	Optional content: ICAO Doc 4444, national documents	
APS ATM	Integrate appropriate ATC clearances in control service.	4		ALL
3.1.2		4		
APS ATM	Ensure the agreed course of action is carried out.	4		ALL
3.1.3		4		

ATM 3.2 ATC instructions				
APS ATM 3.2.1	Issue appropriate ATC instructions.	3 3	Regulation (EU) No 923/2012, ICAO Doc 4444 , Regulation (EU) 2017/373 <i>Optional content: national documents</i>	ALL
Regulatory updated - Regulation (EU) 2017/373				
APS ATM 3.2.2	Integrate appropriate ATC instructions in control service.	4 4		ALL
APS ATM 3.2.3	Ensure the agreed course of action is carried out.	4 4		ALL
ATM 4 COORDINATION				
ATM 4.1 Necessity for coordination				
APS ATM 4.1.1	Identify the need for coordination.	3 3		ALL
ATM 4.2 Tools and methods for coordination				
APS ATM 4.2.1	Use the available tools for coordination.	3 3	<i>Optional content: electronic transfer of flight data, telephone, interphone, intercom, direct speech, radiotelephone (RTF), local agreements, automated system coordination</i>	ALL
ATM 4.3 Coordination procedures				
APS ATM 4.3.1	Initiate appropriate coordination.	3 3	Delegation/transfer of responsibility for air-ground communications and separation, transfer of control, etc. ICAO Doc 4444 Regulation (EU) 2017/373 <i>Optional content: release point</i>	ALL
Regulatory updated - Regulation (EU) 2017/373 - Transposed within ATS.TR.230.a and associated AMCs/GMs				
APS ATM 4.3.2	Analyse effect of coordination requested by an adjacent position/unit.	4 4	<i>Optional content: delegation/transfer of responsibility for air-ground communications and separation, release point, transfer of control, etc.</i>	ALL

APS ATM 4.3.3	Select, after negotiation, an appropriate course of action.	5 5		ALL
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APS ATM 4.3.4	Ensure the agreed course of action is carried out.	4 4		ALL
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APS ATM 4.3.5	Coordinate when providing FIS.	4 4	ICAO Doc 4444 Regulation (EU) 2017/373 <i>Optional content: ICAO Doc 4444</i>	ALL
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Regulatory update - Regulation (EU) 2017/373 with ICAO content transposed in the AMCs and GM to Part.ATS. TR.230.a, though not all, and, therefore ICAO Doc 4444 moved to optional content.

APS ATM 4.3.6	Coordinate when providing ALRS.	4 4	ICAO Doc 4444 Regulation (EU) 2017/373 <i>Optional content: ICAO Doc 4444</i>	ALL
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Regulatory update - Regulation(EU) 2015/373 - transposition as GM2 ATS.TR.300(c).
The proposal to add ICAO Annex 12 to content - not accepted - there is almost nothing there about how ATC units providing alerting service should coordinate with others.

ATM 5 ALTIMETRY AND LEVEL ALLOCATION

ATM 5.1 Altimetry

APS ATM 5.1.1	Allocate levels according to altimetry data.	4 4	Regulation (EU) No 923/2012	ALL
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APS ATM 5.1.2	Ensure separation according to altimetry data.	4 4	<i>Optional content: transition level, transition altitude, transition layer, height, flight level, altitude, vertical distance to airspace boundaries</i>	ALL
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ATM 5.2 Terrain clearance

APS ATM 5.2.1	Provide planning, coordination and control actions appropriate to the rules for minimum safe usable levels and terrain clearance.	4 4	<i>Optional content: minimum vectoring altitude, terrain clearance dimensions, minimum safe altitudes, transition level, minimum flight level, minimum sector altitude</i>	APS ACS
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The proposal to soften the wording of the objective (usable instead of safe) accepted but removing the "terrain clearance" not.

ATM 6		SEPARATIONS		
ATM	6.1	Vertical separation		
APS ATM 6.1.1	Provide standard vertical separation.	4 4	Regulation (EU) No 923/2012, ICAO Doc 4444, level allocation, during climb/descent, rate of climb/descent, holding pattern	APP APS
APS ATM 6.1.2	Provide increased vertical separation.	4 4	Regulation (EU) No 923/2012, ICAO Doc 4444 <i>Optional content: level allocation, during climb/descent, rate of climb/descent, degraded aircraft performance, non-RVSM aircraft, reported severe turbulence</i>	APP ACP APS ACS
APS ATM 6.1.3	Appreciate the application of vertical emergency separation.	3 3	Regulation (EU) No 923/2012, ICAO Doc 4444, ICAO Doc 7030	APP ACP APS ACS
APS ATM 6.1.4	Provide vertical separation in a surveillance environment.	4 4	Pressure altitude-derived information, pilot level reports <i>Optional content: into/out of ATS surveillance system coverage</i>	APS ACS
ATM	6.2	Longitudinal separation in a surveillance environment		
APS ATM 6.2.1	Provide longitudinal separation in a surveillance environment.	4 4	Successive departures, successive arrivals, overflights, speed control, silent transfer, ICAO Doc 4444	APS
ATM	6.3	Delegation of separation		
APS ATM 6.3.1	Delegate separation to pilots in the case of aircraft executing successive visual approaches.	4 4		APP APS
APS ATM 6.3.2	Appreciate the conditions which must be met when delegating separation to pilots to fly maintaining own separation while in VMC.	3 3	Regulation (EU) 2017/373, ICAO Doc 4444	APP APS
Regulatory updated - Regulation (EU) 2017/373 - Transposed in ATS.TR.210(b) and associated AMCs + GM1 ATS.TR.210(b) and GM2 ATS.TR.210(b)				

ATM 6.4 Wake turbulence distance-based separation

APS ATM 6.4.1	Provide distance-based wake turbulence separation.	4 4	Regulation (EU) 2017/373 ICAO Doc 4444 , Regulation (EU) No 923/2012 <i>Optional content: EASA SIB 2017-10 'En-route Wake Turbulence Encounters', national documents</i>	APS ACS
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Regulatory updated - Regulation (EU) 2017/373
 Transposed within Annex IV 'Part-ATS' as ATS.TR.220. + associated AMCs and GMs.
 The proposal to add time-based separation to content not accepted as, generally, not applicable in APS/ACS environment.

ATM 6.5 Separation based on ATS surveillance systems

APS ATM 6.5.1	Describe how separation based on ATS surveillance systems is applied.	2 2	Regulation (EU) 2017/373 ICAO Doc 4444	APS ACS
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Regulatory update - Regulation (EU) 2017/373; Transposed in AMC1 ATS.TR.155(a).

APS ATM 6.5.2	Provide horizontal separation.	4 4	Regulation (EU) 2017/373 ICAO Doc 4444, ICAO Doc 7030, local operation manuals, holding , <i>Optional content: local/simulator operation manuals, holding</i>	APS ACS
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Regulatory updated - Regulation (EU) 2017/373 -Transposed in AMC1 ATS.TR.155(a). and AMC1 ATS.TR.210(c)(2); GM1 to AMC1 ATS.TR.210(c)(2) + modified content

APS ATM 6.5.3	Provide horizontal separation by vectoring in a variety of situations.	4 4	<i>Optional content: transit, meteorological phenomena, vectoring for approach, departure vs transit vs arrival</i>	APS ACS
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APS ATM 6.5.4	Ensure horizontal or vertical separation from airspace boundaries.	4 4	Adjacent sectors, restricted, prohibited and danger areas, TSAs.	APS ACS
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ATM 7 AIRBORNE ~~COLLISION AVOIDANCE SYSTEMS~~ AND GROUND-BASED SAFETY NETS

ATM 7.1 Airborne ~~safety nets~~ ~~collision avoidance systems~~

APS ATM 7.1.1	Recognise the independence of Differentiate between ACAS advisory thresholds and aerodrome ATC separation standards.	1 1<2	ICAO Doc 9863 <i>Optional content: Skybrary Safety Nets</i>	ALL
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Improved corpus and level reduced from 2 to 1, optional content and objective merged for all ratings.

APS ATM	Differentiate between ACAS advisory thresholds and separation standards applicable in the approach control environment.	2	ICAO Doc 9863	APP APS
7.1.1		2	Optional content: EUROCONTROL ACAS web page	
7.1.1 ALL R				

Objective reworded and merged for ALL ratings!

APS ATM	Describe the controller responsibility during and following an ACAS RA reported by pilot.	2	ICAO Doc 4444	ALL
7.1.2		2	Optional content: ICAO Doc 9863, Skybrary Safety Nets	

Updated optional content with the relevant ICAO reference document and SKYbrary

APS ATM	Respond to pilot notification of actions based on airborne systems warnings.	3	ACAS, TAWS	APP APS ACP ACS
7.1.3		3	Optional content: EUROCONTROL ACAS web page TAWS, Skybrary Safety Nets	

Updated content and redundant reference + Subtopic modified to 7.1 Airborne safety nets

ATM 7.2 Ground-based safety nets

APS ATM	Describe the controller responsibility during and following safety net warnings.	2	Regulation (EU) 2017/373 ICAO Doc 4444	APS ACS
7.2.1		2	Optional content: STCA, MSAW, APW, APM	

Regulatory updated - Regulation (EU) 2017/373 -Transposed in GM2 ATS.TR.155(c)(9) ATS

APS ATM	Respond to ground-based safety net warnings.	3	Optional content: STCA, MSAW, APW, APM	APS ACS
7.2.2		3		

The proposal to introduce the notion of "available" in this objective not accepted. This change would limit the scope if none of the safety-net warnings from the optional content is available. Aerodrome and APS/ACS environment are not comparable in this case.

ATM 8 DATA DISPLAY

ATM 8.1 Data management

APS ATM	Update the data display to accurately reflect the traffic situation.	3	Optional content: information displayed, strip marking procedures, electronic information data displays, actions based on traffic display information, calculation of EETs	ALL
8.1.1		3		

APS ATM	Analyse pertinent data on data displays.	4		ALL
8.1.2		4		

APS ATM 8.1.3	Organise pertinent data on data displays.	4 4		ALL
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APS ATM 8.1.4	Obtain flight plan information.	3 3	CPL, FPL , supplementary information <i>Optional content: FPL, RPL, AFIL, etc.</i>	ALL
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The proposal to delete this objective as being relevant only for pilots not accepted but mandatory content modified to reduce the scope only to CPL and supplementary information.

APS ATM 8.1.5	Use flight plan information.	3 3		ALL
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ATM 9 OPERATIONAL ENVIRONMENT (SIMULATED)

ATM 9.1 Integrity of the operational environment

APS ATM 9.1.1	Obtain information concerning the operational environment.	3 3	<i>Optional content: local/simulator operation manuals, briefing, notices, local orders, current flight plan data/information displays, pilot reports, coordination, verification of information</i>	ALL
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Improved optional content.

APS ATM 9.1.2	Ensure the integrity of the operational environment.	4 4	<i>Optional content: integrity of displays, verification of the information provided by displays, etc.</i>	APP ACP APS ACS
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ATM 9.2 Verification of the currency of operational procedures

APS ATM 9.2.1	Check all relevant documentation before managing traffic.	3 3	<i>Optional content: briefing, letters of agreement (LOAs), NOTAMs, AICs</i>	ALL
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APS ATM 9.2.2	Manage traffic in accordance with a change to operational procedures.	4 4		APP ACP APS ACS
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ATM 9.3 Handover-takeover

APS ATM 9.3.1	Transfer information to the relieving controller.	3 3		ALL
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APS ATM 9.3.2	Obtain information from the controller handing over.	3 3		ALL
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APS ATM	List possible actions to provide a safe	1	<i>Optional content: rigour, preparation, overlap time</i>	ALL
9.3.3	position handover-takeover.	1		

HUM 6.2.3

ATM 9.3.3

Relocation of handover-takeover objective from HUM to the appropriate ATM subtopic.

APS ATM	Explain consequences of a missed position	2		ALL
9.3.4	handover-takeover process.	2		

HUM 6.2.4

ATM 9.3.4

Relocation of handover-takeover objective from HUM to the appropriate ATM subtopic

ATM 10 PROVISION OF CONTROL SERVICE

ATM 10.1 Responsibility and processing of information

APS ATM	Describe the division of responsibility	2	ICAO Doc 4444 , Regulation (EU) 2017/373	ALL
10.1.1	among air traffic control units.	2		

Optional content: ICAO Doc 4444

Regulatory update - Regulation (EU) 2017/373 - Transposed in AMC1 ATS.TR.205.;ATS.TR.230(a);GM1 ATS.TR.230(a)(3); GM1 to AMC3 ATS.TR.230(b)(2), though not all, and, therefore ICAO Doc 4444 moved to optional content.

APS ATM	Describe the responsibility in regard to	2	ICAO Doc 4444	ALL
10.1.2	military traffic.	2		

Optional content: ICAO Doc 9554

APS ATM	Describe the responsibility in regard to	2	Regulation (EU) No 923/2012	ALL
10.1.3	unmanned free balloons.	2		

APS ATM	Obtain operational information:	3	ICAO Doc 4444, local operation manuals	APP ACP APS ACS
10.1.4		3		

Objective deleted - already covered in 9.1.1 (Obtain information concerning the operational environment.)

APS ATM	Interpret operational information.	5		APP ACP APS ACS
10.1.4		5		

10.1.5

10.1.4

APS ATM	Organise forwarding of operational	4	<i>Optional content: including the use of backup procedures</i>	APP ACP APS ACS
10.1.5	information.	4		

10.1.6

APS ATM	Integrate operational information into control decisions.	4	
10.1.6		4	
10.1.7			

APP
ACP
APS
ACS

APS ATM	Appreciate the influence of operational requirements.	3	<i>Optional content: military flying, calibration flights, aerial photography</i>	ALL
10.1.7		3		
10.1.8				
10.1.7				

ATM 10.2 ATS surveillance service

APS ATM	Explain the responsibility for the provision of an ATS surveillance service appropriate to APS rating.	2	ICAO Doc 4444, Regulation (EU) No 923/2012, Regulation (EU) 2017/373 ICAO Annex 11, local operation manuals <i>Optional content: local/simulator operation manuals</i>	APS
10.2.1		2		

Regulatory updated - Regulation (EU) 2017/373 - Transposed in Annex IV 'Part-ATS' as ATS.TR.155 and many associated AMC's and GM related to provision of ATS surveillance service. Doc 4444, though, kept as required training since the content is nicely grouped there rather than using the reference to Requirements for the ATS surveillance systems established in **Regulation 1207/2011**. This Regulation is 'laying down requirements for the performance and the interoperability of surveillance for the single European sky which is too "technical". The local/simulator operation manual added to optional content and should be generally applied to similar objectives. The proposal to modify the "ATS surveillance service" not accepted - the term well defined both by ICAO and EU.

APS ATM	Explain the functions that may be performed with the use of ATS surveillance system derived information presented on a situation display.	2	ICAO Doc 4444 , Regulation (EU) 2017/373	APS ACS
10.2.2		2		

Regulatory update - Regulation (EU) 2017/373 - transposed as AMC1 ATS.TR.155(a) ATS surveillance services

APS ATM	Provide planning, coordination and control actions appropriate to VFR, SVFR and IFR traffic in VMC and IMC.	4	Regulation (EU) No 923/2012, Regulation (EU) 2017/373, ICAO Doc 4444	APS APP
10.2.3		4		

APS ATM	Apply the procedures for termination of ATS surveillance service.	3	ICAO Doc 4444 , Regulation (EU) 2017/373 <i>Optional content: ICAO Doc 4444, transfer of control, termination or interruption of ATS surveillance service</i>	APS ACS
10.2.4		3		

Regulatory update - Regulation (EU) 2017/373 - Transposed as AMC1 ATS.TR.155(c)(10); GM1 ATS.TR.210 (d). though important Note about transfers between various surveillance sources was not, and, therefore ICAO Doc 4444 moved to optional content.

ATM	10.3	Traffic management process			
APS ATM 10.3.1	Ensure that situational awareness is maintained.	4	4	Information gathering, scanning, traffic projection	APS ACS
APS ATM 10.3.2	Detect conflicts in time for appropriate resolution.	4	4		ALL
APS ATM 10.3.3	Identify potential solutions to achieve a safe and effective traffic flow.	3	3		APP ACP APS ACS
APS ATM 10.3.4	Evaluate possible outcomes of different planning and control actions.	5	5		ALL
APS ATM 10.3.5	Select an appropriate plan in time to achieve safe and effective traffic flow.	5	5		APP ACP APS ACS
APS ATM 10.3.6	Ensure an adequate priority of actions.	4	4		ALL
APS ATM 10.3.7	Execute selected plan in a timely manner.	3	3		ALL
APS ATM 10.3.8	Ensure a safe and efficient outcome is achieved.	4	4	Traffic monitoring, adaptability and follow up	ALL

ATM	10.4	Handling traffic			
APS ATM 10.4.1	Manage arrivals, departures and overflights.	4	4	<i>Optional content: simulator operation procedures</i>	APP ACP APS ACS
The proposal to add "simulator operation procedures" to optional content accepted.					
APS ATM 10.4.2	Balance the workload against personal capacity.	5	5	<i>Optional content: re-routing, re-planning, prioritising solutions, denying requests, delegating responsibility for separation</i>	APP ACP APS ACS
APS ATM 10.4.3	Define flight path monitoring and vectoring.	1	1	ICAO Doc 4444 , Regulation (EU) 2017/373	APS ACS
Regulatory update - Regulation (EU) 2017/373 transposed within GM1 to Annex IV 'Part-ATS' (monitoring) and Annex 1 Part Definitions (vectoring)					

APS ATM 10.4.4	Explain the requirements for vectoring and termination of vectoring.	2 2	ICAO Doc 4444, Regulation (EU) 2017/373	APS ACS
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Regulatory updated -ICAO Doc 4444 transposed in Regulation (EU) 2017/373 - Annex IV 'Part-ATS' in AMC's ATS.TR.255., AMC1 ATS.TR.155(c)(3) but Doc 4444 kept as not all provisions had been transposed.

APS ATM 10.4.5	Provide vectoring.	4 4	ICAO Doc 4444 , Regulation (EU) No 923/2012, Regulation (EU) 2017/373 <i>Optional content: separation, expediting arrivals, departures and/or climb to cruising levels, aircraft leaving the hold, navigation assistance, uncontrolled airspace, etc.</i>	APS ACS
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Regulatory update - Regulation (EU) 2017/373 transposed in AMC1 ATS.TR.155(a). and ATS.TR.235(a)(5) and GM1 ATS.TR.235(a)(5)

APS ATM 10.4.6	Apply the procedures for termination of vectoring.	3 3	ICAO Doc 4444 , Regulation (EU) No 923/2012, Regulation (EU) 2017/373	APS ACS
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Regulatory update - Regulation (EU) 2017/373 - Transposed in AMC's ATS.TR.255., AMC1 ATS.TR.155(c)(3).

APS ATM 10.4.7	Manage traffic on different types of approaches.	4 4	Precision, non-precision, visual	APP APS
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The proposal to use explicit PBN separation methods/minima as part of ATM subject or in the simulated APS environment rejected - ACCCT TF was of opinion that we should wait until PBN implementation is well established in Europe before introducing it in the Initial training. Initial implementation of the PBN is foreseen for Unit training environment.

APS ATM 10.4.8	Initiate missed approach.	3 3	ICAO Doc 4444 , Regulation (EU) No 923/2012, Regulation (EU) 2017/373 <i>Optional content: Skybrary</i>	APP APS
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Regulatory updated - Regulation (EU) 2017/373; Transposed in AMC's ATS.TR.255., AMC1 ATS.TR.155(c)(3).

APS ATM 10.4.9	Integrate aircraft on missed approach into the traffic situation.	4 4		APP APS
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ATM 10.5 Control service with advanced system support

APS ATM 10.5.1	Appreciate the impact of advanced systems on the provision of approach control service.	3 3	<i>Optional content: sequencing systems, arrival management, departure management, automated holding lists, vertical traffic displays, conflict detection and decision making tools, automated information and coordination tools</i>	APS
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ATM 11 HOLDING

ATM 11.1 General holding procedures

APS ATM 11.1.1	Apply holding procedures.	3 3	ICAO Doc 4444, Regulation (EU) No 923/2012, Regulation (EU) 2017/373 , holding instructions, allocation of holding levels, onward clearance times	APP ACP APS ACS
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Regulatory updated - Regulation (EU) 2017/373 - Transposed in Annex IV 'Part-ATS' as AMC4 ATS.TR.210 (a)(3) related to holding but Doc 4444 kept as not all provisions from Chapter 6.5.5 had been transposed.

APS ATM 11.1.2	Appreciate the factors affecting holding patterns.	3 3	Effect of speed, effect of level used, effect of navigation aid in use, turbulence, aircraft type	APP ACP APS ACS
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ATM 11.2 Approaching aircraft

APS ATM 11.2.1	Issue Expected Approach Times (EATs).	3 3		APP APS
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APS ATM 11.2.2	Organise the traffic landing sequence in a holding pattern.	4 4	<i>Optional content: company preference, aircraft performance, aircraft approach capability, ILS categories, flow control management</i>	APP APS
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ATM 11.3 Holding in a surveillance environment

APS ATM 11.3.1	Organise traffic to separate other aircraft from holding aircraft.	4 4		APS ACS
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APS ATM 11.3.2	Integrate system support, when available.	4 4	<i>Optional content: arrival management system, automated holding lists, vertical traffic displays</i>	APS ACS
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ATM 12 IDENTIFICATION

ATM 12.1 Establishment of identification

APS ATM 12.1.1	Appreciate the precautions when establishing identification.	3 3		APS ACS
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APS ATM 12.1.2	Identify aircraft.	3 3	<i>Optional content: PSR, SSR or ADS identification method</i>	APS ACS
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The proposal to include all identification methods in the mandatory content not accepted - to demanding for practical rating training.

APS ATM 12.1.3	Apply procedures in the case of misidentification.	3 3	ICAO Doc 4444, Regulation (EU) 2017/373 <i>Optional content: local/simulator operation manuals</i>	APS ACS
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The proposal to support the application of the objective by adding some content accepted - No explicit misidentification procedure available in the ICAO docs or EU regulations but could be developed based on the available content. Suggestion that use of Mode S makes the application of this objective unnecessary not accepted. Regardless of current Mode S implementation in the OPS environment and as long as we have the other identification methods in Initial training some form of error in identification (misidentification) needs to be covered as well.

ATM 12.2 Maintenance of identification

APS ATM 12.2.1	Appreciate the necessity to maintain identification.	3 3		APS ACS
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ATM 12.3 Loss of identity

APS ATM 12.3.1	Appreciate when an aircraft identification is lost or in doubt.	3 3	<i>Optional content: out of ATS surveillance system coverage, failure of ATS surveillance system, weather clutter, other clutter, garbling, holding, etc.</i>	APS ACS
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APS ATM 12.3.2	Apply methods to re-establish identification.	3 3		APS ACS
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APS ATM 12.3.3	Respond to loss/doubt concerning identification.	3 3	<i>Optional content: procedural separation</i>	APS ACS
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ATM 12.4 Position Information

APS ATM 12.4.1	Appreciate the circumstances when position information should be passed to the aircraft.	3 3		APS ACS
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APS ATM 12.4.2	State the format in which position information can be passed to aircraft.	1 1	ICAO Doc 4444 , Regulation (EU) 2017/373	APS ACS
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Regulatory updated - Regulation (EU) 2017/373 - Transposed in AMC1 ATS.TR.155(c)(2)

ATM 12.5 Transfer of identity

APS ATM 12.5.1	Apply the methods of transfer of identification.	3 3		APS ACS
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The proposal to modify the wording (removing "the") accepted. The original wording imposes the training of all methods of transfer of identification.

APS ATM Appreciate the precautions when
12.5.2 transferring identification.

3
3

APS
ACS

The proposal to change and reduce the level of action verb not accepted. "Appreciate" does not, necessarily, require simulation (explained in the action verb list in AMC1 ATCO.D.010(a) Composition of initial training.

Subject 4 : METEOROLOGY

The subject objective is:

~~Learners shall acquire, decode and make proper use of meteorological information relevant to the provision of ATS.~~

MET 1		METEOROLOGICAL PHENOMENA		
MET	1.1	Meteorological phenomena		
APS MET 1.1.1	Appreciate the impact of adverse weather.	3 3	Thunderstorms, icing, clear air turbulence (CAT), turbulence, microburst, wind shear, severe mountain waves, squall lines, volcanic ash	APP APS
APS MET 1.1.2	Integrate data about meteorological phenomena into provision of ATS.	4 4	Clearances, instructions and transmitted information <i>Optional content: relevant meteorological phenomena</i>	ALL
APS MET 1.1.3	Use techniques to avoid adverse weather when necessary/possible.	3 3	Re-routing, level change, etc.	APP ACP APS ACS
MET 2		SOURCES OF METEOROLOGICAL DATA		
MET	2.1	Sources of meteorological information		
APS MET 2.1.1	Obtain meteorological information.	3 3	METAR, TAF, SIGMET, AIRMET <i>Optional content: AIREP/AIREP Special</i>	APP ACP APS ACS
The proposal to make the optional content mandatory not accepted as current mandatory content is enough for practical application in Initial training.				
APS MET 2.1.2	Decode information from meteorological data displays.	3 3		ALL
The proposal to move METB objective related to decoding of weather reports and forecasts to all ratings modified by making similar ADC objective common for al ratings for consistency.				
APS MET 2.1.3	Relay meteorological information.	3 3	ICAO Doc 4444, Regulation (EU) No 923/2012 <i>Optional content: flight information centre, adjacent ATS unit</i>	ALL

Subject 5 : NAVIGATION

The subject objective is:

~~Learners shall analyse all navigational aspects in order to organise the traffic.~~

NAV 1 MAPS AND AERONAUTICAL CHARTS					
NAV	1.1	Maps and charts			
APS NAV 1.1.1	Decode symbols and information displayed on aeronautical maps and charts.	3 3	Instrument approach charts, SID & STAR charts, aerodrome charts <i>Optional content: visual approach charts, military maps and chart</i>	APP APS	
APS NAV 1.1.2	Use relevant maps and charts.	3 3		ALL	
<div style="border: 1px solid black; padding: 5px;"> <p>The proposal to move this objective to ATM not accepted - The location of the practical objectives in the Rating training is almost irrelevant. They all need to be covered and are dependent on the prerequisites (relation with other subjects/topics...). Therefore most of them are covered in the simulator and linked with the major subject - ATM, anyway.</p> </div>					
NAV 2 INSTRUMENT NAVIGATION					
NAV	2.1	Navigational systems			
APS NAV 2.1.1	Manage traffic in case of change in the operational status of navigational systems.	4 4	<i>Optional content: limitations, availability and status of ground-based and satellite-based systems</i>	APP ACP APS ACS	
APS NAV 2.1.2	Appreciate the effect of a change in the operational status of navigational systems.	3 3	<i>Optional content: precision, limitations, status, degraded procedures</i>	ALL	
NAV	2.2	Stabilised approach			
APS NAV 2.2.1	Describe the concept of stabilised approach.	2 2	<i>Optional content: Skybrary</i>	ADC APP APS	
<div style="border: 1px solid black; padding: 5px;"> <p>The proposal to move this objective to ACFT not accepted - The location of the objectives in the Rating training is almost irrelevant. They all need to be covered and are dependent on the prerequisites (relation with other subjects/topics...). Therefore most of them are related to or covered in the SIM and linked with the major subject - ATM, anyway.</p> </div>					
APS NAV 2.2.2	Appreciate the effect of late change of runway-in-use or type of approach for landing aircraft.	3 3	Cockpit workload <i>Optional content: Impact on vertical profile (CDO), FMS management, crew procedure briefing, missed approach, loss of situational awareness, etc</i>	APP APS	

APS NAV 2.2.3	Appreciate controller actions that may contribute to an unstabilised approach.	3 3	Inappropriate speed control, vectoring for short final, vectoring for approach with significant tailwind, glide path interception from above, lack or incorrect distance to touchdown information, delayed descent, incorrect use of 'Direct To'	APS
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NAV 2.3 Instrument departures and arrivals

APS NAV 2.3.1	Describe relevant SIDs and STARs.	2 2		APP APS
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The proposal to introduce optional content for ATCOs to understand that direct to and/or explicit speed instructions can affect Radius to Fix performance not accepted as already covered in the Basic training (NAVB 6.1.4) and newly introduced NAV 2.3.3

APS NAV 2.3.2	Describe the types and phases of instrument approach procedures.	2 2	Regulation (EU) 2017/373, ICAO Annex 6	ADC APP APS
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The proposal to add relevant documents to content accepted.

APS NAV 2.3.3	Describe the relevant minima applicable for a precision/ non-precision and visual approach.	2 2	Optional content: Type A/B operations, CAT I/II/III criteria, LNAV, LNAV/VNAV, LPV, RNP AR APCH minima	ADC APP APS
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NAV 2.4 Navigational assistance

APS NAV 2.4.1	Evaluate the necessary information to be provided to pilots in need of navigational assistance.	5 5	Optional content: nearest most suitable aerodrome, track, heading, distance, aerodrome information, any other navigational assistance relevant at the time	APP ACP APP APS ACS
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APS NAV 2.4.2	Assist pilots with navigation when required.	3 3	Aircraft observed to be deviating from its known intended route, on pilot's request	APS ACS
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NAV 2.5 Satellite-based systems

APS NAV 2.5.1	State the different applications of satellite-based systems relevant for approach operations.	1 1	RNP APCH, RNP AR APCH, SBAS, GBAS Optional content: LNAV, LNAV/VNAV, LPV, RNP minima, precision approach	APP APS
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NAV	2.6	PBN applications		
APS NAV 2.6.1	State the navigation applications used in approach and terminal environments.	1 1	<p>Approach-RNP APCH/ RNP AR APCH; Terminal-RNAV-1, RNP 1 with RF; rotorcraft option RNP 0.3</p> <p><i>Optional content: Regulation (EU) 716/2014, Regulation (EU) 2018/1048, ICAO Doc 9613</i></p>	APP APS
APS NAV 2.6.2	Explain the principles and designation of navigation specifications in use.	2 2	<p>Performance, functionalities, sensors</p> <p><i>Optional content: aircrew and controller requirements, accuracy requirements, integrity and continuity</i></p>	APP ACP APS ACS
APS NAV 2.6.3	Describe differences in turn performances.	2 2	<p><i>Optional content: fly by, fly over, RF, ICAO Doc 4444</i></p>	APP APS
<p>Important for ATCOs to understand that "direct to" and/or explicit speed instructions can affect Radius to Fix performance and to highlight turn performance and the variability in aircraft path around a turn - see ICAO Doc 4444 Chapter 5 Para 5.4.1.1.4 Note 2</p>				
APS NAV 2.6.4	State future PBN developments.	1 1	<p>A-RNP, RNP (AR) DEP</p> <p><i>Optional content: RNP 3D, VNAV, 4D, TBO</i></p>	ALL APP APS
2.6.3				
2.6.4				

Subject 6 : AIRCRAFT

The subject objective is:

~~Learners shall assess and integrate aircraft performance in the provision of ATS:~~

ACFT 1		AIRCRAFT INSTRUMENTS		
ACFT	1.1	Aircraft instruments		
APS ACFT	1.1.1	Integrate information from aircraft instruments provided by the pilot in the provision of ATS.	4 4	ALL
<p>The proposal to make some content mandatory not accepted - making some examples explicit and mandatory could be too demanding for both the students and TOs but also limit the implementation to listed mandatory content only.</p>				
APS ACFT	1.1.2	Explain the operation of aircraft radio equipment.	2 2	Optional content: radios (number of), emergency radios ALL
APS ACFT	1.1.3	Explain the operation of on-board surveillance equipment.	2 2	Transponders: equipment Mode A, Mode C, Mode S, ADS capability ADC APS ACS
ACFT 2		AIRCRAFT CATEGORIES		
ACFT	2.1	Wake turbulence		
APS ACFT	2.1.1	Explain the wake turbulence effect and associated hazards to the succeeding aircraft.	2 2	ALL
APS ACFT	2.1.2	Appreciate the techniques used to prevent hazards associated with wake turbulence on succeeding aircraft.	3 3	ALL
ACFT	2.2	Application of ICAO approach categories		
APS ACFT	2.2.1	Describe the use of ICAO approach categories.	2 2	ICAO Doc 8168 ADC APP APS
APS ACFT	2.2.2	Appreciate the effect of ICAO approach categories on the traffic organisation.	3 3	ADC APP APS

ACFT 3 FACTORS AFFECTING AIRCRAFT PERFORMANCE

ACFT 3.1 Climb factors

APS ACFT 3.1.1	Integrate the influence of factors affecting aircraft during climb.	4 4	<i>Optional content: speed, mass, air density, cabin pressurisation, wind and temperature</i>	APP ACP APS ACS
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APS ACFT 3.1.2	Describe the influence of factors affecting departing aircraft.	2 2	<i>Optional content: runway conditions, runway slope, aerodrome elevation, wind, temperature, aircraft configuration, airframe contamination and aircraft mass</i>	APP APS
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ACFT 3.2 Cruise factors

APS ACFT 3.2.1	Integrate the influence of factors affecting aircraft during cruise.	4 4	<i>Optional content: Level, cruising speed, wind, mass, cabin pressurisation</i>	APP APS
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The proposal to delete this subtopic and associated objective for APP/APS not accepted - cruising factor is relevant in some Member States' approach environments.

ACFT 3.3 Descent and initial approach factors

APS ACFT 3.3.1	Integrate the influence of factors affecting aircraft during descent.	4 4	<i>Optional content: wind, speed, rate of descent, aircraft configuration, cabin pressurisation</i>	APP APS
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ACFT 3.4 Final approach and landing factors

APS ACFT 3.4.1	Integrate the influence of factors affecting aircraft during final approach and landing.	4 4	<i>Optional content: wind, aircraft configuration, mass, meteorological conditions, runway conditions, runway slope, aerodrome elevation</i>	APP APS
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ACFT 3.5 Economic factors

APS ACFT 3.5.1	Integrate consideration of economic factors affecting aircraft.	4 4	<i>Optional content: routing, level, speed, rate of climb and rate of descent, approach profile</i>	APP APS
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APS ACFT 3.5.2	Provide continuous climb/descent whenever possible.	4 4		APS ACS
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APS ACFT 3.5.3	Use direct routing where applicable.	3 3		APS APP
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APS ACFT 3.5.4	Appreciate controller's actions that may contribute to pilot's ability to fly an optimum continuous descent.	3 3	<i>Optional content: level instructions, speed control, vertical speed control, vectoring, distance to touch down information</i>	APS ACS
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ACFT 3.6 Environmental factors

APS ACFT 3.6.1 Appreciate the performance restrictions due to environmental considerations. 3 3 *Optional content: fuel dumping, noise abatement procedures, minimum flight levels, bird hazard, continuous descent operations* APP
APS

ACFT 4 AIRCRAFT DATA

ACFT 4.1 Performance data

APS ACFT 4.1.1 Integrate the average performance data of a representative sample of aircraft which will be encountered in the operational/working environment into the provision of a control service. 4 4 Performance data under a representative variety of circumstances APP
ACP
APS
ACS

Subject 7 : HUMAN FACTORS

The subject objective is:

Learners shall recognise the necessity to constantly extend their knowledge and analyse factors which affect personal and team performance.

HUM 1		INFORMATION PROCESSING PSYCHOLOGICAL FACTORS		
HUM 1.1		Cognitive and factors influencing it		
APS HUM 1.1.1	Describe the human information processing model.	2	Attention, perception, memory, situational awareness, decision-making, response	ALL
APS HUM 1.1.2	Describe the factors which influence human information processing.	2	Confidence, stress, learning, knowledge, experience, fatigue, alcohol/drugs, distraction, interpersonal relations	ALL
HUM 1.2		Situational awareness		
APS HUM 1.2.1	Appreciate the effect of human information-processing factors on situational awareness.	3	Optional content: workload, knowledge, interpersonal relations, distraction, confidence, experience, fatigue, stress	ALL
<div style="border: 1px solid black; padding: 5px;"> New subtopic "Situational awareness" and associated objective to stress the importance of situational awareness and in the right order (Cognitive->SA->DM) </div>				
HUM 1.3		Decision-making		
APS HUM 1.3.1	Appreciate Monitor the effect of human information processing factors on decision-making.	3	Optional content: workload, stress, interpersonal relations, distraction, confidence	ALL
1.1.3				
1.3.1				
<div style="border: 1px solid black; padding: 5px;"> New subtopic "Decision-making" and more appropriate action verb for associated objective to stress the importance of decision-making and in the right order (Cognitive->SA->DM) </div>				
HUM 2		MEDICAL AND PHYSIOLOGICAL FACTORS AFFECTING HEALTH AND WELL-BEING		
HUM 2.1		Fatigue		
APS HUM 2.1.1	State factors that cause fatigue:	1	Shift work	ALL
2.1.1		4	Optional content: night shifts and rosters, Regulation (EU) 2017/373, ICAO/IFATCA/CANSO's Fatigue Management Guide for Air Traffic Service Providers	
<div style="border: 1px solid black; padding: 5px;"> The proposal to delete this objective accepted - Well covered at level 2 in Basic HUMB 2.2.4 Explain the causal factors of stress and fatigue. </div>				

APS HUM	Describe the onset of fatigue.	2	Regulation (EU) 2017/373	ALL
2.1.1		2	<i>Optional content: lack of concentration, listlessness, irritability, frustration, Skybrary Human Behaviour: EUROCONTROL Fatigue and sleep management ICAO Circular 241 – AN/145 Human factors in Air Traffic Control</i>	
2.1.2				

Improved content and renumbering: Eurocontrol booklet better for IT while CANSO/ICAO guide is more for unit training

APS HUM	Recognise the onset of fatigue in self and in others.	1	<i>Optional content: ICAO/FATCA/CANSO's Fatigue Management Guide for Air Traffic Service Providers Skybrary Human Behaviour:EUROCONTROL Fatigue and sleep management</i>	ALL
2.1.2		1		
2.1.3				

Merged objectives related to recognition of the onset of fatigue in self and in others.

APS HUM	Describe appropriate action when recognising fatigue.	2	<i>Optional content: Skybrary Human Behaviour, EUROCONTROL Fatigue and sleep management</i>	ALL
2.1.3		2		
2.1.5				

Improved content and renumbering: skybrari and Eurocontrol booklet added to optional content.

APS HUM	Recognise the onset of fatigue in others:	1		ALL
2.1.4		1		
2.1.4				
2.1.2				

The proposal to delete/merge this objective with 2.1.2 above accepted.

HUM 2.2 Fitness

APS HUM	Recognise signs of lack of personal fitness:	1		ALL
2.2.1		1		
HUM 2.2.1				
HUMB 2.1.3				

The proposal to move this objective to Basic training accepted. Now moved and well covered in the Basic subtopic "Fitness for duty" lack of personal fitness.

APS HUM	Describe actions when aware of a lack of personal fitness:	2		ALL
2.2.2		2		
2.2.2				
HUMB 2.1.4				

The proposal to delete this objective accepted - now well covered in the new Basic topic 2 HEALTH AND WELL-BEING

HUM	2.2	Stress				
APS HUM	2.2.1	Recognise the effects of stress on performance.	1	1	Stress and its symptoms in self and in others <i>Optional content: Regulation (EU) 2017/373</i>	ALL
	4.1.1					
	2.2.1					
The proposal to move this stress related subtopic and associated objective to new (this) location accepted.						
APS HUM	2.2.2	Describe appropriate action when recognising stress.	2	2		ALL
	2.2.2					
The proposal to introduce new stress objective for consistency with the similar "fatigue" objective accepted.						
APS HUM	2.2.3	Act to reduce stress.	3	3	The effect of personality in coping with stress, the benefits of active stress management	ALL
	4.2.1					
	2.2.3					
The proposal to delete the content that limits the implementation of the objective accepted but another to introduce the Regulation (EU) 2017/373 in the content was not as provisions of this Regulation are more about ATS providers responsibilities with respect to stress. The whole topic and associated objectives are more related to the learners and how they should cope with it.						
APS HUM	2.2.4	Respond to stressful situation by offering, asking or accepting assistance.	3	3	Optional content: the benefits of offering, accepting and asking for help in stressful situations	ALL
	4.2.2					
	2.2.4					
The proposal to delete the content that was the same as objective's corpus accepted						
APS HUM	2.2.5	Recognise the effect of shocking and stressful events.	1	1	Self and others, abnormal situations, Critical Incident Stress Management (CISM)	ALL
	4.2.3					
	2.2.5					
Improved wording both for the objective and the content: CISM removed from mandatory content - more applicable in the Unit and/or Continuation training.						

HUM 3 THREAT AND ERROR MANAGEMENT

HUM 3.1 Threat and error management framework

APS HUM 3.1.1	Explain the importance of threat and error management.	2 2	<i>Optional content: prevention of incidents, safety improvement, revision of procedures and/or working practices</i>	ALL
5.1.7				
3.1.1				

The proposal to introduce New TEM topic/subtopic and associated objective accepted. TEM was missing in the Initial training and is required by ICAO Annex 1.

APS HUM 3.1.2	Explain the threat and error management framework.	2 2	Threats, errors, undesired states, countermeasures	ALL
			<i>Optional content: ICAO Circular 314 — AN/178 Threat and Error Management (TEM) in Air Traffic Control</i>	

As above...

APS HUM 3.1.3	Differentiate threats in ATC.	2 2	Internal, external, airborne, environmental	ALL
			<i>Optional content: ICAO Circular 314 — AN/178 Threat and Error Management (TEM) in Air Traffic Control</i>	

As above...

APS HUM 3.1.4	Differentiate errors in ATC.	2 2	Equipment, procedural, communication	ALL
			<i>Optional content: increase in traffic, changes in procedures, complexities of systems or traffic, weather, unusual occurrences</i>	

As above...

APS HUM 3.1.5	Differentiate undesired states.	2 2	On the ground, airborne	ALL
			<i>Optional content: ICAO Circular 314 — AN/178 Threat and Error Management (TEM) in Air Traffic Control</i>	

As above...

APS HUM 3.1.6	Analyse examples of threat and error management in ATC.	4	Case studies	ALL
		4	<i>Optional content: ICAO Circular 314 — AN/178 Threat and Error Management (TEM) in Air Traffic Control</i>	

As above...

HUM 3.2 Applied threat and error management

APS HUM 3.2.1	Manage threats.	4	Detect and respond	ALL
		4	<i>Optional content: ICAO Circular 314 — AN/178 Threat and Error Management (TEM) in Air Traffic Control</i>	

The proposal to move this objective to more appropriate new subtopic on conflict management accepted.

APS HUM 3.2.2	Manage errors.	4	Detect and respond	ALL
		4	<i>Optional content: ICAO Circular 314 — AN/178 Threat and Error Management (TEM) in Air Traffic Control</i>	

As above...

APS HUM 3.2.3	Manage undesired states.	4	Detect and respond	ALL
		4	<i>Optional content: ICAO Circular 314 — AN/178 Threat and Error Management (TEM) in Air Traffic Control</i>	

As above...

HUM 3 ~~SOCIAL AND ORGANISATIONAL FACTORS~~

HUM 3.1 Team resource management (TRM)

APS HUM 3.1.1	State the relevance of TRM:	1	<i>Optional content: TRM course; EUROCONTROL Guidelines for the development of TRM training</i>	ALL
		4		

HUM 3.1.1

HUMUC

The proposal to move the introduction to TRM to later stages of ATCO training (Unit-Continuation) accepted. It will be easier for students to understand it in the operational environment and this topic is explicitly mentioned in AMC1 ATCO.D.045(c)(4) Composition of unit training and AMC1 ATCO.D.080(b)(3) Refresher training.

APS HUM 3.1.2 3.1.2 HUMUC	State the content of the TRM concept:	1 4	<i>Optional content: team work, human error, team roles, stress, decision making, communication, situational awareness</i>	ALL
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The proposal to move the introduction to TRM to later stages of ATCO training (Unit-Continuation) accepted. It will be easier for students to understand it in the operational environment and this topic is explicitly mentioned in AMC1 ATCO.D.045(c)(4) Composition of unit training and AMC1 ATCO.D.080(b)(3) Refresher training.

HUM 3.2 Teamwork and team roles

APS HUM 3.2.1 3.2.1 4.2.1	Identify reasons for conflict:	3 3		ALL
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The proposal to move this objective to more appropriate new subtopic on conflict management accepted.

HUM 3.3 Responsible behaviour

APS HUM 3.3.1 3.3.1 HUMB 3.2.2	Consider the factors which influence responsible behaviour:	2 2	<i>Optional content: situation, team, personal situation and judgement, instance of justification, moral motivation, personality</i>	ALL
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Moved from Rating to Basic – more appropriate for Basic training and Topic on Human performance

APS HUM 3.3.2	Apply responsible judgement:	3 3	<i>Case study and discussion about a dilemma situation</i>	ALL
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The proposal to delete this unclear objective accepted.

HUM 4 TEAMWORK-STRESS

HUM 4.1 Benefits of a teamwork Stress

APS HUM 4.1.1	State the benefits of teamwork.	1 1	Increased safety, efficiency and capacity	ALL
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The proposal to introduce new objective to start with some positive aspect/benefits of team work accepted.

APS HUM 4.1.2	List the ATCO's human performance elements affected by teamwork.	1 1	Situational awareness, communication, decision making, threat and error management, workload management	ALL
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The proposal to introduce new objective to start with some positive aspect/benefits of teamwork accepted.

HUM 4.2 Conflict Stress management

APS HUM	Identify reasons for conflict.	3		ALL
4.2.1		3		
3.2.1				

Proposal to move this objective to more appropriate new subtopic on conflict management accepted.

APS HUM	Describe strategies to cope with human	2	<i>Optional content: in your team, in the</i>	ALL
4.2.2	conflicts.	2	<i>simulator</i>	
3.2.3				

The proposal to move this conflict related objective to new subtopic "4.2 Conflict management" accepted.

APS HUM	Describe actions to prevent human conflicts.	2	<i>Optional content: TRM team roles</i>	ALL
4.2.3		2		
3.2.2				

The proposal to remove optional content accepted - no need for TRM related content here.

APS HUM	Consider the benefits of Critical Incident	2		ALL
4.2.4	Stress Management (CISM):	2		
HUM 4.2.4				
HUMUC				

The proposal to move the CISM objective to later stages of ATCO training (Unit-Continuation) accepted. It will be easier for students to understand this safety related concept in the operational environment.

APS HUM	Explain procedures used following an	2	<i>Optional content: CISM, counselling;</i>	ALL
4.2.5	incident/accident.	2	<i>human element</i>	
4.2.5				
HUMUC				

The proposal to move this incident/accident objective to later stages of ATCO training (Unit-Continuation) accepted. It will be easier for students to understand this safety related procedure in the operational environment.

HUM 5 SYSTEMS

HUM 5.1 Concept of systems in ATM/ANS

APS HUM 5.1.1	Explain the concept of systems.	2	People, procedures, equipment, ATM in system terms, simple; complicated and complex systems, system thinking	ALL
HUMB 1.3.3		2		
HUMR 5.1.1				

Moved from Basic to Rating training for students to better understand the content. Suggestion to include the explanation of three complexity levels accepted.

APS HUM 5.1.2	Describe how changes in one part of a system may impact the other parts. Explain	2		ALL
HUMB 1.3.5	the consequences of a systems failure in	2		
HUMR 5.1.2	ATS:			

Moved from Basic to Rating training for students to better understand the content. Corpus changed for clarity.

APS HUM 5.1.3	Explain the need for matching human and equipment. Describe the role of the human	2		ALL
HUMB 1.3.6	in the system.	2		
HUMR 5.1.3				

Moved from Basic to Rating training for students to better understand the content. Corpus changed for clarity.

~~**HUM 5 HUMAN ERROR**~~

~~**HUM 5.1 Human error**~~

APS HUM 5.1.1	Explain the relationship between error and safety:	2	Number and combination of errors; proactive versus reactive approach to discovery of error	ALL
HUMB 4.2.4		2	Optional content: ICAO Circular 314 = AN/178 Threat and Error Management (TEM) in Air Traffic Control	

The proposal to refresh/delete Topic 5 ERROR and associated Subtopics/objectives accepted - now well covered in either Basic or new "Threat and error management" topic in the Ratings.

APS HUM 5.1.2	Differentiate between the types of error:	2	Slips, lapses, mistakes	ALL
		2	Optional content: Circular 314 = AN/178 Threat and Error Management (TEM) in Air Traffic Control	

The proposal to delete this objective accepted - Not need for this classification in the Initial training but later in Safety management training.

APS HUM 5.1.3	Describe error-prone conditions:	2	Optional content: increase in traffic; changes in procedures, complexities of systems or traffic, weather, unusual occurrences	ALL
		2		

The proposal to refresh/delete Topic 5 ERROR and associated Subtopics/objectives accepted - now well covered in the new TEM topic.

APS HUM 5.1.4	Collect examples of different error types, their causes and consequences in ATC:	3 3	Optional content: ICAO Circular 314 = AN/178 Threat and Error Management (TEM) in Air Traffic Control	ALL
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As above.

APS HUM 5.1.5	Explain how to detect errors to compensate for them:	2 2	STCA, MSAW, individual and collective strategy Optional content: ICAO Circular 314 = AN/178 Threat and Error Management (TEM) in Air Traffic Control	ALL
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As above.

APS HUM 5.1.6	Execute corrective actions:	3 3	Error compensation Optional content: ICAO Circular 314 = AN/178 Threat and Error Management (TEM) in Air Traffic Control	ALL
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As above.

APS HUM 5.1.7 5.1.7 3.1.1	Explain the importance of error management:	2 2	Optional content: prevention of incidents, safety improvement, revision of procedures and/or working practises	ALL
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Modified by adding the notion of "threat" and moved to new TEM Topic as 3.1.1

APS HUM 5.1.8 5.1.8 HUMUC	Describe the impact on an ATCO following an occurrence/incident:	2 2	Optional content: reporting, SMS, investigation, CISM	ALL
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The proposal to delete this objective for consideration/inclusion in the later stages of ATCO training (Unit-Continuation-Development) accepted.

HUM 5.2 Violation of rules

APS HUM 5.2.1 5.2.1 HUMUC	Explain the causes and dangers of violation of rules becoming accepted as a practice:	2 2	Optional content: ICAO Circular 314 = AN/178 Threat and Error Management (TEM) in Air Traffic Control	ALL
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The proposal to move this violation of rules objective to later stages of ATCO training (Unit-Continuation) accepted. It will be easier for students to understand it in the operational environment.

HUM 6 COMMUNICATION COLLABORATIVE WORK

HUM 6.1 Effective communication

APS HUM 6.1.1	Explain effective communication in ATC operations.	2	ICAO Doc 9868	ALL
6.1.1		2		

The proposal to introduce new communication related objective to explain the importance of effective communication in ATC environment (from human performance point of view) accepted.

APS HUM 6.1.1	Use communication effectively in ATC.	3		ALL
ATM 2.1.4		3		

The proposal to delete this objective as similar (at level 4) already exists in ATM accepted.

APS HUM 6.1.2	Explain key strategies used to enable open communication.	2	Optional content: Active listening, active speaking, assertiveness, honesty, relevance, facts, neutrality	ALL
		2		

The proposal to introduce new communication related objective to stress the importance of open communication accepted.

APS HUM 6.1.2	Analyse examples of pilot and controller communication for effectiveness.	4		ALL
HUM 6.1.2		4		
ATM 2.1.5				

Accepted proposal of merging and moving some practical related communication objectives to ATM subject.

APS HUM 6.1.3	Describe parameters affecting controller's communication competency. pilot cooperation	2	Workload, mutual knowledge, controller versus pilot mental picture, distractions, sound, human conflicts	ALL
6.4.1		2		

Optional content: Communication between and in the team(s), in the simulator, with the pilots, instructors, coordination partners workload, mutual knowledge, controller vs pilot mental picture

Improved wording, content and objective moved to Effective communication to broaden the scope from pilot controller cooperation only to overall ATCO's communication competence.

HUM 6.2 Effective feedback

APS HUM 6.2.1 Define feedback. 1 1 ALL

HUM 6.2.1

The proposal to introduce new communication related subtopic and associated objectives to stress the importance of Effective feedback accepted.

APS HUM 6.2.2 Explain the purpose of receiving and giving feedback and its effect on performance. 2 2 ALL

HUM 6.2.2

As above.

APS HUM 6.2.3 Consider the impact of communication styles on feedback, and resolving conflicts. 2 2 ALL

HUM 6.2.3

As above.

APS HUM 6.2.4 Integrate feedback into performance. 4 4 ALL

HUM 6.2.4

As above.

HUM 6.2 Collaborative work within the same area of responsibility

APS HUM 6.2.1 List communication means between controllers in charge of the same area of responsibility (sector or tower). 1 1 *Optional content: electronic, written, verbal and non-verbal communication* ALL

HUM 6.2.1

ATM 2.1.1

The proposal to move this communication objective to EQPS subject modified and some communication objectives moved/merged to ATM communication related topic.

APS HUM 6.2.2 Explain consequences of the use of communication means on effectiveness. 2 2 *Optional content: strips legibility and encoding, labels designation, feedback* ALL

6.2.2

The proposal of merging some communication (collaborative work) objectives in the appropriate ATM topic accepted. This objective is already well covered there.

APS HUM 6.2.3	List possible actions to provide a safe position handover.	1 1	<i>Optional content: rigour, preparation, overlap time</i>	ALL
HUM 6.2.3				
ATM 9.3.3				

The proposal of moving and merging some communication (handover/takeover) objectives in the appropriate ATM topic accepted.

APS HUM 6.2.4	Explain consequences of a missed position handover process.	2 2		ALL
HUM 6.2.4				
ATM 9.3.4				

The proposal of moving and merging some communication (handover/takeover) objectives in the appropriate ATM topic accepted.

HUM 6.3 Collaborative work between different areas of responsibility

APS HUM 6.3.1	List factors and means for an effective coordination between sectors and/or tower positions.	1 4	<i>Optional content: other sectors constraints, electronic coordination tools</i>	ALL
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The proposal of delete this communication (collaborative work) objective accepted. This objective is already well covered in ATMB 5.3 "Means of coordination" subtopic and at a higher levels (2 and 3)

HUM 6.4 Controller/pilot cooperation

APS HUM 6.4.1	Describe parameters affecting controller /pilot cooperation	2 2	<i>Optional content: workload, mutual knowledge, controller vs pilot mental picture</i>	ALL
6.4.1				
6.1.3				

The objective (with the modified wording and content) moved to Effective communication to broaden the scope from pilot controller cooperation only to overall ATCO's communication competence.

Subject 8 : EQUIPMENT AND SYSTEMS

The subject objective is:

~~Learners shall integrate knowledge and understanding of the basic working principles of equipment and systems and comply with the equipment and system degradation procedures in the provision of ATS:~~

EQPS 1		VOICE COMMUNICATIONS		
EQPS	1.1	Radio communications		
APS EQPS 1.1.1	Operate two-way communication equipment.	3 3	Transmit/receive switches, procedures <i>Optional content: frequency selection, standby equipment</i>	ALL
APS EQPS 1.1.2	Identify indications of operational status of radio equipment.	3 3	<i>Optional content: indicator lights, serviceability displays, selector/frequency displays</i>	ALL
APS EQPS 1.1.3	Consider radio range.	2 2	<i>Optional content: transfer to another frequency, apparent radio failure, failure to establish radio contact, frequency protection range</i>	APP ACP APS ACS
EQPS	1.2	Other voice communications		
APS EQPS 1.2.1	Operate landline communications.	3 3	<i>Optional content: telephone, interphone and intercom equipment</i>	ALL
EQPS 2		AUTOMATION IN ATS		
EQPS	2.1	Aeronautical fixed telecommunication network (AFTN)		
APS EQPS 2.1.1	Decode AFTN messages.	3 3	<i>Optional content: movement and control messages, NOTAM, SNOWTAM, BIRDTAM, etc.</i>	ALL
EQPS	2.2	Automatic data interchange		
APS EQPS 2.2.1	Use automatic data transfer equipment where available.	3 3	<i>Optional content: sequencing systems, automated information and coordination, OLDI</i>	ADC APS ACS
EQPS 3		CONTROLLER WORKING POSITION		
EQPS	3.1	Operation and monitoring of equipment		
APS EQPS 3.1.1	Monitor the technical integrity of the controller working position.	3 3	Notification procedures, responsibilities	ALL

APS EQPS 3.1.2	Operate the equipment of the controller working position.	3 3	<i>Optional content: situation displays, flight progress board, flight data display, radio, telephone, maps and charts, strip-printer, clock, information systems, UDF/VDF</i>	ALL
APS EQPS 3.1.3	Operate available equipment in abnormal and emergency situations.	3 3		ALL
EQPS 3.2	Situation displays and information systems			
APS EQPS 3.2.1	Use situation displays.	3 3		ALL
APS EQPS 3.2.2	Check availability of information.	3 3		ALL
APS EQPS 3.2.3	Obtain information from equipment.	3 3		APP ACP APS ACS
EQPS 3.3	Flight data systems			
APS EQPS 3.3.1	Use the flight data information at controller working position.	3 3		ALL
EQPS 3.4	Use of ATS surveillance system			
APS EQPS 3.4.1	Use the ATS surveillance system functions.	3 3		APS ACS
APS EQPS 3.4.2	Analyse the information provided by the ATS surveillance system.	4 4		APS ACS
APS EQPS 3.4.3	Assign codes.	4 4		APS ACS
APS EQPS 3.4.4	Appreciate the use of advanced surveillance technology.	3 3	<i>Optional content: Mode S, ADS-B, MLAT</i>	APS ACS
EQPS 3.5	Advanced systems			
APS EQPS 3.5.1	Appreciate the use of controller pilot datalink communications when available.	3 3		APS ACS

APS EQPS	Characterise Appreciate the use of	2	MTCD, AMAN, DMAN	APS ACS
3.5.2	information provided by advanced systems.	2<3	Optional content: trajectory-based information, MTCD , MONA, etc.	

The proposal to add MTCD specific objective to EQPSB modified by introducing mandatory content in the relevant rating training + The proposal to reduce the level (scope) of advanced systems objective accepted.

EQPS 4 FUTURE EQUIPMENT

EQPS 4.1 New developments

APS EQPS	Recognise future developments.	1	New advanced systems	ALL
4.1.1		1	Optional content: European ATM master plan, European plan for aviation safety	

The proposal to clarify this objective accepted by adding relevant reference to optional content.

EQPS 5 EQUIPMENT AND SYSTEMS LIMITATIONS AND DEGRADATION

EQPS 5.1 Reaction to limitations

APS EQPS	Take account of the limitations of equipment	2		ALL
5.1.1	and systems.	2		

The proposal to move this objective to ATM or ABES not accepted - The location of the objectives in the Rating training is almost irrelevant. They all need to be covered and are dependent on the prerequisites (relation with other subjects/topics...). This level 2 objective is introduction to the following (detailed) level 3 objective related to standard ATC equipment degradation.

APS EQPS	Respond to technical deficiencies of the	3	Notification procedures, responsibilities	ALL
5.1.2	operational position.	3		

EQPS 5.2 Communication equipment degradation

APS EQPS	Identify that communication equipment has	3	Optional content: ground-air and landline communications	APP ACP APS ACS
5.2.1	degraded.	3		

APS EQPS	Apply contingency procedures in the event	3	Optional content: total or partial degradation of ground-air and landline communications, alternative methods of transferring data	ALL
5.2.2	of communication equipment degradation.	3		

EQPS 5.3 Navigational equipment degradation

APS EQPS	Identify when a navigational equipment	3	Optional content: VOR , navigational aids	ALL
5.3.1	failure will affect operational ability.	3		

The proposal to add GNSS to content modified. The generic term "Navigational aids" includes the proposed GNSS as well; VOR also removed from optional content (included in the generic term of nav aids)

APS EQPS 5.3.2	Apply contingency procedures in the event of a navigational equipment degradation.	3 3	<i>Optional content: vertical separation, information to aircraft, navigational assistance, seeking assistance from adjacent units</i>	ALL
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EQPS 5.4 Surveillance equipment degradation

APS EQPS 5.4.1	Identify that surveillance equipment has degraded.	3 3	Partial power failure, loss of certain facilities, total failure	APS ACS
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APS EQPS 5.4.2	Apply contingency procedures in the event of surveillance equipment degradation.	3 3	<i>Optional content: inform adjacent sectors, inform aircraft, apply vertical separation (emergency), increased horizontal separation, reduce the number of aircraft entering area of responsibility, transfer aircraft to another unit</i>	APS ACS
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EQPS 5.5 ATC processing system degradation

APS EQPS 5.5.1	Identify a processing system degradation.	3 3	<i>Optional content: FDPS, SDPS, software processing of situation display</i>	APS ACS
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APS EQPS 5.5.2	Apply contingency procedures in the event of a processing system degradation.	3 3		APS ACS
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Subject 9 : PROFESSIONAL ENVIRONMENT

The subject objective is:

~~Learners shall identify the need for close cooperation with other parties concerning ATM operations and appreciate aspects of environmental protection.~~

PEN 1 FAMILIARISATION					
PEN 1.1 Study visit to an approach control unit					
APS PEN	1.1.1	Appreciate the functions and provision of an operational approach control service.	3	Study visit to an approach control unit	APP APS
Editorial correction of the subtopic and associated objective's corpus.					
PEN 2 AIRSPACE USERS					
PEN 2.1 Contributors to civil ATS operations					
APS PEN	2.1.1	Characterise civil ATS activities in approach control unit.	2	Study visit to an approach control unit	APP APS
				<i>Optional content: familiarisation visits to TWR, ACC, AIS, RCC</i>	
APS PEN	2.1.2	Characterise other parties interfacing with ATS operations.	2	<i>Optional content: familiarisation visits to engineering services, firefighting and emergency services, airline operations offices</i>	ALL
PEN 2.2 Contributors to military ATS operations					
APS PEN	2.2.1	Characterise military ATS activities.	2	<i>Optional content: familiarisation visits to TWR, APP, ACC, AIS, RCC, Air Defence Units</i>	ALL
PEN 3 CUSTOMER RELATIONS					
PEN 3.1 Provision of services and user requirements					
APS PEN	3.1.1	Appreciate Identify the role of an air navigation ATC as a service provider.	3	Regulation (EU) 2018/1139	ALL
The proposal to clarify this objective accepted - better wording and appropriate regulatory reference added to mandatory content.					
APS PEN	3.1.2	Appreciate ATS users' requirements.	3		ALL

PEN 4		ENVIRONMENTAL PROTECTION		
PEN	4.1	Environmental protection		
APS PEN 4.1.1	Describe the environmental constraints on aerodrome operations.	2 2	<i>Optional content: ICAO Doc 10013 Circular 303 - Operational opportunities to reduce minimise fuel burn use and reduce emissions</i>	ADC APP APS
The proposal to update optional content to more appropriate document accepted.				
APS PEN 4.1.2	Explain the use of Collaborative Environmental Management (CEM) process at airports.	2 2	<i>Optional content: European ATM Master Plan, EUROCONTROL CEM Specification</i>	ADC APP APS
The proposal for more recent and appropriate optional content accepted.				
APS PEN 4.1.3	Appreciate the mitigation techniques used to minimise aviation's impact on the environment.	3 3	<i>Optional content: continuous descent operations (CDO), continuous climb operations (CCO), noise abatement procedures, noise preferential routes, flight efficiency</i>	APS

Subject 10: ABNORMAL AND EMERGENCY SITUATIONS

The subject objective is:

~~Learners shall develop professional attitudes to manage traffic in abnormal and emergency situations:~~

ABES 1		ABNORMAL AND EMERGENCY SITUATIONS (ABES)		
ABES	1.1	Overview of ABES		
APS ABES 1.1.1	List common abnormal and emergency situations.	1 1	<i>Optional content: EATM Guidelines for Controller Training in the Handling of Unusual/Emergency Situations, ambulance flights, ground based safety nets alerts, airframe failure, unreliable instruments, runway incursion, GNSS failure</i>	ALL
<div style="border: 1px solid black; padding: 5px;"> <p>Improved content due to emerged use and possible failure of GNSS + The proposal to move this objective to ACFT not accepted - The location of the objectives in the Rating training is almost irrelevant. They all need to be covered and are dependent on the prerequisites (relation with other subjects/topics...). Therefore most of them are related to, or covered in the SIM and linked with the major subject - ATM, anyway.</p> </div>				
APS ABES 1.1.2	Identify potential or actual abnormal and emergency situations.	3 3		ALL
<div style="border: 1px solid black; padding: 5px;"> <p>The proposal to move this objective to ACFT not accepted - The location of the objectives in the Rating training is almost irrelevant. They all need to be covered and are dependent on the prerequisites (relation with the other subjects/topics...). Therefore most of them are related to or covered in the simulator and linked with the major subject - ATM, anyway.</p> </div>				
APS ABES 1.1.3	Take into account the procedures for given abnormal and emergency situations.	2 2	<i>Optional content: ICAO Doc 4444</i>	APP ACP APS ACS
APS ABES 1.1.4	Take into account that procedures do not exist for all abnormal and emergency situations.	2 2	<i>Optional content: real life examples</i>	ALL
<div style="border: 1px solid black; padding: 5px;"> <p>The proposal to move this objective to ACFT not accepted - The location of the objectives in the Rating training is almost irrelevant. They all need to be covered and are dependent on the prerequisites (relation with the other subjects/topics...). Therefore, most of them are related to or covered in the simulator and linked with the major subject - ATM, anyway.</p> </div>				
APS ABES 1.1.5	Consider how the evolution of a situation may have an impact on safety.	2 2	<i>Optional content: separation, information, coordination</i>	ALL

ABES 2 SKILLS IMPROVEMENT					
ABES	2.1	Communication effectiveness			
APS ABES 2.1.1	Ensure effective communication in all circumstances including the case where standard phraseology is not applicable.	4 4	Phraseology, vocabulary, readback, silence instruction		ALL
APS ABES 2.1.2	Apply change of radiotelephony call sign.	3 3	ICAO Doc 4444 ICAO Doc Regulation (EU) No 923/2012 <i>Optional content: ICAO Doc 4444</i>		ALL
The proposal to reintroduce again this objective (deleted in 2019 - Phase 1) accepted and content updated appropriately.					
ABES	2.2	Avoidance of mental overload			
APS ABES 2.2.1	Describe actions to keep control of the situation.	2 2	<i>Optional content: sector splitting, holding, flow management, task delegation</i>		ALL
APS ABES 2.2.2	Organise priority of actions.	4 4			ALL
APS ABES 2.2.3	Ensure effective circulation of information.	4 4	<i>Optional content: between executive and planner/coordinator, with the supervisor, between sectors, between ACC, APP and TWR , with ground staff, etc.</i>		ALL
APS ABES 2.2.4	Consider asking for help.	2 2			ALL
ABES	2.3	Air / ground cooperation			
APS ABES 2.3.1	Collect appropriate information relevant to the situation.	3 3			ALL
APS ABES 2.3.2	Assist the pilot.	3 3	Pilot workload <i>Optional content: instructions, information, support, human factors, etc.</i>		ALL

ABES 3 PROCEDURES FOR ABNORMAL AND EMERGENCY SITUATIONS

ABES 3.1 Application of procedures for ABES

APS ABES 3.1.1	Apply the procedures for given abnormal and emergency situations.	3 3	Optional content: EATM Guidelines for Controller Training in the Handling of Unusual/Emergency Situations, ambulance flights, ground based safety nets alerts, airframe failure	ALL
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The proposal to add GNSS failure to content due to emerged use and possible failure of GNSS not accepted for this practical objective - No procedures published therefore difficult to implement in Initial training.

ABES 3.2 Radio failure

APS ABES 3.2.1	Describe the procedures followed by a pilot when he/she experiences complete or partial radio failure.	2 2	Regulation (EU) No 923/2012 Optional content: ICAO Doc 4444, military procedures, simulator operation procedures	ALL
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The proposal to add national procedures related to the pilots' comm. failure to the content of ABES objective accepted by adding simulator operation procedures.

APS ABES 3.2.2	Apply the procedures to be followed when a pilot experiences complete or partial radio failure.	3 3	Regulation (EU) No 923/2012 Optional content: prolonged loss of communication	ALL
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The proposal to add SERA Regulation (EU) No 923/2012 to mandatory content accepted. (SERA.14087 Use of relay communication technique) includes the ATC action after the comm. failure.)

ABES 3.3 Unlawful interference and aircraft bomb threat

APS ABES 3.3.1	Apply ATC procedures associated with unlawful interference and aircraft bomb threat.	3 3	Regulation (EU) No 923/2012 Optional content: simulator operation procedures	ALL
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The proposal to add ICAO Annexes (14 and 17) modified by adding the simulator operation procedures to optional content in addition to SERA reference in mandatory content.

ABES 3.4 Strayed or unidentified aircraft

APS ABES 3.4.1	Apply the procedures in the case of strayed aircraft.	3 3	Regulation (EU) No 923/2012 Optional content: inside controlled airspace, outside controlled airspace	ALL
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APS ABES 3.4.2	Apply the procedures in the case of unidentified aircraft.	3 3	Regulation (EU) No 923/2012	ALL
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ABES 3.5 Diversions

APS ABES 3.5.1	Provide navigational assistance to diverting emergency aircraft.	4 4	Track/heading, distance, other navigational assistance <i>Optional content: nearest most suitable aerodrome</i>	APP ACP APS ACS
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ABES 3.6 Transponder failure

APS ABES 3.6.1	Apply procedures in the event of an SSR transponder failure.	3 3	Regulation (EU) No 923/2012 <i>Optional content: total/partial failure, impact on ADS-B/Mode S capability</i>	APS ACS
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ABES 3.7 Interception of civil aircraft

APS ABES 3.7.1	Explain the procedures in the event of interception of civil aircraft.	2 2	Regulation (EU) No 923/2012	ALL
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New subtopic an associated objective to cover important safety and regulatory requirement that was missing in the Initial training.

Subject 11: AERODROMES

The subject objective is:

~~Learners shall recognise and understand the design and layout of aerodromes.~~

AGA 1 AERODROME DATA, LAYOUT AND COORDINATION					
AGA	1.1	Definitions			
APS AGA	Define aerodrome data.		1	Regulation (EU) No 139/2014	ADC APP APS
1.1.1			1	<i>Optional content: aerodrome elevation, reference point, apron, movement area, manoeuvring area, hot spot</i>	
AGA	1.2	Coordination			
APS AGA	Identify the information that has to be passed between Air Traffic Services (ATS) and the airport authority.		3	Airport conditions, fire/rescue category, condition of ground equipment and NAVAIDs, AIRAC, Regulation (EU) No 139/2014	APP APS ADC
1.2.1			3		
AGA 2 MOVEMENT AREA					
AGA	2.1	Movement area			
APS AGA	Describe movement area.		2	Regulation (EU) No 139/2014	ADC APP APS
2.1.1			2		
APS AGA	Describe the marking of obstacles and unusable or unserviceable areas.		2	Flags, signs on pavement, lights	ADC APP APS
2.1.2			2		
APS AGA	Identify the information on conditions of the movement area that have to be passed to aircraft.		3	Essential information on aerodrome conditions	ADC APP APS
2.1.3			3		
AGA	2.2	Manoeuvring area			
APS AGA	Describe manoeuvring area.		2	Regulation (EU) No 139/2014	ADC APP APS
2.2.1			2		
APS AGA	Describe taxiway.		2		ADC APP APS
2.2.2			2		
APS AGA	Describe the daylight marking on taxiways.		2		ADC APP APS
2.2.3			2		

APS AGA 2.2.4	Describe taxiway lighting.	2 2		ADC APP APS
AGA 2.3	Runways			
APS AGA 2.3.1	Describe runway.	2 2	Runway, runway surface, runway strip, shoulder, runway end safety areas, clearways, stopways	ADC APP APS
APS AGA 2.3.2	Describe instrument runway.	2 2	Regulation (EU) No 139/2014	ADC APP APS
APS AGA 2.3.3	Describe non-instrument runway.	2 2	Regulation (EU) No 139/2014	ADC APP APS
APS AGA 2.3.4	Explain declared distances.	2 2	TORA, TODA, ASDA, LDA	ADC APP APS
APS AGA 2.3.5	Explain the differences between ACN and PCN.	2 2	Strength of pavements	ADC APP APS
APS AGA 2.3.6	Describe the daylight markings on runways.	2 2	<i>Optional content: runway designator, centre line, threshold, aiming point, fixed distance, touchdown zone, side strip, colour</i>	ADC APP APS
APS AGA 2.3.7	Describe runway lights.	2 2	<i>Optional content: colour, centre line, intensity, edge, touchdown zone, threshold, barrettes</i>	ADC APP APS
APS AGA 2.3.8	Explain the functions of visual landing aids.	2 2	<i>Optional content: AVASI, VASI, PAPI</i>	ADC APP APS
APS AGA 2.3.9	Describe the approach lighting systems.	2 2	Centre line, cross bars, stroboscopic lights, colours, intensity and brightness	ADC APP APS
APS AGA 2.3.10	Characterise the effect of water/ice on runways.	2 2		ADC APP APS

APS AGA 2.3.11	Explain braking action performance and methods of reporting it.	2 2	Braking action coefficient	ADC APP APS
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The proposal to update corpus and remove the content accepted to align with new ICAO Global Reporting Format (GRF) terminology with regard to braking performance.

APS AGA 2.3.12	Explain the effect of runway visual range on aerodrome operation.	2 2		ADC APP APS
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AGA 3 OBSTACLES

AGA 3.1 Obstacle-free airspace around aerodromes

APS AGA 3.1.1	Explain the necessity for establishing and maintaining an obstacle-free airspace around aerodromes.	2 2		ADC APP APS
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AGA 4 MISCELLANEOUS EQUIPMENT

AGA 4.1 Location

APS AGA 4.1.1	Explain the location of different aerodrome ground equipment.	2 2	<i>Optional content: LLZ, GP, VDF, radio communication or ATS surveillance systems sensors, stopbars, AVASI, VASI, PAPI</i>	ADC APP APS
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