

GLOSSARY

PART 1 - ACRONYM LIST

AA	antiaircraft gun
AAA	antiaircraft artillery
AAM	antiaircraft missile
AC	Active Component
A/C	air conditioning
ACR	armored cavalry regiment
ADA	air defense artillery
adapt	adapter
AF	See USAF
AFM	air force manual
AFO	aerial forward observer
AFR	air force regulation
AGL	above ground level
AG/LT	assault gun/light tank
AI	area of interest
alt	altitude
ammo	ammunition
AMSS	automated meteorological sensor system
AO	area of operations
APC	armored personnel carrier
app	appendix
AR	Army Regulation
ARNG	Army National Guard
arty	artillery
ARTYMET	artillery meteorological team
ATACMS	Army tactical missile systems
ASAS	All-Source Analysis System
ATCCS;	Army Tactical Command and Control System
ATGM	antitank guided missile
ATW	antitank weapon
AVLB	armored vehicle launched bridge
avn	aviation
AWS	Air Weather Service (USAF)
bde	brigade
BDU	battle dress uniform
BFA	battlefield functional area
BIC	battlefield-induced contaminants

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BMCT	beginning of morning civil twilight
BMNT	beginning of morning nautical twilight
bn	battalion
BWK	belt weather kit
C	Celsius (Centigrade)
C ²	command and control
C ³	command, control, and communications
CAB	combat aviation brigade
cal	caliber
cap	capacity
CAS	close air support
CB	chemical biological
CFV	cavalry fighting vehicle
CG	Commanding General
comrr	communications
consump	consumption
COSCOM	corps support command
CP	command post
CS	combat support
CSS	combat service support
D	desired
DF	direction finding
dir	direction
div	division
DOD	Department of Defense
DTSS	Digital Topographic Support System
DZ	drop zone
E	essential
EAC	echelons above corps
ECB	echelons corps and below
EECT	end of evening civil twilight
EENT	end of evening nautical twilight
effect	effective
EMP	electromagnetic pulse
encl	enclosure
env	environmental
E-O	electro-optical
EW	electronic warfare

F	Fahrenheit
FALDP	forward area limited observation program
fc	footcandle
FDC	fire direction center
FLIR	forward looking infrared
FLOT	forward line of own troops
FO	forward observer
FOB	forward operating base
frz	freezing
FSU	fire support unit
ft	feet
gHz	gigahertz
GSM	ground station module
GSR	ground surveillance radar
GT	greater than
HAHO	high altitude, high opening
HALO	high altitude, low opening
HC	hexachloroethane
HE	high explosive
HF	high frequency
Hg	inches of mercury
HIC	high-intensity conflict
how	howitzer
hq	headquarters
hr	hour
hvy	heavy
IEW	intelligence and electronic warfare
IFV	infantry fighting vehicle
IMETS	Integrated Meteorological System
in	inch
in/hour	inches per hour
inf	Infantry
inter	interference
IPB	intelligence preparation of the battlefield
IR	Information requirement
Khz	kilohertz
km	kilometers
kn	knot (speed measurement)

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LAV	light armored vehicle
lgt	light
LIC	low-intensity conflict
LLL	low-light-level
LOC	lines of communication
LOS	line of sight
LRSU	long-range surveillance unit
LT	less than
LZ	landing zone
m	meter
MACOM	major Army command
max	maximum
Mb	millibars
MDT	moderate
MECH	mechanized
met	meteorological
METT-T	mission, enemy, terrain, troops, and time available
MFF	military free fall
mg	machine gun
MIC	mid intensity conflict
min	minimum
MLRS	multi-launcher rocket system
mm	millimeter
MOPP	mission-oriented protective posture
MOT	mobile observing team
mph	miles per hour
MR	moonrise
MS	moonset
MSL	mean sea level
MSR	main supply route
MT	medium tank
NATO	North Atlantic Treaty Organization
NBC	nuclear, biological, and chemical
nmi	nautical mile (distance)
NOE	nap-of-the-earth
NV	night vision
NVD	night vision devices
NVG	night vision goggles
NVS	night vision sights

OB	order of battle
obsr	observation
op	operation
qty	quantity
plt	platoon
PZ	pick-up zone
RAP	ram air parachute
R&S	reconnaissance and surveillance
RC	Reserve Component
recco	reconnaissance
REM3ASS	Remotely Monitored Battlefield Sensor System
rqmts	requirements
rqr	required
SAM	surface-to-air missile
SF	Special Forces
SFG	special forces group
SIO	senior intelligence officer
SLAF	side looking airborne radar
SOF	special operations forces
SOP	standing operating procedure
SOWT	special operations weather team
SP	self-propelled
spt	support
SR	sunrise
SS	sunset
SWO	staff weather officer
tac	tactical
TAS	tactical air support
TBM	tactical ballistic missile
TDA	tactical decision aid
temp	temperature
TF	task force
TOW	tube-launched, optically tracked, wire-guided
TRAD OC	US Army Training and Doctrine Command
TTP	tactics, techniques, and procedures
TV	television
UAV	unmanned aerial vehicle
UGDF	uniform gridded data field

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US	United States
USAF	United States Air Force
USAF	United States Army Reserve
VFR	visual flight rules
VHF	very high frequency
VT	variable time (fuse)
WA	weather advisory
WET	weather, enemy, and terrain
WETM	weather team
WGT	wet globe temperature
wo	without
WP	white phosphorus
WTD/A	weather tactical decision aid
WW	weather warning
X	an unknown quantity
Y	an unknown amount of time

PART 2 - DEFINITIONS

absolute humidity	A ratio of the quantity of water vapor present per unit volume of air, usually expressed as grams per cubic meter or grains per cubic foot.
Air Weather Service	An Air Force field operating agency reporting directly to the Air Staff. AWS operates centralized weather support and provides technical advice and assistance to USAF weather units in support of USAF and Army missions worldwide.
altitude	The height measured from MSL.
altostratus	Clouds that are relatively uniform gray to blue sheets that cover the entire sky. When thin, the sun or moon may be visible as a "bright spot." Cloud bases range from 6,500 to 20,000 feet AGL.
atmospheric pressure	The pressure exerted by the atmosphere as a consequence of gravitational attraction exerted upon the column of air laying directly above any point.
barometric pressure	The measure of atmospheric pressure by a mercurial or aneroid barometer. Changes in pressure are significant in weather forecasting. The normal pressure at sea level is 29.92 inches of mercury or 1013.3 millibars. Rising pressures usually indicated improving weather conditions; falling pressures may reflect impending inclement weather. Barometric pressure is used in aircraft altimeter settings to tell pilots how far above ground level the aircraft is. This is critical for landing during obscured conditions and NOE flying.
battlefield environment	A phrase used to describe the combination of weather, terrain, BIC, illumination, and background signatures that occur on a battlefield.
belt weather kit	A small kit with simple equipment, used originally by the US Forest Service, and now employed by S2 personnel at maneuver brigades. The BWK equipment measures temperature, dewpoint, pressure, and wind speed and direction. It is slow and does not meet the

	accuracy standards necessary to support the Army's battlefield weapon systems. The BWK will be replaced by an automated meteorological sensor system (AMSS).
blizzard	A violent, intensely cold wind of 30 kn or greater with considerable falling or blowing snow causing visibility to drop to .5 miles or less.
ceiling (cloud)	The height above the earth's surface of the lowest layer of clouds. This layer is reported as broken, overcast, or obscured and not classified as thin or partial. See cloud cover for details.
Celsius	A temperature scale (formerly called centigrade). The temperature interval between water's ice and steam points is divided into 100 parts (or degrees) with 0° Celsius at the freezing or ice point and 100° at the boiling or steam point. Used commonly worldwide.
cirrocumulus	Clouds that are high and thin which appear as small white flakes or patches of cotton. Cirrocumulus clouds are sometimes called a mackerel sky. The bases of cirrocumulus clouds are above 16,000 feet AGL.
cirrostratus	Clouds that are thin and whitish layers appearing like a sheet or veil. The ice crystals composing these clouds may produce a halo effect around the sun or moon. The bases of cirrostratus clouds are above 16,000 feet AGL.
cirrus	Clouds that are thin, feather-like ice crystal clouds in patches or narrow bands. Cirrus clouds are sometimes called mare's tails. The bases of cirrus clouds are above 16,000 feet AGL.
climatology	The historical records of weather conditions measured or observed at a specific location is known as climatology. Some data go back over 100 but generally a 10- to 25-year history is more common. Climatology is useful in planning operations beyond 5 to 7 days. It usually describes the average (or mean) conditions such as high and low temperatures and extremes.

clouds	A visible aggregate of minute water and ice or just ice particles in the atmosphere above the surface of the earth. Clouds differ from fog only by definition--fog is in contact with the surface of the earth.
cloud burst	A sudden and extremely heavy downpour of rain.
cloud cover	The amount of clouds over, or at, a given location. Cloud conditions are expressed as cloud bases or ceiling, the amount of cover (stated in eighths--1/8 to 4/8 described as scattered; 5/8 to 7/8, broken; and 8/8, overcast), and cloud tops. Several layers of scattered clouds added together may result in a broken or overcast condition. Low clouds impact many battlefield operations, especially the use of smart weapons.
cumulonimbus	Clouds that are large, dense, and towering with cauliflower-like tops. The top portion of the cloud is often flattened into an anvil shape. Cumulonimbus clouds are also known as thunderstorms.
cumulus	Billowy, individual cloud masses that often have flat bases. Bases range from near the surface to 6,500 feet AGL.
density altitude	The height above MSL at which the existing density of the atmosphere would be duplicated in the standard atmosphere; atmospheric density expressed as height according to a standard scale. Extremely important in flight operations.
dew	Water condensed onto grass and other objects near the ground. Occurs when the temperature has fallen below the dewpoint of the surface air (due to radiational cooling during the night) but is still above freezing. If the temperature falls below freezing after dew has formed, the frozen dew is known as white dew.
dewpoint	The temperature to which a given weight of air must be cooled at constant pressure and constant water-vapor content in order for saturation to occur. When this temperature is below 0°C, (32°F) it is sometimes called the frost point.

diurnally	Having a daily cycle.
drizzle	Fairly uniform precipitation composed exclusively of fine drops of water falling very close to one another.
dry-bulb temperature	The temperature measured by the dry bulb of a psychrometer; ambient air temperature.
effective illumination	The level of light available for night operations.
effective wind speed	The combined effect of actual (meteorological) wind and other motion caused by the moving of an object or a person through air. Also caused by moving equipment such as aircraft propellers or rotors.
elevation; station elevation	The measure of height with respect to another point on the earth's surface; usually MSL.
Fahrenheit	A thermometer scale on which the boiling point of water is at 212° and the freezing point is at 32° above zero point. Used primarily in the US.
FALOP	A program implemented in the 1970's to supplement battlefield observations taken by USAF AWS WETMs. FALOP is employed by S2 personnel at maneuver brigades and battalions. The BWK is used by the S2 to make limited measurements of weather conditions. Additionally, the S2 provides estimates of other weather and environmental conditions he observes. His report is encoded and forwarded to the closest WETM.
fall out	The precipitation to earth of particulate matter from a nuclear cloud; also applied to the matter itself, which may or may not be radioactive.
fog	A cloud with its base at or very near the earth's surface.
footcandle (fc)	A unit of illumination equal to 1 lumen ft ⁻² . Full sunlight with zenith sun produces an illuminance of the order of 10,000 fc on a horizontal surface. Full moonlight provides an illuminance of about 0.02 fc. Adequate

	illumination for steady reading is about 10 fc. Close machine work required about 30 to 40 fc.
forecast units	USAF WETMs and centers at higher Army echelons that produce support forecasts for planning and operations.
frost	A feathery deposit of minute ice crystals or grains upon a surface or object, formed directly from vapor in the air; the process by which such ice crystals are formed; any temperature at which frost forms. Frost often forms when the close-lying air is above 0°C (32°F), especially in calm, clear air when radiation or evaporation reduces a surface temperature to or below the freezing point.
frostbite	The freezing or partial freezing of some part of the human body.
frost heaves	Also frost thrusting; frost lifting. The upward or sideways movement of surface soils, rocks, and vegetation through expansion caused by freezing subsurface moisture, soil, and gravel.
gust	Rapid fluctuations in wind speed with a variation of 10 knots or more between peaks and lulls.
hail	Hail is observed precipitation in the form of small balls or pieces of ice (hailstones), falling either separately or agglomerated into irregular lumps. Hail falls during heavy thunderstorms.
high	In meteorology it is synonymous with "area of high pressure" and refers to a maximum of atmospheric pressure in two dimensions--closed isobars in the synoptic surface chart; or a maximum of height (closed contours) in the constant-pressure chart. Since a high is, on the synoptic chart, always associated with anticyclonic circulation, the term is used interchangeably with anticyclone.
humidity	A measure of the water vapor content of air.
hypothermia	Excessive lowering of body temperature generally caused by prolonged exposure to cold or when the body

	has become wet. Hypothermia can occur at temperatures well above freezing as easily as at temperatures below freezing.
icing	In general, any deposit or coating of ice on an object; a mass or sheet of ice formed on the ground surface during the winter by successive freezing of sheets of water that may seep from the ground, a river, or a spring.
instrument flight rules	An aircraft operational term indicating that the weather conditions have deteriorated to the point that navigational instruments on board the plane must be used in flying from one place to another.
inversion (stable) condition	An increase in air temperature with an increase in height. The condition is called stable because there is usually little vertical movement of air.
knot	The unit of speed or distance in the nautical system. One nautical mile per hour. See conversion factors in Appendix P.
lapse (unstable) condition	A decrease in air temperature with an increase in height. The condition is called unstable because it is accompanied by vertical air movement.
light and illumination data	Battle planning requires accurate timing based on available light. Light tables have been computed for any location that tell sunrise, sunset, moonrise, moonset, and moon phase. Illumination is a measure of sunlight, moonlight, starlight, and air glow. Illumination is a critical factor in the considered of NVD, cloud cover, and terrain masking.
low	An area of low pressure referring to a minimum of atmospheric pressure in two dimensions. Since a low is, on a weather chart, always associated with cyclonic circulation, the term is used interchangeably with cyclone.
mesoscale	Smaller scale weather features that exist for minutes or hours. Examples of mesoscale atmospheric phenomena are thunderstorms, tornadoes, and land-sea breezes.

meteorological products	Processed information derived from basic meteorological data which is collectively referred to as meteorological products. Such information can be in the form of forecasts, specific data, or WTDAs. WTDAs may correlate one or more data elements impacting a system with critical values, timing, system limitations, and other modifying factors.
moderate weather impact	A subjective measure of weather conditions impacting a system or operations that require alternative actions to be considered. Moderate impacts limit the effectiveness of the system or operations from 25 to 75 percent.
nimbostratus	A gray or dark massive cloud layer accompanied by continuous rain or snow.
precipitation rates	The measured, or estimated, rate of rainfall or snowfall during a given period. Precipitation rates are essential to predict ground moisture, flooding, river crossings, and other trafficability factors. Precipitation rates also affect visibility.
refractive index	A measure of the amount of "refraction," or bending, of an energy wave (visual light, infrared, radio and others) passing from one density to another in a medium such as air or water. The apparent bending of a stick when placed in a pool of water is an example.
relative humidity	Ratio, usually expressed as a percentage of air's water vapor content, to its water vapor capacity at a given temperature and pressure.
sea state	Also state-of-the-sea. Describes wind-generated waves on the surface of the sea.
seeability	Distance at which a sensor is able to see, to recognize, or to lock onto a target. Seeability is dependent on the condition of the atmosphere, the contrast between the target and the background, the direction and type of illumination, and the characteristics of the sensor.
semidiurnally	A cycle occurring approximately every half day.

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sky conditions	The amount of sky covered by clouds or the amount obscured by surface-based phenomena. This information is derived from standard charts.
slant-range visibility	The distance a pilot can distinguish objects that are both forward and beneath his aircraft. For example, looking down at an angle as he approaches a target or a runway.
sleet	A term sometimes used for ice pellets, a mixture of precipitating rain and snow, or glaze.
snow	Precipitation composed of white or translucent ice crystals, chiefly in complex branched hexagonal form and often agglomerated into snowflakes.
soil trafficability	The capacity of a soil to withstand traffic, especially the traffic of military vehicles.
specific humidity	The ratio of the mass of water vapor to the total mass of air (including water vapor).
state-of-the-ground	A standardized surface observation that describes the condition of the ground surface. Basically, state-of-the-ground is characterized as dry, moist, wet, frozen, and ice or snow covered.
staff weather officer	A USAF AWS officer, qualified in forecasting, that usually commands a WETM. He may be a lieutenant or a colonel depending on the Army unit he is attached to. Some SWOs, assigned to Army commands, serve without a WETM. The SWO, a member of the Army commanders special staff, works under the direction of the G2 or S2.
steering wind	Winds that are winds measured at 50 feet (16 m), although they may extend as high as 2,500 feet. They are used in smoke operations where the moving air is measured far enough above the ground to be free of disturbances caused by local terrain variations. They establish the speed and direction of a smoke cloud. Steering winds also play a role in the direction that weather systems move.

stratocumulus	Clouds having large globular masses or rolls which look like balls of dirty cotton. Stratocumulus form from the breaking up of a stratus layer or from the spreading out of cumulus clouds. Bases range from near the surface to 6,500 feet AGL.
surface observations	Weather and environmental observations measured or estimated on the land or water surface, and usually reflecting surface conditions. Cloud cover is an exception.
surface winds	Wind speed, direction, and gust speeds measured over the land or water. Technically measured at 10 meters above the surface.
synoptic scale	Large-scale atmospheric features that exist for days or weeks. An example of synoptic scale is the analysis of weather fronts, highs, and lows over the continental US.
temperature	A measure of the hotness or coldness of the air near the surface (surface ambient temperature), the ground (surface or ground temperature), or the upper atmosphere (air temperature). Measured by a thermometer or other instrument.
temperature gradient	The change in temperature per unit of distance between one point and another.
temperature-humidity index	An indicator of the effect of temperature and humidity upon individuals. Sometimes called the misery index by television weatherpersons. An example is the WBGT index.
temperature inversion	See inversion condition
thaws	A weather condition occurring when the temperature rises above the freezing point and ice and snow melt.
tidal current	The alternating horizontal movement of water associated with the rise and fall of the tide. In relatively open locations, the direction of tidal currents rotates continuously through 360 degrees diurnally or

	<p>semidiurnally. In coastal regions, the nature of tidal currents is determined by local topography as well.</p>
tide	<p>The periodic rising and falling of the oceans, large lakes, and the atmosphere. It results from the tide-producing forces of the moon and sun acting upon the rotating earth. This disturbance actually propagates as a wave through the atmosphere and through the surface layer of the oceans.</p>
turbulence	<p>A condition of the atmosphere in which air currents vary greatly over short distances. Turbulence may occur at any altitude, and the intensity may vary rapidly over short distances. See wind shear.</p>
twilight	<p>The periods of incomplete darkness following sunset (evening twilight) or preceding sunrise (morning twilight). Twilight is designated as civil, nautical, or astronomical, as the center of the sun travels 6, 12, or 18 degrees below the celestial horizon, respectively. In general, civil twilight precedes nautical twilight by 2 hours.</p>
visual flight rules	<p>In aviation a set of regulations that must be adhered to when piloting in calm, clear weather where the pilot can move from one point to another using ground features for navigational aids.</p>
USAF tactical weather support	<p>As directed by AR 115-10/AFR 105-3, the USAF AWS provides part of the Army's tactical weather support. This includes the collection of surface weather data up to the division command elements and the production of forecasts and climatic data. The Army has the greater role in its own weather support. The Army collects surface weather forward of the division command elements, and all upper air weather data needed to support its tactical operations. Additionally, the Army provides the USAF WETM the communications paths and equipment to pass weather information to the Army users.</p>
visibility	<p>The greatest distance that prominent objects can be seen and identified by the unaided, normal eye. When</p>

NVG or other infrared devices are used to increase visual distance, "seeability" is used instead of visibility.

weather advisory (WA)	A special WETM notice when an established weather condition that could affect operations is occurring or is expected to occur.
weather briefing	Information concerning the current and forecast weather conditions impacting an AO. The SWO, or a member of the WETM or the G2 or S2 may provide weather briefings. Suggested formats are included in Chapter 4.
weather effects	The impacts, favorable or unfavorable, weather conditions have on tactical systems, operations, personnel, and logistics. Weather effects become highly significant information when they can be cross-checked with specific critical values, reaction leadtimes, and other operational considerations. There are always weather effects that will have an impact on systems or operations. There is no such thing as an all-weather system.
weather elements	Weather elements (such as wind speed and temperature) are generally benign. Only when they fall below or exceed certain pre-established thresholds do they have an adverse impact on operations, systems, and personnel. These pre-established thresholds are known as critical values. Critical values change by type of operations, sensitive (or complexity) of systems, and the amount of exposure of personnel to the elements. S2s must know the critical weather values for their unit's operations, systems and personnel and advise the commander and staff when these values are (or will be) reached or exceeded.
weather forecast	A prediction made by USAF WETMs for periods as short as 3 hours to as long as 96 hours for specific AOs and Ais. Forecasts are correlated with WTDA's to provide tailored products for the supported command's planning. The accuracy of a weather forecasts depends on the timeliness, accuracy, and resolution of the data it is taken from. The longer the period of time a forecast covers the less accurate it becomes. Forty-eight to 96-

hour forecasts are considered "outlooks"--or very general forecasts. Beyond 96 hours, climatology is used.

weather forecaster

A USAF AWS officer or NCO trained in meteorology and forecasting. He uses general area forecasts produced by USAF AWS weather centers, and fine tunes them for his own AO. The forecaster need timely, accurate data from the supported unit's AO and AI to do this fine tuning.

weather observer

A USAF AWS officer or NCO trained in meteorology and weather observing. Many AWS NCOs are dual qualified as observers and forecasters and are called weather technicians. The training of an AWS weather observer is technical. S2s are instructed by AWS observers on how to take weather observations. But the observations may fall short of the AWS standard and are, therefore, characterized as "limited."

weather tactical decision aids

These refer to the manual lookup tables and matrices in this manual, or are computer-driven algorithms by which such a product is generated. These tables provide the critical thresholds that effect operations, systems, and personnel adversely. The tables, together with a current forecast, are used to brief the commander and staff.

weather warning (WW)

A special notice from the supporting WETM when an established weather condition of such intensity as to pose a hazard to property or life is occurring or is expected to occur. Protective action must be taken.

weather watch

A special WETM notice alerting the command of the potential for tornadoes, severe thunderstorms, or a winter snow with heavy snow, freezing precipitation, or blizzard conditions.

wet bulb globe temperature index

A measure of heat stress potential. It is calculated by using a formula which considers relative humidity, radiant heat, air temperature, and air movement.

whiteout	Also known as milky weather. A condition in the polar regions in which no object casts a shadow, the horizon becomes indistinguishable, and light-colored objects are very difficult to see. A whiteout occurs when there is complete snow cover, and the clouds are so thick and uniform that light reflected by the snow is about the same intensity as that from the sky.
windchill factors	These factors are revised temperature values based on the effect of wind and temperature combined on exposed skin. This windchill temperature is the effective temperature for troops. The effect of windchill differs individually because of body chemistry, but is an acceptable operating standard.
winds aloft	The flow of air, measured in speed and direction above the surface. There is no distinct demarcation between winds aloft and surface winds, although winds above 100 meters are usually referred to as winds aloft.
wind shear	The rate of change of wind velocity (speed or direction) with distance. Eddies and gusts form in areas of wind shear, thus producing turbulent flying conditions. Wind shear may occur in either the vertical or horizontal plane.
wind speed	The rate of movement of air flow. Wind speed is normally reported in nautical miles per hour, or knots. Wind speed is affected by terrain and obstacles such as buildings and trees.