



ICAO

## Doc 10057

# Manual on Air Traffic Safety Electronics Personnel Competency-based Training and Assessment

First Edition, 2017



Approved by and published under the authority of the Secretary General

INTERNATIONAL CIVIL AVIATION ORGANIZATION

**SUBJECT 4: METEOROLOGY****TOPIC 1: METEOROLOGY****SUB-TOPIC 1.1: Introduction to meteorology**

1.1.1	State the relevance of meteorology in aviation.	1	Influence on the operation of aircraft, flying conditions, aerodrome conditions.
1.1.2	State the weather prediction and measurement systems available.	1	—

**SUB-TOPIC 1.2: Impact on aircraft and ATS operation**

1.2.1	State the meteorological conditions and their impact on aircraft operations.	1	e.g. Atmospheric circulation, wind, visibility, temperature/humidity, clouds, precipitation.
1.2.2	State the meteorological conditions hazardous to aircraft operations.	1	e.g. Turbulence, thunderstorms, icing, microbursts, squall, macro bursts, wind shear, standing water on runways (aquaplaning).
1.2.3	Explain the impact of meteorological conditions and hazards on ATS operations.	2	e.g. Effects on equipment performance (e.g. temperature inversion, rain density), increased vertical and horizontal separation, low visibility procedures, anticipation of flights not adhering to tracks, diversions, missed approaches.
1.2.4	Explain the effects of weather on propagation.	2	e.g. Anaprop, rain noise, sunspots.

**SUB-TOPIC 1.3: Meteorological parameters and information**

1.3.1	List the main meteorological parameters.	1	Wind, visibility, temperature, pressure, humidity.
1.3.2	List the most common weather messages and broadcasts used in aviation.	1	e.g. ICAO Annex 3.  Meteorology messages: TAF, METAR, SNOWTAM Broadcasts: ATIS/flight meteorology broadcast (VOLMET).

**SUB-TOPIC 1.4: Meteorological systems**

1.4.1	Explain the basic principles of the main meteorological systems in use.	2	e.g. Weather display and information systems, wind speed (anemometer), wind direction (weather vane), visibility (types of IRVR, forward scatter), temperature probes, pressure (aneroid barometers), humidity, cloud base (laser ceilometers).
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**EASA**  
European Aviation Safety Agency



**ATM/ANS**  
(IR + AMC/GM)

**eRules**

## Appendix 2a – ATSEP Basic training – Streams

ATSEP UID (Unique Objective Identifier)	CORPUS	Tax	CONTENT
<b>ATSEP.BAS.MET</b>	<b>METEOROLOGY</b>		
<b>ATSEP.BAS.MET_1</b>	<b>METEOROLOGY (MET)</b>		
<b>ATSEP.BAS.MET_1.1</b>	<b>Introduction to Meteorology</b>		
ATSEP.BAS.MET_1.1.1	State the relevance of meteorology in aviation	1	Influence on the operation of aircraft, flying conditions, aerodrome conditions
ATSEP.BAS.MET_1.1.2	State the weather prediction and measurement systems available	1	wind, visibility, temperature, pressure, humidity, cloud base
<b>ATSEP.BAS.MET_1.2</b>	<b>Impact on Aircraft and ATS Operation</b>		
ATSEP.BAS.MET_1.2.1	State the meteorological conditions and their impact on aircraft operations	1	e.g. wind, visibility, temperature/humidity, clouds, precipitation, pressure, density
ATSEP.BAS.MET_1.2.2	State the meteorological conditions hazardous to aircraft operations	1	e.g. turbulence, thunderstorms, icing, squall, macro bursts, wind shear, contaminated runway
ATSEP.BAS.MET_1.2.3	Explain the impact of meteorological conditions and hazards on ATS operations	2	Increased vertical and horizontal separation, low visibility procedures, anticipation of flights not adhering to tracks, diversions, missed approaches e.g. effects on equipment performance
ATSEP.BAS.MET_1.2.4	Explain the effects of weather on propagation	2	e.g. anaprop, rain noise, sunspots
<b>ATSEP.BAS.MET_1.3</b>	<b>Meteorological Parameters and Information</b>		
ATSEP.BAS.MET_1.3.1	List the main meteorological parameters	1	Wind, visibility, temperature, pressure, humidity
ATSEP.BAS.MET_1.3.2	List the most common weather messages and broadcasts used in aviation	1	Meteorology messages: TAF, METAR, SNOWTAM, SIGMET Broadcasts: ATIS/VOLMET e.g. Regulation (EU) 2017/373 – Annex V (Part-MET)
<b>ATSEP.BAS.MET_1.4</b>	<b>Meteorological Systems</b>		
ATSEP.BAS.MET_1.4.1	Explain the basic principles of the main meteorological systems in use	2	e.g. weather display and information systems, wind speed (anemometer), wind direction (weather vane), visibility (types of IRVR, forward scatter), temperature probes, pressure (aneroid barometers), humidity, cloud base (laser ceilometers)