

Glossary of

Aeronautical and astronautical terms —

Section 15: Meteorology

UDC 001.4:629.7:551.5

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

BSI
Documents

AVA

Document Sharing Hub

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 12 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Amendments issued since publication

Amd. No.	Date	Comments

This British Standard, having been approved by the Aerospace Industry Standards Committee, was published under the authority of the Executive Board of the Institution on 14 August 1972

© BSI 01-2000

The following BSI references relate to the work on this standard:
Committee reference ACE/1
Draft for comment 70/30482

ISBN 0 580 07395 5

Contents

	Page
Section 15. Meteorology	
Subsection 151. General	1
Subsection 152. Winds	2
Subsection 153. Weather	5
Subsection 154. Clouds	5
Subsection 155. Synoptic meteorology	7
Subsection 156. Ice formation in flight	9
Subsection 157. Instruments	10
Table 1 — Beaufort scale of wind force	12

(Notes on the arrangement and scope of the glossary are contained in the Foreword to Section 1.)

The terms included in this section are limited mainly to those used in aeronautics. For other terms and for amplification of the definitions given here, reference should be made to the *Meteorological Glossary, 5th Edition*, published by H.M. Stationery Office.

Section 15. Meteorology

Subsection 151. General

No.	Term	Definition
15101	advection	The process of transfer by horizontal motion in the atmosphere, e.g., the transfer of heat from low to high latitudes.
15102	atmosphere	The air surrounding the Earth.
15103	<i>International Standard atmosphere</i>	A standard atmosphere adopted internationally for use in comparing the performance of aircraft. (See British Standard G.199.)
15104	<i>standard atmosphere</i>	Any hypothetical atmosphere the physical properties of which are given arbitrary values, approximating to mean conditions, for specific purposes.
	atmospheric layers^a	
15105	<i>troposphere</i>	The layer of the atmosphere extending from the Earth's surface to an altitude varying roughly between 7.5 km (25 000 ft) and 15 km (50 000 ft) in which temperature normally decreases with altitude.
15106	<i>tropopause</i>	The atmospheric boundary between the troposphere and the stratosphere.
15107	<i>stratosphere</i>	The layer of the atmosphere above the troposphere and below the mesosphere in which the temperature generally increases with altitude.
15108	<i>stratopause</i>	The atmospheric boundary between the stratosphere and the mesosphere.
15109	<i>mesosphere</i>	That part of the atmosphere between the stratosphere, at about 50 km (165 000 ft), and the mesopause, at about 80 km (260 000 ft), in which temperature generally decreases with altitude.
15110	<i>mesopause</i>	The top of the mesosphere, marked by a temperature minimum.
15111	<i>thermosphere</i>	The region above the mesopause in which temperature generally increases with altitude.
15112	atmospheric pressure	The pressure produced at any point in the atmosphere by the weight of the air above it.
15113	aurora	The sporadic radiant emission from the upper atmosphere over middle and high latitudes. It is liable to interfere seriously with radiocommunication.
15114	basic thermal radiation	Thermal radiation from the sun at sunspot minimum.
15115	convection	The process of transfer of heat and mass by vertical motion in the atmosphere.
15116	dew point	The temperature to which humid air must be cooled without change of pressure or humidity mixing ratio for it to become saturated with respect to liquid water.
15117	hoar-frost point	The temperature to which humid air must be cooled without change of pressure or humidity mixing ratio for it to become saturated in the presence of ice.
15118	humidity	The condition of the atmosphere in respect of water vapour.
15119	<i>humidity, mixing ratio</i> MIXING RATIO OF MOIST AIR	In any volume of air, the ratio of the mass of water vapour to the mass of dry air.

^a For atmospheric layers not defined herein reference should be made to the Meteorological Glossary.

No.	Term	Definition
15120	<i>relative humidity</i>	The ratio, expressed as a percentage, of the actual vapour pressure to the saturation vapour pressure over a plane liquid water surface at the same dry-bulb temperature.
15121	<i>saturation vapour pressure</i>	The partial pressure of water vapour in equilibrium with a plane surface of water or of ice. It increases with temperature and below 0 °C it is, at a given temperature, greater over supercooled water than over ice.
15122	<i>vapour concentration</i>	The mass of water vapour per unit volume of air.
15123	<i>inversion</i>	An increase of air temperature with altitude.
15124	<i>lapse rate</i>	The rate of decrease of air temperature with altitude.
15125	<i>dry adiabatic lapse rate</i>	The lapse rate of dry air under adiabatic conditions (approximately 1 °C per 100 metres or 5.4 °F per 1 000 feet).
15126	<i>saturated adiabatic lapse rate</i>	The lapse rate of saturated air under adiabatic conditions. Its value varies rapidly with temperature and slowly with pressure. For pressures between 1 050 mbar and 700 mbar it is approximately 0.5 °C per 100 metres at 10 °C, or 3 °F per 1 000 feet at 50 °F.
	surface ocean waves	
15127	<i>sea</i>	The degree of sea disturbance produced by local causes. It is reported in a “state of sea” code in which the scale number increases from 0 to 9 according to the average wave height.
15128	<i>swell</i>	Wave motion persisting in the sea after the disturbing cause has passed away or due to a disturbance at a distance, usually characterized by long, low, regular undulations.
15129	Synoptic meteorology	The collection and presentation of information regarding meteorological conditions over a wide area at a given time.
15130	visibility	The greatest distance at which an object of specified characteristics can be seen and identified. At night, lights are observed and an equivalent day-light visibility is deduced.
Subsection 152. Winds		
15201	<i>atmospheric turbulence</i>	Random variations in the motion of the air.
15202	<i>clear air turbulence</i>	Atmospheric turbulence, of a scale sufficient to cause bumpiness to an aircraft in flight, not associated with cloud and not ascribable directly to the frictional influence of the ground or to convection currents.
15203	<i>convective turbulence</i>	Atmospheric turbulence predominantly associated with varying vertical air currents caused by heating of the atmosphere adjacent to the Earth’s surface.
15204	<i>cumulonimbus turbulence</i>	Intense convective turbulence within or near cumulonimbus cloud.
15205	<i>frictional turbulence</i> MECHANICAL TURBULENCE	Atmospheric turbulence produced by wind flow over surface irregularities.
15206	<i>backing</i>	A counter-clockwise change of wind direction in either hemisphere. (Cf. 15242.)
15207	Beaufort scale of wind force	A numerical scale, ranging from 0 (Calm) to 12 (Hurricane), originated by Rear-Admiral Sir Francis Beaufort for the estimation of wind force by observing its effects on common objects. (See Table 1.)