METEOROLOGICAL SERVICES

1. RESPONSIBLE SERVICE

The State meteorological authority responsible for the service is the Agencia Estatal de Meteorología (AEMET), attached to the Ministerio para la Transición Ecológica y el Reto Demográfico, in application of:

- Ley 21/2003, dated July 7 about Air Safety.
- Real Decreto 186/2008, dated February 8, by which is approved the statute of the Agencia Estatal de Meteorología.

AEMET is the provider of meteorological services in support of air navigation in accordance with the Single European Sky legislation (EC) No 549/2004, (EC) No 550/2004 and (CE) Nº 1070/2009.

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1.1 OBJECTIVE OF THE SERVICE

The objective of this meteorological service is to contribute towards the safety, regularity and efficiency of international air navigation, supplying:

- To operators and flight crews members, the necessary information for pre-flight planning and in-flight replanning, for use by crews before flight departure and when the aircraft is in flight.
- To air traffic services and search and rescue services units, the necessary information for the conduct of their duties.
- To airport management, information about the current or expected weather necessary for the operation of their installations as well as weather warnings, that could adversely affect aircraft on the ground, facilities and services.
- Meteorological observations data and climatological information required by the foregoing users, and those interested in air navigation development, as well as for accident investigation and operational analysis.

1.2 APPLICABLE ICAO DOCUMENTS

The applicable standards, recommended practices and procedures are contained in the following ICAO documents:

	Annex 3	Meteorological Service for International Air Navigation.
	Annex 11	Air Traffic Services.
	Annex 14	Aerodromes.
	Doc. 7030	European (EUR) Regional Supplementary Procedures. Part 4. Meteorology.
	Doc. 7474	Air Navigation Plan-AFI Region, for Canaries and Melilla aerodromes.
	Doc. 7754	Air Navigation Plan-EUR Region, for Iberian Peninsula and Balearic aerodromes.
	Doc. 8400	PANS-ICAO Abbreviations and Codes.
	Doc. 8896	Manual of Aeronautical Meteorological Practices.
	Doc. 9328	Manual of Runway Visual Range Observing and Reporting Practices.

1.3 ICAO DOCUMENTATION ON WHICH THE METEREOLOGICAL SERVICE IS BASED

ICAO Annex 3 (18th edition) - Meteorological Service for the International Air Navigation.

The differences from Part I basic SARPs ICAO Annex 3 are in GEN 1.7: Differences from ICAO standards, recommended practices and procedures.

2. AREA OF RESPONSIBILITY

The meteorological service for air navigation is responsible for FIR/UIR Madrid, Barcelona and Canarias.

3. OBSERVATIONS AND METEOROLOGICAL REPORTS

3.1 AERODROME METEOROLOGICAL OBSERVATIONS

3.1.1 OBSERVATION EQUIPMENT

Equipment for the measurement of wind, cloud ceiling, runway visual range, pressure, temperature and humidity as well as some observatories at runway threshold or specific positions at those aerodromes where the aircraft operations or meteorological are situations require it, is in service.

The wind speed and direction, temperature, dew point and pressure measurement equipment has indicators at the air traffic services (TWR, APP, etc) and at the meteorological offices.

The indicators display the following information:

- Instantaneous wind speed.
- Instantaneous wind direction.
- Last two minutes mean wind: mean wind direction and mean speed expressed in knots.
- Last ten minutes mean wind.
- Last ten minutes maximum and minimum wind speed. The extreme speeds of the variation interval are taken instead, after a strong discontinuity.
- Last ten minutes maximum and minimum wind direction. The minimum direction corresponds to the initial extreme of the wind variation sector during the last ten minutes, and the maximum direction corresponds to the final one. The extreme directions of the variation interval are taken instead, after a strong discontinuity.
- The present temperature expressed in degrees Celsius.
- Dew point temperature expressed in degrees Celsius.
- QNH and QFE.

Transmissometers are used to assess the runway visual range in approach and landing operations at categories II and III and most of category I aerodromes. The information is supplied in accordance with Standards and Recommended Practices of ICAO Annex 3.

Runway visual range assessments are reported in metres throughout periods when either the prevailing visibility or the runway visual range is less than 1500 m.

In those aerodromes where cloud ceiling measurement equipment is installed the readings are available at the meteorological office, TWR and APP.

The runway threshold is used as reference level for the assessment of QFE.

3.1.2 INTEGRATED SYSTEM

In those aerodromes where integrated systems (SI) are installed, besides the above mentioned-information, other data useful for aeronautical purposes are available. These data are the following:

- Wind difference: An alarm is displayed when the difference between the wind direction at the two thresholds is greater than 60° with a speed bigger than 10 knots, or when the difference between these speeds is greater than 10 knots,
- two minutes mean wind vector components: cross and longitudinal components in knots, as well as the cross or longitudinal wind direction,

- RVR: last minute mean runway visual range in metres (interval from 50 to 2000 m),
- last ten minutes maximum and minimum RVR. When one of the ten RVR values measured during the last ten minutes differs by more than 50 m or more than 20% from the mean value, whichever is the higher, the maximum and minimum mean of one minute are displayed,
- last ten minutes mean RVR. The last ten minutes mean value and the trend, this referring to the last five minutes with respect to the first five,
- last METAR issued.

At those aerodromes with runways equipped for categories II and III instrument approach and landing operations, and most runways equipped for category I instrument approach and landing operations (see GEN 3.5 item 3.5 SYSTEMS AND PLACES OF MONITORING, REPORTING AND TYPES OF WARNING FOR EACH AERODROME), automatic equipment to remotely monitor and indicate the various meteorological parameters is installed: surface wind, RVR, cloud ceiling, etc. These devices are integrated systems for the collection, processing, dissemination and real-time presentation of the different meteorological parameters.

When an integrated automatic system is used for dissemination / display of meteorological information, the system is capable of accepting the manual insertion of data covering those meteorological elements that cannot be observed by automatic means: amount, type and height of cloud base, visibility, significant weather, etc.

At the aerodromes where cloud ceiling measurement equipment is not available the data will be obtained by direct observation.

3.2 AERODROME OBSERVATION REPORTS

3.2.1 INTERPRETATION AND USE OF THE OBSERVATION REPORTS

Owing to the variability of meteorological elements in space and time, to the limitations of observing techniques and to the limitations caused by the definitions of some of the elements, the specific value of some of the elements given in a report shall be understood by the recipient to be the best approximation to the actual conditions at the time of observation.

3.2.2 METAR REPORTS

METAR is the name of a routine aerodrome observation report.

METAR are issued in accordance with templates of ICAO Annex 3 and are disseminated in the METAR code form and SPECI code form (FM15 and FM16), prescribed by the World Meteorological Organization. They include, as additional information, some elements in accordance with the Air Navigation Plan-EUR Region. These reports are transmitted to OPMET data banks and to other centres, which are specified in the Air Navigation Plan-EUR Region.

In the METAR, observations of:

- wind surface, air and dew point temperature are representative of the runway configuration;
- visibility are representative of the aerodrome and are reported in metres,
- current weather and clouds are representative of the aerodrome and its vicinity,
- air and dew point temperature are measured in degrees Celsius.

QNH in METAR is reported in steps of whole hectopascals, using four digits. Any observed value which does not fit the reporting scale in use is rounded down to the nearest step.

CAVOK is used when the following conditions occur simultaneously at the time of observation:

- prevailing visibility (1) (or minimum visibility when the prevailing visibility cannot be determined because of a fast fluctuation) 10 km or more and the criteria for inclusion of minimum visibility are not met,
- no cloud below 1500 m (5000 ft) or below the highest minimum sector altitude, whichever is greater;
- no cumulonimbus (CB) or towering cumulus (TCU); and
- no significant meteorological phenomena relevant to aviation.

(1) Visibility (for aeronautical purposes): is the greater of:

1. The greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognized when observed against a bright background;

2. The greatest distance at which lights in the vicinity of 1000 candelas can be seen and identified against an unlit background.

Prevailing visibility: The greatest visibility value, observed in accordance with the definition of "visibility", which is reached within at least half the horizon circle or within at least half of the surface of the aerodrome. These areas could comprise contiguous or non-contiguous sectors.

In Spain, the information contained in the RMK of the METAR will be distributed internationally.

3.2.2.1 METAR AUTO REPORTS

The weather information included in the METAR AUTO reports issued from Spain is identical to that of traditional METAR (semi-automatic) in certain groups of the message, while in other groups, it has the specific characteristics of automatic observation. The message coding is the same (METAR code form) with the exception of the abbreviations AUTO (automatic message), UP (unknown precipitation), NCD (no cloud detected) which can only be used in automatic messages, and the use of slashes when a mandatory group cannot be observed automatically or the sensors are out of service.

The on-site supervised AUTO METAR is a METAR report that has been produced, issued and distributed completely automatically, and whose observations (generated from information provided by sensors/automated systems) have been verified by meteorological personnel at the actual aeronautical location where the service is being provided.

Identical information in METAR AUTO: the information included in the Wind, RVR, Air Temperature, Dew Point and QNH groups of METAR AUTO are identical to that which would be included in the equivalent semi-automatic METAR report.

DIFFERENT INFORMATION IN METAR AUTO:

Visibility: Prevailing visibility is evaluated in the sensor installation area. Prevailing visibility is not representative of the whole aerodrome in case of heterogeneous obscuration phenomena. In case of a single visibility sensor, no minimum visibility is reported.

Present weather: The following phenomena are not coded: VA (volcanic ash), SA (sand), DU (dust), PO (dust devil), SQ (squall), FC (X), SS (sandstorm) and DS (duststorm). The following descriptors are not used: MI (shallow), DR (low drifting) and BL (blowing). The abbreviation UP (unknown precipitation) is used to report on precipitation which cannot be classified automatically. The descriptor VC (in the vicinity) is only used to code storms in the vicinity (between 8 and 25 km from the ARP).

Clouds: the presence of clouds and cloud base height are evaluated in a vertical direction by the sensors. Cloudiness and cloud cover may not be representative of the whole aerodrome in situations of stationary and/or low cloud cover. Sets of /// are used when cloud height, cover and type could not be determined automatically. Currently, it is not possible to determine convective cloud base height or cover. The abbreviation NCD (no cloud detected) is used to indicate that the automatic system was unable to determine the presence of clouds within the considered period. Cumulonimbus (CB) cloud presence is automatically determined from the lightning detection network. The presence of towering cumulus (TCU) clouds is determined from the characterization of precipitation as a shower.

Recent weather: it is determined based on the comparison with the last routine report issued (METAR or METAR AUTO). It may include information on storms that occurred within the period between reports.

INFORMATION NOT AVAILABLE IN METAR AUTO:

Windshear: The METAR AUTO report does not include this supplementary information.

TREND: The METAR AUTO report does not include a TREND forecast.

SPECI AUTO: These special reports are not issued during the METAR AUTO operation period.

3.2.3 SPECI REPORTS

SPECI is the name given to a special aerodrome report. SPECI are issued for visibility, significant weather, height of the ceiling and amount of the cloud layers, using the following criteria:

1. When the predominant visibility is improving and changes to, or passes, one or more of the following values, or when the visibility is worsening and passes one or more of the following values:
   - 800, 1500 o 3000 m;
   - 5000 m, when there are a considerable number of flights operating under visual flight rules.

2. When any of the following weather phenomena should develop, cease or change in intensity:
   - freezing precipitation;
   - moderate or heavy precipitation (including showers);
   - thunderstorm with precipitation;
   - dust storm, sandstorm;
   - funnel clouds (tornado or waterspout).
3. When any of the following weather phenomena should develop or cease:
   - freezing fog;
   - dust, sand or snow whirls near surface;
   - dust, sand or snow whirls aloft;
   - thunderstorm without precipitation;
   - squall.
4. When the height of the lowest cloud layer of BKN or OVC extent is rising and changes to, or passes, one or more of the following values, or when the height of the lowest cloud layer of BKN or OVC extent is falling and passes one or more of the following values:
   - 30, 60, 150 o 300 m (100, 200, 500 or 1000 ft) and
   - 450 m (1500 ft), in cases where a significant number of flights are taking place in accordance with visual flight rules.
5. When the amount of cloud in a layer below 450 m (1500 ft) changes:
   - from SCT or less to BKN or OVC; or
   - from BKN or OVC to SCT or less.
6. When convective clouds (CB or TCU) of extent SCT, BKN or OVC develop, or when convective cloud disappears completely.
7. When the sky is darkening and the vertical visibility is improving and changes to, or passes, one or more of the following values, or when the vertical visibility is worsening and passes one or more of the following values:
   - 30, 60, 150 o 300 m (100, 200, 500 o 1000 ft).
8. Any other criterion based upon the aerodrome use minima agreed between the EMAe and the operators interested.

Local criteria:

AIRPORT	Visibility
LANZAROTE/César Manrique Lanzarote (GCRR)	When the minimum visibility is improving, changes to or passes through one or more of the following values; or when the minimum visibility is deteriorating, and passes through one or more of the following values: 800 or 1500 m.
AIRPORT	**Wind**
MURCIA/Alcantarilla (LERI)	When the variation from the mean surface wind speed (gusts) has changed by 10 kt or more from that given in the latest report, the mean speed before or after the change being 10 kt or more.

AIRPORT	Visibility
SABADELL (LELL)	When minimum visibility is improving, changes to, or passes the following value; or when minimum visibility is deteriorating and passes the following value: 1500 m. When minimum visibility is improving, changes to, or passes the following value; or when minimum visibility is deteriorating and passes the following value: 800 m. When the height of the lowest BKN or OVC cloud layer is rising and changes to or passes one or more of the following values, or when the height of the lowest BKN or OVC cloud layer is falling and passes 1500 ft When the height of the lowest BKN or OVC cloud layer is rising and changes to or passes one or more of the following values, or when the height of the lowest BKN or OVC cloud layer is falling and passes 600 ft.
AIRPORT	Visibility
TENERIFE NORTE/Ciudad de La Laguna (GCXO)	When the minimum visibility is improving, changes to or passes through one or more of the following values; or when the minimum visibility is deteriorating, and passes through one or more of the following values: 800 or 1500 m.

REMARKS:

1. SPECI representing a deterioration in conditions shall be issued immediately after the observation.
2. When a deterioration in one weather element is accompanied by an improvement in another element, a single SPECI shall be issued; it shall then be treated as a deterioration report, and therefore be issued immediately.
3. A SPECI representing an improvement in conditions should be disseminated only after the improvement has been maintained for 10 minutes; it should be amended before dissemination, if necessary, to indicate the conditions prevailing at the end of that 10 minute period.

3.3 AERODROME FORECAST REPORT

3.3.1 INTERPRETATION AND USE OF THE AERODROME FORECAST REPORTS

Owing to the variability of meteorological elements in space and time, to limitations of forecasting techniques and to limitations caused by the definitions of some of the elements, the specific value of any of the elements given in a report shall be understood by the recipient to be the most probable value an element may take during the forecast period. Similarly, when the time of occurrence or change of an element is given in a forecast, this time shall be understood to be the most probable time.

The issue of a new forecast, such as a TAF, shall be understood to supersede automatically any forecast of the same type previously issued for the same place and period of validity, or part thereof.

3.3.2 TREND REPORT

The TREND is a tendency forecast for landing. It consists of a concise statement of the expected significant changes in the aerodrome meteorological conditions. to be appended at the end of the METAR o SPECI report. It is valid for 2 hours from the time of the METAR or SPECI of which it forms part. When no change is expected to occur, this shall be indicated by the term "NOSIG".

TREND reports are issued in accordance with the templates of ICAO Annex 3, and are coded in METAR FM15-XIII and SPECI FM16-XIII code forms, as prescribed by the World Meteorological Organization.

Criteria for TREND issuance different from NOSIG:

1. Surface wind: the TREND forecast shall indicate the changes in the surface wind which involve:
    1. A change in the mean wind direction of 60° or more, the mean speed before and/or after the change being 5 m/s (10 kt) or more;
    2. A change in the mean wind speed of 5 m/s (10 kt) or more;
    3. Changes in the wind through values of operational significance. The OMAe head establishes the threshold values in consultation with the ATS authority and concerned operators, taking into account changes in the wind which would:
        - require a change in runways in use;

- indicate that the runway tail wind and cross wind components will change through values representing the standard operating range for average aircraft operating at the aerodrome.

2. When the prevailing visibility is expected to improve and change to or pass through one or more of the following values, or when the visibility is expected to deteriorate and pass through one or more of the following values:
   - 150, 350, 600, 800, 1500 or 3000 m
   - 5000 m, when a significant number of flights are conducted in accordance with the visual flight rules.
3. Significant weather
   1. The TREND forecast shall indicate the expected onset, cessation or change in intensity of one or more, up to a maximum of three, of the following weather phenomena: freezing precipitation; moderate or heavy precipitation (including showers); thunderstorm with precipitation; duststorm; sandstorm; other weather phenomena detailed in the ICAO Annex 3, Appendix 3, 4.4.2.3, as agreed between ATS authorities and the operators concerned.
   2. The TREND forecast shall indicate the expected onset or cessation of one or more, up to a maximum of three, of the following weather phenomena: freezing fog; low drifting dust, sand or snow; blowing dust, sand or snow; thunderstorm without precipitation; squall; funnel cloud(s) (tornado or waterspout).
   3. The expected end of occurrence of these weather phenomena is indicated by the abbreviation: NSW.
4. Clouds
   1. When the height of the base of a cloud layer of BKN or OVC extent is expected to lift and change to or pass through one or more of the following values, or when that height is expected to lower, and pass through one or more of the following values: 30, 60, 150, 300 and 450 m (100, 200, 500, 1000 and 1500 ft);
   2. When the amount of a layer or mass of cloud below 450 m (1500 ft) is forecast to change as follows:
      - from SCT or less increasing to BKN or OVC; or
      - from BKN or OVC decreasing to SCT or less.
   3. When the appearance or disappearance of cumulonimbus clouds is forecast (CB).
   4. When no clouds significant to operations are forecast, and CAVOK is not appropriate, the abbreviation NSC shall be used.
5. Vertical Visibility When the sky is expected to remain or become obscured, and vertical visibility observations are available at the aerodrome, and the vertical visibility is forecast to improve and change to or pass through one or more of the following values: 30, 60, 150 or 300 m (100, 200, 500 or 1000 ft).
6. Criteria for the indication of changes based on local aerodrome operating minima, shall be used as agreed between the OMAe head and concerned operators.

Local criteria:

AIRPORT	Wind
MADRID/Adolfo Suárez Madrid-Barajas (LEMD)	Direction: • 1.1.- With the airport in North configuration, it is forecast that the tail component in the runway direction of the mean wind speed and/or wind gusts shall change to 10 kt or more 32 and/or 36 on thresholds. • 1.2.- With the airport in South configuration, it is forecast that the tail component in the runway direction of the mean wind speed and/or wind gusts shall change to 10 kt or less 32 and/or 36 on thresholds.
	Significant weather
	When fog (FG) associated to the prevailing visibility is forecast to begin or end.
AIRPORT	Wind
MURCIA/Alcantarilla (LERI)	Changes in the gusts of 10 kt or more, the mean speed before or after the change being 10 kt or more..

3.3.3 TAF REPORTS

Report on the prevailing conditions expected at an aerodrome, including changes considered of operational significance to aircraft.

The TAF is an aerodrome forecast issued in accordance with the template of ICAO Annex 3, in code form TAF (FM 51), as is prescribed by the World Meteorological Organization. TAF reports are disseminated to international OPMET data banks and centres designated in the Air Navigation Plan-EUR Region. In Spain TAF have a validity period of 24 or 30 hours.

Only one TAF per aerodrome will be realised according to AD 2: Meteorological service provided. TAFs will be issued half an hour before their period of validity begins, every 6 hours. The number of TAFs will be that necessary to cover the operational needs of the aerodrome.

The Aeronautical Meteorological Office (OMAe) preparing the TAF will monitor the forecasts made constantly until the aerodrome closing time, issuing, when necessary, amendments without delay.

TAF cancellation

According to the ICAO regulations, a TAF is cancelled when it cannot be reviewed continuously. The OMAe may cancel the TAF in force at the time of airport closure.

In the case of cancellation of TAF, the closing time of an airport means the UTC time at which it is scheduled to close for operations, plus the PPR.

Criteria for including change groups or for preparation of amendments to the TAF

1. Surface wind:
   - Wind direction: when is to be a change of 60º or more is forecast, and the mean speed before and/or after the change is to be 10 kt or more;
   - Wind speed: when there are forecast changes in the mean wind speed of 10 kt or more; or changes in wind gusts of 10 kt or more, the mean speed before or after the change being 15 kt or more;
   - Forecast changes in the wind through values of operational significance. The EMAe head will establish the threshold values in consultation with the ATS authority and operators concerned.
2. Visibility
   - When the visibility is expected to improve and change to or pass through one or more of the following values, or when the visibility is forecast to deteriorate and pass through one or more of the following values:
     - 150, 350, 600, 800, 1500 or 3000 m.
     - 5000 m when a significant number of flights are operated in accordance with visual flight rules.
3. Forecast significant weather
   - When any of the following weather phenomena are forecast to begin, end or change in intensity: freezing fog; freezing precipitation; moderate or heavy precipitation (including showers); duststorm; sandstorm; thunderstorm;
   - When any of the following weather phenomena are forecast to begin or end: low drifting dust, sand or snow; blowing dust, sand or snow; squall; funnel cloud(s) (tornado or waterspout).
   - The expected end of occurrence of the weather phenomena is indicated by the abbreviation: NSW.
4. Clouds
   - When the height of the base of a layer or mass of cloud of BKN or OVC extent is forecast to lift and change to or pass through one or more of the following values, or when such a layer or mass is forecast to lower and pass through one or more of the following values:
     - 30, 60, 150 or 300 m (100, 200, 500 or 1000 ft); or
     - 450 m (1500 ft), in cases where significant number of flights are operated in accordance with the visual flight rule
   - When the amount of a layer or mass of cloud below 450 m (1500 ft) is forecast to change as follows:
     - from SCT or less increasing to BKN or OVC; or
     - from BKN or OVC decreasing to SCT or less.
   - When cumulonimbus clouds are forecast to develop or dissipate (CB);

5. Vertical Visibility

- When the vertical visibility is forecasted to improve, and change to or pass through one or more of the following values, or when the visibility is forecast to deteriorate and pass through one or more of the following values:
  - 30, 60, 150 or 300 m (100, 200, 500 or 1000 ft).

6. Other criteria: Other criteria based on the local aerodrome operating minima may be used, when agreed between the OMAe head and operators concerned.

AIRPORT	Wind
MADRID/Adolfo Suárez Madrid-Barajas (LEMD)	Direction: • 1.1.- With the airport in North configuration, it is forecast that the tail component in the runway direction of the mean wind media speed and/or wind gusts shall change to 10 kt or more 32 and/or 36 on thresholds. • 1.2.- With the airport in South configuration, it is forecast that the tail component in the runway direction of the mean wind media speed and wind gusts shall change to 10 kt or less 32 and/or 36 on thresholds.
	Significant weather
	When fog (FG) associated to the prevailing visibility is forecast to begin or end.
AIRPORT	Wind
MURCIA/Alcantarilla (LERI)	Changes in the gusts of 10 kt or more, the mean speed before or after the change being 10 kt or more.

3.4 WEATHER WARNINGS

3.4.1 AERODROME WARNINGS

Aerodrome warnings notify about the occurrence (real or expected) on potentially adverse meteorological phenomena in the airport environment (aircraft on ground and the aerodrome facilities and services).

Users interested in receiving aerodrome warnings by e-mail in their airport offices, may request this from the responsible EMAe/OMD.

An aerodrome warning is issued when one of the weather phenomena of Table 1 is observed or is forecast and, in the case of wind gusts and accumulated precipitation, when the threshold values of Annex I are reached.

If the phenomenon is forecast, the warning can be issued a maximum of 24 hours before the beginning of its validity period.

Table 1

(1) PHENOMENON	(2) TEMPLATE
Mean wind speed with maximum wind gust.	SFC WSPD nn[n]KT MAX nn[n]
Mean surface wind (direction and speed) and maximum wind gust.	SFC WIND nnn/nn[n]KT MAX nn[n]
Accumulated precipitation in 1 or 12 hours.	RAINFALL IN 1HR MORE THAN nnMM RAINFALL IN 12HR MORE THAN nn[n]MM
Thunderstorm.	[HVY] TS
(3) Squall.	SQ
Hail.	GR
(4) Frost.	FROST T MSnnC

(1) PHENOMENON	(2) TEMPLATE
(5) Snow (including the expected or observed snow accumulation).	[PROB30, PROB40, PROB70][HVY] SN nnCM
Freezing precipitation.	[HVY] FZRA or [HVY] FZDZ
Hoar frost or white rime.	RIME
Sandstorm.	[HVY] SS
Duststorm.	[HVY] DS
Swirling sand or dust.	SA (sand), DU (dust)
(6) Volcanic ash [volcanic ash deposition].	VA [DEPO]
Tsunami.	TSUNAMI
Toxic chemicals substances.	TOX CHEM

NOTES:

1. Only on phenomenon will be included in each warning.
2. Brackets [ ] indicate that the information contained within is used when required.
3. Squall (SQ): Squall (SQ): Strong wind that arises suddenly and usually lasts at least one minute. It differs from wind gusts in its longer duration. The sudden increase in wind speed is 16 kt, and the speed increases to 22 kt or more and it lasts at least one minute. Squalls are often associated with large cumulonimbus clouds and vigorous convective activity, extending several kilometres horizontally and several thousand feet vertically.
4. FROST will always be given followed by the temperatura in degrees celsius. Negative temperature beyond FROST is preceded by MS. T is the ICAO abbreviation for temperature and C for degrees Celsius. Only forecast warnings are given for frost.
5. For snow (SN): this should always include a thickness in cm. If snow is not expected to accumulate on the ground, thickness will be indicated as 00CM, probabilities may be used:
   - PROB30: indicates a probability greater than or equal to 30% and less than 40%.
   - PROB40: indicates a probability greater than or equal to 40% and less than 50%.
   - PROB70: indicates a probability greater than or equal to 70%.
   - Without PROB: indicates a probability greater than equal to 50%.

   Remarks:

   1. The probability refers to the phenomenon nor and to the thickness of the deposit.
   2. . The probability of snow occurrence will be used for all aerodromes, according to the sections indicated above.
   3. In the case of snow (SN), if the temperature is forecast to be less than 0° C, a frost warning will also be issued.
6. Volcanic ash: when it is forecast/observed that the ash will be deposited/is becoming deposited on the surface of the aerodrome the DEPO descriptor will be added.

FORMAT AND CONTENTS OF AERODROME WARNINGS

Message heading:

WWSP60 o WWCR60	CCCC	DDHHMM
1.	2.	3.

1. Aerodrome warning identifier. SP is used for aerodromes of the spanish mainland, Baleares and Melilla; and CR for canarias aerodromes.
2. Location indicator of the aerodrome originating the warnings;
3. Date, hour and minutes (UTC) of message issue.

Message contents:

CCCC	AD WRNG n[n]	VALID nnnnnn/nnnnnn [PROB30, PROB40, PROB70] [HVY] (fenómeno MET) (observado o pronosticado) (intensidad)
1.	2.	3.

1. Aerodrome location indicator (CCCC) : ICAO indicator of the aerodrome originating the warning. The same as the warning heading;
2. Message identification: AD WRNG n[n], where
   - AD WRNG: Type of message;
   - n: sequence number starting at 0001 UTC of the day the warning is issued; the numbering will be different for each aerodrome. Below the number 10 only a single digit will be included in the serial number.
3. Period of validity: VALID nnnnnn/nnnnnn;

- Start and end of the period of validity: day, hour and minutes in UTC;
- Probabilities: PROB30, PROB40, PROB70 referring to snow (SN); these will be used when there is an agreement with the aerodrome.
- HVY qualifier (heavy): this will be used when necessary, with the following phenomena: storm (TS), snow (SN), rain and freezing drizzle (FZRA and FZDZ), sandstorm (SS) and dust storm (DS).
- Meteorological phenomena:

  Each warning includes only one phenomenon from the table 1;

- Observed or predicted phenomenon: indication of whether the meteorological phenomenon is observed and is expected to continue, or is forecast. The following ICAO abbreviations will be used:
  - OBS AT nnnnZ: Indicates that the phenomenon was observed at nnnnZ;
  - FCST: Indicates that the phenomenon is forecast;

One warning will be issued for each observed phenomenon when the phenomenon has not been forecast (except in cases of frost, in which only the forecast warnings will be issued).

- Changes in intensity:

  In this group, the forecast changes in the intensity of the phenomenon will be reported, whenever applicable.

  The following abbrevations will be used: INTSF; Intensifying, WKN:Weakening, NC: Without changes.

Cancellation:

Aerodrome warning is cancelled when the conditions that originated it no longer hold or when its content must be updated to reflect the changes included in the following section.

Update:

An update of a warning is accomplished by cancelling it and issuing a new one, as long as it is the same phenomena and its period of validity has not yet expired.

ANNEX I

THRESHOLD VALUES FOR AERODROME WARNINGS

AERODROME/HELIPORT	Wind (kt) MAXIMUM GUST Greater than or equal to:	RAINFALL IN 1 HOUR (mm)	RAINFALL IN 12 HOURS (mm)
A CORUÑA	43	30	60
ALBACETE	40	30	60
ALGECIRAS	43	30	60
ALICANTE/Alicante-Elche Miguel Hernández	43	30	100
ALMERÍA	43	30	80
ANDORRA-LA SEU D'URGELL	30	30	60
ASTURIAS	43	30	60
BADAJOZ/Talavera La Real	43	30	60
BARCELONA/Josep Tarradellas Barcelona-El Prat	30	30	80
BILBAO	43	30	60
BURGOS/Villafría	43	15	30
CÁDIZ/Rota (BN)	Transversal component 25 / 43	30	60
CASTELLÓN	43	30	60
CIUDAD REAL	43	30	60
CIUDAD REAL/Almagro (BH)	30	30	60
CÓRDOBA	43	30	80
El HIERRO	42	30	60
FUERTEVENTURA	49 (1° Box) 40 (2°, 3°, 4°)	30	60
GIRONA	43	30	80
GRAN CANARIA	49 (1° Box) 40 (2°, 3°, 4°)	30	60
GRANADA/Armilla (BA)	43	30	60
GRANADA/Federico García Lorca. Granada-Jaén	38	30	80
HUESCA/Pirineos	43	30	40
IBIZA	30	15	60
JEREZ	43	30	80
LA GOMERA	33	30	60
LA PALMA	40 (1°, 2°) 15 (3°, 4°)	30	60
LANZAROTE/César Manrique Lanzarote	49 (1° Box) 40 (2°, 3°, 4°)	30	60

AERODROME/HELIPORT	Wind (kt) MAXIMUM GUST Greater than or equal to:	RAINFALL IN 1 HOUR (mm)	RAINFALL IN 12 HOURS (mm)
LEÓN	43	15	30
LLEIDA/Alguaire	43	30	60
LOGROÑO	43	30	60
LOGROÑO/Agoncillo (BH)	43	30	60
MADRID/Adolfo Suárez Madrid-Barajas	25	30	60
MADRID/Colmenar Viejo (BH)	30	30	60
MADRID/Cuatro Vientos	30	30	60
MADRID/Getafe	30	30	60
MADRID/Torrejón	30	15	60
MÁLAGA/Costa del Sol	40	15	40
MALLORCA/Son Bonet	30	15	60
MELILLA	43	30	80
MENORCA	30	15	60
MURCIA/Aeropuerto de la Región de Murcia	43	30	60
MURCIA/Alcantarilla (BA)	35	30	60
MURCIA/San Javier	43	30	80
PALMA DE MALLORCA	25 (2°, 4°) 30 (1°, 3°)	15	60
PAMPLONA	43	30	40
REUS	43	30	80
SABADELL	30	30	80
SALAMANCA	43	15	30
SAN SEBASTIÁN	35 (1°, 2°) 45 (3°, 4°)	30	60
SANTANDER/Seve Ballesteros-Santander	43	30	60
SANTIAGO/Rosalía de Castro	43	30	60
SEVILLA	43	30	80
SEVILLA/El Copero	43	30	80
SEVILLA/Morón (BA)	30/50	30	60
TENERIFE NORTE/Ciudad de La Laguna	43	30	60
TENERIFE SUR	40	30	60

AERODROME/HELIPORT	Wind (kt) MAXIMUM GUST Greater than or equal to:	RAINFALL IN 1 HOUR (mm)	RAINFALL IN 12 HOURS (mm)
TERUEL	43	30	60
VALENCIA	43	30	60
VALLADOLID	43	15	30
VIGO	43	30	60
VITORIA	35	30	60
ZARAGOZA	43	15	40

3.4.2 AUTOMATIC WARNINGS OF LIGHTNING DETECTED AT THE AERODROME

Users interested in receiving aerodrome lightning warnings by e-mail in their airport offices, may request this from the Head of the Aerodrome EMAe.

Lightning alerts are issued by e-mail, in bulletin format and in the Spanish language.

They are generated automatically with data from the AEMET lightning detection network, and may be classified into four types, depending on the ARP: prior alert (25 km); alert (8 km), maximum alert (5 km) and situation normal.

Users interested in receiving these alerts may apply to the corresponding EMAe.

Example:

AGENCIA ESTATAL DE METEOROLOGÍA
WWSP61 LEMH 232044
Avisos de rayos en el área del Aeropuerto de Menorca
23 DE MAYO DE 2005, 20:44 UTC. Comienzo del estado de ALERTA MÁXIMA (5 km)

3.4.3 AUTOMATIC WARNINGS OF FORECAST STORMS AT THE AERODROME.

They are generated automatically with data from the AEMET lightning detection network, radar and fields of numerical models.

They are sent by e-mail, in bulletin format and in the Spanish language.

Users interested in receiving these alerts may apply to the corresponding EMAe.

Example:

AGENCIA ESTATAL DE METEOROLOGÍA
WWSP62 ACT LEBL 05032415:00 VAL 20m UNA MOV SE/NW
TORMENTA PREVISTA para el área del aeropuerto de Barcelona/Josep Tarradellas Barcelona-El Prat.
MENSAJE emitido a las 15:00 UTC del 24 de Marzo de 2005.
Se detecta tormenta que posiblemente afectará a la zona del aeropuerto en los próximos 20 minutos, situada al SE, desplazándose hacia el NW.

3.5 OBSERVATION SYSTEMS AND PLACES, REPORTS AND WARNING TYPES FOR EACH AERODROME

The observations made (type, frequency and schedule), the observation systems and their locations at the aerodromes are listed below:

AERODROME METEOROLOGICAL OBSERVATIONS AND REPORTS

Name of station Location indication	Type & frequency of observation Automatic observing equipment	Types of MET reports & availabilty of trend forescasts	Hours of operation	Observation system & site(s)	Climatological information
A CORUÑA LECO	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	HO H24	Complete observation station. Anemometer at TDZ 21 (2) and 03 (2). RVR at TDZ 21, 03 and MP, cloud ceiling at TDZ 21. Remote controlled thermohygrograph at TDZ 21. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
ALBACETE LEAB	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	H24 H24	Complete observation station. Anemometer at TDZ 09 (2) and 27 (2). RVR, cloud ceiling at TDZ 09 and 27. Remote controlled thermohygrograph at TDZ 09. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
ALGECIRAS LEAG	AUTO, h	METAR, WARNINGS	H24	Automatic observation station, located close to the apron. Anemometer, ceilometer, thermohygrometer, visibility sensor, lightning sensor, current weather sonsor, barometer.	NIL
ALICANTE/ Alicante-Elche Miguel Hernández LEAL	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	H24 H24	Complete observation station. Anemometer at TDZ 10 (2) and 28 (2). RVR at TDZ 10 and 28. Thermohygrograph at TDZ 10 and 28. Cloud ceiling at TDZ 28 and before the Precision Approach Lighting System at THR 10. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
ALMERÍA LEAM	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Complete observation station. Anemometer at TDZ 25 (2) and 07 (2). RVR at TDZ 25 and 07. Remote controlled thermohygrograph at TDZ 25 (2) and 07 (1). Cloud ceiling and current weather sensor at TDZ 25. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
ANDORRA-LA SEU D'URGELL LESU	MANUAL, h	METAR, SPECI, WARNINGS	HO	Anemometer at THR 03 (2) and 21 (2). Thermohygrograph at THR 03. RVR at THR 03. Cloud ceiling at THR 03. Barotransmitters at THR 03 (2). Integrated system.	Aeronautical climatological AVBL.
ASTURIAS LEAS	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	HO H24	Complete observation station. Anemometer at TDZ 29 (2) and 11 (2). RVR at TDZ 29, 11 and MP. Cloud ceiling at TDZ 11 and at VOR area. Remote controlled thermohygrograph at TDZ 29. Barotransmitters (2). Integrated system.	Aeronautical climatological AVBL.

Name of station Location indication	Type & frequency of observation Automatic observing equipment	Types of MET reports & availabilty of trend forescasts	Hours of operation	Observation system & site(s)	Climatological information
BADAJOZ/Talavera la Real LEBZ	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Complete observation station. Anemometer at TDZ 31 (2) and 13 (2). RVR at TDZ 31 and 13. Cloud ceiling at TDZ 31. Remote controlled thermohygrograph at TDZ 31. Barotransmitter (2).	Aeronautical climatological AVBL.
BARCELONA/Josep Tarradellas Barcelona-El Prat LEBL	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	H24 H24	Complete observation station. Anemometer at TDZ 06R (2), 24L/R (2), 02 (2) and 20 (2), and 250 m before DTHR 06L (2), 130 m south of the extension of the runway centre line. RVR at TDZ 06R, 24L/R, 02 and runway MP (06R/24L and 06L/24R) and 250 m before DTHR 06L, 130 m south of the extension of the runway centre line. Cloud ceiling: at TDZ 24L and 02, 250 m before DTHR 06, 130 m south of the extension of the runway centre line 850 m before THR 06R (aligned with the runway centre line) and 355 m before THR 24R (aligned with the runway centre line). Remote controlled thermohygrograph at TDZ 06R and 20, and 250 m before DTHR 06L, 130 m south of the extension of the runway centre line. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
BILBAO LEBB	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	HO H24	Complete observation station. Anemometer at TDZ 30 (2), 12 (2), 10 (2) and at displaced THR 28 (2). RVR at TDZ 30, 12 and MP. Cloud ceiling: one aligned with RWY 30 approach lighting system, one closed to RESA RWY 30 beside LOC equipment and one at 4 kms from THR 12 on its approach direction. Remote controlled thermohygrograph at TDZ 12. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
BURGOS/Villafría LEBG	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Complete observation station. Anemometer at TDZ 22 (2), 04 (2) and MP (2). Cloud ceiling at TDZ 22 and RVR at TDZ 22 and 04. Remote controlled thermohygrograph at TDZ 22. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
CÁDIZ/Rota LERT (*)	MANUAL, h	METAR, SPECI, WARNINGS, TREND	H24	Complete observation station. Anemometer, RVR, cloud ceiling and remote controlled thermohygrograph at THR 10, THR 28 and MP. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.

Name of station Location indication	Type & frequency of observation Automatic observing equipment	Types of MET reports & availabilty of trend forescasts	Hours of operation	Observation system & site(s)	Climatological information
CASTELLÓN LECH	AUTO, h	METAR, SPECI, WARNINGS	H24	Complete observation station. Anemometer at TDZ 06 and 24. RVR at TDZ 06. Cloud ceiling at TDZ 06 . Remote controlled thermohygrograph at TDZ 06. Current weather sensor at TDZ 06. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
CEUTA GECE	AUTO, h	METAR	H24	Automatic observation station located close to the apron. Anemometer, ceilometer, thermohygrometer, RVR, barometer, pluviometer.	NIL
CIUDAD REAL LERL	MANUAL, h	METAR, SPECI	HO	Complete observation station. Anemometer at TDZ 28 (2) and 10 (2). RVR at TDZ 10, TDZ 28 and MP. Cloud ceiling in approach (to 900 m from THR 10) Remote controlled thermohygrograph at TDZ 10. Barotransmitters (2). Integrated system.	NIL
CIUDAD REAL/ Almagro LEAO (*)	MANUAL, h	METAR, SPECI, WARNINGS.	HO	Complete observation station. Anemometer, RVR and cloud ceiling at THR 27. Remote controlled thermohygrograph at THR 27. Integrated system. Barotransmitters (2). AWOS near THR 27 station.	Aeronautical climatological AVBL.
CÓRDOBA LEBA	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Complete observation station. Anemometer at TDZ 21 (2) and TDZ 03 (2). RVR at TDZ 21. Cloud ceiling at TDZ 21. Remote controlled thermohygrograph at TDZ 21. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
EL HIERRO GCHI	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Observation station. Anemometer at TDZ 34 (2) and 16 (2). Remote controlled thermohygrograph at TDZ 34 and 16. RVR at TDZ 34. Barotransmitters (2). Cloud ceiling at TDZ 34. Integrated system.	Aeronautical climatological AVBL.
FUERTEVENTURA GCFV	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Complete observation station. Anemometer at TDZ 01 (2) and 19 (2). RVR at TDZ 01 and 19. Cloud ceiling at TDZ 01. Remote controlled thermohygrograph at TDZ 01. Barotransmitters (2). Integrated system.	Aeronautical climatological AVBL.

Name of station Location indication	Type & frequency of observation Automatic observing equipment	Types of MET reports & availabilty of trend forescasts	Hours of operation	Observation system & site(s)	Climatological information
GIRONA LEGE	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	H24 H24	Complete observation station. Anemometer at TDZ 19 (2) and 01 (2). RVR at TDZ 19, MP and TDZ 01 and ceilometer at runway threshold 19. Remote controlled thermohygrograph at TDZ 19 and 01. Barotransmitters (2). Integrated system.	Aeronautical climatological AVBL.
GRAN CANARIA GCLP	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	H24 H24	Complete observation station. Anemometer at TDZ 03L/R(2) and 21L/R (2). RVR at TDZ 03L/R and 21L/R. Cloud ceiling at TDZ 03L/R. Remote controlled thermohygrograph at TDZ 03L/R. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
GRANADA/Armilla (B.A.) LEGA (*)	MANUAL, h	METAR, SPECI, WARNINGS	HO	Complete observation station. Anemometer at THR 36 and 18. Cloud ceiling at THR 36. Remote controlled thermohygrograph at THR 36. Barotransmitters (1).	Aeronautical climatological AVBL.
GRANADA/Federico García Lorca. Granada-Jaén LEGR	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Complete observation station. Anemometer at TDZ 09 (2) and 27 (2). RVR and cloud ceiling at TDZ 09 and 27. Remote controlled thermohygrograph at TDZ 09 and 27. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
HUESCA/Pirineos LEHC	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Complete observation station. Anemometer at TDZ 30L (2) and 12R (2) and THR 30R (2). RVR at TDZ 30L and 12R. Thermohygrograph and cloud ceiling TDZ 30L. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
IBIZA LEIB	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	HO H24	Complete observation station. Anemometer at TDZ 24 (2) and 06 (2). Visibilimeter/current weather sensor at TDZ 24 and 06. Cloud ceiling at TDZ 24 and 06. Remote controlled thermohygrograph at TDZ 24 and 06. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
JEREZ LEJR	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Complete observation station. Anemometer at TDZ 20 (2) and 02 (2). RVR and cloud ceiling at TDZ 20. Remote controlled thermohygrograph at TDZ 20 and 02. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.

Name of station Location indication	Type & frequency of observation Automatic observing equipment	Types of MET reports & availabilty of trend forescasts	Hours of operation	Observation system & site(s)	Climatological information
LA GOMERA GCGM	MANUAL, h MANUAL, T	METAR, SPECI, WARNINGS SYNOP	HO BTN 0600-1800	Observation station near TDZ 27. Anemometer at TDZ 09 (2), 27 (2) and MP. Thermohygrograph at TDZ 09. Cloud ceiling at TDZ 09. Visibilimeter/Current weather sensor at TDZ 09 Integrated system.	Aeronautical climatological AVBL.
LA PALMA GCLA	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Observation station. Anemometer at TDZ 18 (2) and THR 36 (2). Cloud ceiling at THR 36. RVR at TDZ 18. Remote controlled thermohygrograph at TDZ 18 and THR 36. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
LANZAROTE/César Manrique Lanzarote GCRR	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Observation station. Anemometer at TDZ 03 (2) and 21 (2). Cloud ceiling and RVR at TDZ 03. Remote controlled thermohygrograph at THR 03 and 21. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
LEÓN LELN	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Complete observation station. Anemometer at TDZ 23 (2) and TDZ 05 (2). RVR at TDZ 05 and 23. Cloud ceiling at TDZ 23. Remote controlled thermohygrograph at TDZ 23. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
LLEIDA/Alguaire LEDA	MANUAL, h	METAR, SPECI, WARNINGS	HO	Complete observation station. Anemometer at TDZ 31 (2) and 13 (2). Cloud ceiling at TDZ 31, RVR at TDZ 31. Remote controlled thermohygrograph at TDZ 31. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
LOGROÑO LELO (B.H.) (*) LERJ	MANUAL, h SEMIAUTOMÁTICO, H	MET INFO ONLY ISSUED WITH LELO INDICATOR)	HO H24	Complete observation station. Anemometer at TDZ 29 (2), TDZ 11 (2) and military apron (2). Barotransmitters (2). RVR at TDZ 29. Thermohygrograph at TDZ 29. Cloud ceiling at TDZ 29 and military apron. Integrated system.	Aeronautical climatological AVBL.

Name of station Location indication	Type & frequency of observation Automatic observing equipment	Types of MET reports & availabilty of trend forescasts	Hours of operation	Observation system & site(s)	Climatological information
MADRID/Adolfo Suárez Madrid-Barajas LEMD	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	H24 H24	Complete observation station. Anemometer at TDZ 14R (2), 14L (2), 32R (2), 32L (2), 18L (2) 36R (2), 18R (2) and 36L (2). RVR at TDZ 14R, 32L, MP (14R/32L), 14L, 32R, MP (14L/32R), 18L, 36R, MP (18L/36R), 18R, 36L and MP (18R/36L). Cloud ceiling at runway centre line extension 18L, 18R, 32L and 32R. Remote controlled thermohygrograph at TDZ 32L and 36L. Barotransmitters (2). Diffusometer at apron T4 (4). Integrated system.	Aeronautical climatological AVBL.
MADRID/Colmenar Viejo (B.H.) LECV (*)	MANUAL, h	METAR, SPECI, WARNINGS	HO	Complete observation station. Anemometer at THR 21 and TWR. Cloud ceiling at THR 21. Remote controlled thermohygrograph at THR 21. Barotransmitters (2). Integrated system.	Aeronautical climatological AVBL.
MADRID/C. Vientos LECU/LEVS	MANUAL, h MANUAL, T	METAR, SPECI, WARNINGS SYNOP	HO BTN 0600-1800	Complete observation station. Anemometers (2) and remote controlled thermohygrograph at 624 m FM THR 27 (natural soil) and 237 m FM RCL. Anemometers (2), thermohygrograph and cloud ceiling at 39 m FM TWY M-11 and 475 m FM RCL. Anemometers (2) at 762 m FM THR 09 (natural soil) and 255 m FM RCL. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
MADRID/Getafe LEGT	MANUAL, h MANUAL, T	METAR, SPECI, WARNINGS SYNOP	HO BTN 0600-1800	Complete observation station. Anemometer at THR 05 and near to the MP. RVR and cloud ceiling at THR 05. Remote controlled thermohygrograph at THR 23. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
MADRID/Torrejón LETO	MANUAL, h	METAR, SPECI, WARNINGS, TREND	H24	Complete observation station. Anemometer at THR 04 (2), MP (2) and THR 22 (2). RVR at THR 04, 22 and MP. Cloud ceiling at THR 22. Remote controlled thermohygrograph at THR 22. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.

Name of station Location indication	Type & frequency of observation Automatic observing equipment	Types of MET reports & availabilty of trend forescasts	Hours of operation	Observation system & site(s)	Climatological information
MÁLAGA/Costa del Sol LEMG	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	H24 H24	Complete observation station. Anemometer at TDZ 12 (2), 13 (2), 30 (2) and 31 (2). RVR at TDZ 12, 13, 30 and 31 and MP 12/30 and 13/31. Cloud ceiling at runway centre line, within the approach lighting system,420 m before THR 31 (1). Cloud ceiling at TDZ 12, 13 and 30. Remote controlled thermohygrograph at THR 12 and 31. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
MALLORCA/Son Bonet LESB	AUTO, h	METAR, WARNINGS	H24	Automatic observation station located close to the apron. Anemometer, cloud ceiling, thermohygrometer, RVR, , barometer, pluviometer.	NIL
MELILLA GEML	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Complete observation station. Anemometer at TDZ 15 (1) and 33 (2). Cloud ceiling at TDZ 33 and FAMET base. Remote controlled thermohygrograph at TDZ 33. Visibilimeter and current weather sensor. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
MELILLA B.H. GEHM (*)				AWII station near the apron. AWOS. Anemometer on lattice mast (1). Cloud ceiling (1) and remote controlled thermohygrograph. Barotransmitters (1).	Aeronautical climatological AVBL.
MENORCA LEMH	MANUAL, h SEMIAUTOMÁTICO, H	ETAR, SPECI, WARNINGS SYNOP	HO H24	Complete observation station. Anemometer at TDZ 01 (2) and 19 (2). Visibilimeter/current weather sensor at TDZ 01 and 19. Cloud ceiling at TDZ 01 and 19. Thermohygrometer at TDZ 01 and 19. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
MURCIA/Aeropuerto de la Región de Murcia LEMI	MANUAL, h	METAR, SPECI, WARNINGS	HO	Complete observation station. Anemometer en TDZ 23 (2) and 05 (2). RVR at TDZ 23 and 05 and cloud ceiling at TDZ 23. Time present sensor at TDZ 23. Remote controlled thermohygrograph at TDZ 23 and 05. Integrated system. Barotransmitters (2).	NIL

Name of station Location indication	Type & frequency of observation Automatic observing equipment	Types of MET reports & availabilty of trend forescasts	Hours of operation	Observation system & site(s)	Climatological information
MURCIA/ Alcantarilla (BA) LERI (*)	MANUAL, h MANUAL, T	METAR, SPECI, WARNINGS, TREND SYNOP	HO BTN 0600-1800	Complete observation station. Anemometer at THR 07 (2) and 25 (2). Ambient light, visibility, time present and cloud ceiling sensors at THR 07. Remote controlled thermohygrograph at THR 07. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
MURCIA/San Javier LELC	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	HO H24	Complete observation station. Anemometer at THR 04 L (2), THR 22 R (2), THR 04 R (2) and THR 22 L (2). RVR at THR 04 R and THR 22 L. Cloud ceiling at THR 04 R and 22 R. Remote controlled thermohygrograph at THR 04 R. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
PALMA DE MALLORCA LEPA/LESJ	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	H24 H24	Complete observation station. Anemometer in TDZ 24R (2), 06L (2), 24L (2) and 06R (2). RVR in TDZ 24R, 06L, PM 24R/06L, THR 06R, 24L and PM 24L/06R. RVR in THR 06R. Cloud ceiling on runway centre line, within the approach lighting system, 1200m from THR 24R (1) and 24L (1). Cloud ceiling outside RESA not on runway centre line, 600 m from THR 06L. Thermohygrograph at a distance in TDZ 06L and TDZ 24R. Integrated system. Barotransmitter (2).	Aeronautical climatological AVBL.
PAMPLONA LEPP	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Complete observation station. Anemometer at TDZ 33 (2) and 15 (2). RVR at TDZ 15 and 33. Cloud ceiling at TDZ 15 and at 40 m from RESA 33. Remote controlled thermohygrograph at TDZ 15. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
REUS LERS	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Complete observation station. Anemometer at TDZ 07 (2) and 25 (2). RVR at TDZ 25. Cloud ceiling at TDZ 25. Thermohygrograph at TDZ 25. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
SABADELL LELL	MANUAL, h	METAR, SPECI, WARNINGS	HO	Observation station. Anemometers at TDZ 31 (2) and at THR 13 (2). Cloud ceiling at TDZ 31. Thermohygrograph at TDZ 31. Integrated system. Barotransmitters (2). RVR and current weather at TDZ 31.	Aeronautical climatological AVBL.

Name of station Location indication	Type & frequency of observation Automatic observing equipment	Types of MET reports & availabilty of trend forecasts	Hours of operation	Observation system & site(s)	Climatological information
SALAMANCA LESA	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Complete automatic weather station. Anemometer at RWY 21 and RWY 03 aiming point (2). RVR and ceilometer at RWY 21 aiming point. Digital thermohigrometer at RWY 21 aiming point. Digital barometer (2). Meteorological Integrated System.	Aeronautical climatological AVBL.
SAN SEBASTIÁN LESO	MANUAL, h MANUAL, T	METAR, SPECI, WARNINGS SYNOP	HO BTN 0600-1800	Complete observation station. Anemometer at TDZ 22 (2) and 04 (2). RVR at TDZ 22 and 04. A cloud ceiling at area of cape Higuer and another near to VOR SSN. Remote controlled thermohygrograph at TDZ 22. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
SANTANDER/ Seve Ballesteros-Santander LEXJ	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	HO H24	Complete observation station. Anemometer at TDZ 29 (2) and 11 (2). RVR at TDZ 29 and 11. Cloud ceiling at TDZ 29. Remote controlled thermohygrograph at TDZ 29. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
SANTIAGO/Rosalía de Castro LEST	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	H24 H24	Complete observation station. Anemometer at TDZ 17 (2) and 35 (2). RVR at TDZ 17, 35 and MP. Cloud ceiling at LOC RWY 17 (1) and at 1130 m from THR17 and 16 m from centre line of RWY 17 to right in approach direction (1). Remote controlled thermohygrograph at TDZ 17 and 35. Integrated system. Barotransmitters (2). .	Aeronautical climatological AVBL.
SEVILLA LEZL	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	HO H24	Complete observation station. Anemometer at TDZ 27 (2) and 09 (2). RVR and cloud ceiling at TDZ 27 and 09. Remote controlled thermohygrograph at TDZ 09 and 27. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
SEVILLA/El Copero (BH) LEEC (*)	MANUAL, h	METAR, SPECI, WARNINGS	HO	Automatic observation station at THR 03. Anemometer, ceilometer, hermohygrometer, visibility sensor, current weather sensor, pluviometer, barometer.	Aeronautical climatological AVBL.

Name of station Location indication	Type & frequency of observation Automatic observing equipment	Types of MET reports & availabilty of trend forescasts	Hours of operation	Observation system & site(s)	Climatological information
SEVILLA/Morón (BA) LEMO (*)	MANUAL, h MANUAL, T	METAR, SPECI, WARNINGS, TREND SYNOP	H24 H24	Complete observation station. Anemometer, cloud ceiling and RVR at TDZ 02 and TDZ 20. Remote controlled thermohygrograph at TDZ 02 and TDZ 20. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
TENERIFE NORTE/ Ciudad de La Laguna GCXO	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	HO H24	Complete observation station. Anemometer at TDZ 30 (2), 12 (2) and in front of FAMET (Fuerzas Aeromóviles del Ejército de Tierra) base (2). RVR at TDZ 30, 12 and MP. Cloud ceiling at TDZ 30 and TDZ 12. Remote controlled thermohygrograph at TDZ 30 and 12. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
TENERIFE SUR GCTS	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	H24 H24	Observation station. Anemometer at TDZ 07 (2) and 25 (2). Cloud ceiling at TDZ 07. Remote controlled thermohygrograph at TDZ 07 and 25. RVR at TDZ 07 and 25. Integrated system. Barotransmitters (2). LLWAS.	Aeronautical climatological AVBL.
TERUEL LETL	AUTO, h	METAR, WARNINGS	H24	Observation station. Anemometer at TDZ 36 and TDZ 18. Remote controlled thermohygrograph at TDZ 36. Cloud ceiling at TDZ 36. Visibilimeter/current weather sensor at TDZ 36. Integrated system. Barotransmitter.	Aeronautical climatological AVBL.
VALENCIA LEVC	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	H24 H24	Complete observation station. Anemometer at TDZ 30 (2) and 12 (2). Visibilimeter at TDZ 30 and 12. Cloud ceiling and remote controlled thermohygrograph at TDZ 30 and 12. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
VALENCIA/Bétera (B.H.) LEBT	AUTO, h	METAR	H24	Complete observation station. Anemometer at THR 09 and close to apron. RVR at THR 09. Remote controlled thermohygrograph at THR 09. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.

Name of station Location indication	Type & frequency of observation Automatic observing equipment	Types of MET reports & availabilty of trend forescasts	Hours of operation	Observation system & site(s)	Climatological information
VALLADOLID/ Villanubla LEVD	MANUAL, h MANUAL, T	METAR, SPECI, TREND,WARNINGS SYNOP	HO BTN 0600-1800	Complete observation station. Anemometer at TDZ 23 (2) and 05 (2). RVR at TDZ 05, 23 and MP. Cloud ceiling at TDZ 05 and at 1400 m from THR 23 in approach direction. Remote controlled thermohygrograph at TDZ 23. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
VIGO LEVX	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS, TREND SYNOP	H24 H24	Complete observation station. Anemometer at TDZ 01 (2) and 19 (2). RVR at TDZ 01, TDZ 19 and MP. Cloud celing at TDZ 01, TDZ 19 and at middle old marker. Remote controlled thermohygrograph at TDZ 19. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
VITORIA LEVT	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	H24 H24	Complete observation station. Anemometer at TDZ 04 (2) and 22 (2). RVR at TDZ 04, 22 and MP. Remote controlled thermohygrograph at TDZ 04. Cloud ceiling at TDZ 04. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.
ZARAGOZA LEZG	MANUAL, h SEMIAUTOMÁTICO, H	METAR, SPECI, WARNINGS SYNOP	H24 H24	Complete observation station. Anemometer at TDZ 30R (2), 12R (2), 30L (2), and 12L (2). RVR at TDZ 30R, 30L, 12R, 12L and MP 12L/30R. Cloud ceiling at TDZ 30R and TDZ 12R. Remote controlled thermohygrograph at TDZ 30R and 30L. Integrated system. Barotransmitters (2).	Aeronautical climatological AVBL.

(*) Exclusively for military use.

ABBREVIATIONS:

H:	Hourly.
h:	Half-hourly.
H6:	Every 6 hours.
T:	Tri-hourly.
H24:	Observations available 24 hours.
HO:	Observations available to satisfy operational requirements.

HD:	Observations made at least during the operational hours of aerodrome.
S:	SPECI issued.
W:	Aerodrome warnings.
MP:	Midpoint.
RC:	Runway intersection.
THR:	Runway threshold.
HA:	Helicopter Apron.
AWOS:	Automated Weather Observation System.
LLWAS:	Low Level Wind Shear Alert System.

Observation station: station that carries out wind, visibility, present significant weather, cloud amount, cloud ceiling, air and dew point temperatures, observations.

Complete observation station: station that carries out wind, visibility, present significant weather, clouds amount, air temperature, dew point, clouds ceiling and RVR observations.

3.6 AREA METEOROLOGICAL REPORTS

3.6.1 GAMET MESSAGES

This is an area forecast for flights below FL150 in a Flight Information Region (FIR) or in a sub-area thereof. It is issued every 6 hours and the period of validity is 6 hours.

If the forecast event does not ocuur, an amendment to the forecast will be issued (GAMET AMD).

GAMET for area 1 (located to the North of the 39ºN parallel) FIR Madrid (LECM), area 2 (located to the South of the 39ºN parallel) FIR Madrid (LECM), FIR Barcelona (LECB) and subarea ISLANDS FIR Canarias (GCCC) (Latitude 26º30'N - 30º30'N; Longitude 012º00'W - 020º00'W) are prepared and issued.

GAMET reports are published in accordance with IACO Annex 3.

Hours of issue (UTC)	Validity periods (UTC)	FIR or sub-area thereof
2300-0000	0300-0900	LECM (Areas 1 and 2), LECB and GCCC "Sub-area Islands"
0500-0600	0900-1500	LECM (Areas 1 and 2), LECB and GCCC "Sub-area Islands"
1100-1200	1500-2100	LECM (Areas 1 and 2), LECB and GCCC "Sub-area Islands"
1700-1800	2100-0300	LECM (Areas 1 and 2), LECB and GCCC "Sub-area Islands"

3.6.2 SIGNIFICANT WEATHER MAPS AT LOW LEVELS (SWL) FOR THE IBERIAN PENINSULA, BALEARIC ISLANDS AND CANARY ISLANDS

- Horizontal limits:
  Latitude: 35ºN 45ºN Longitude: 10ºW 05ºE; (for the Iberian Peninsula and Balearic Islands);
  Latitude 26º30'N - 30º30'N Longitude 12º00'W - 20º00'W (for the Canary Islands "Sub-area Islands")
- Vertical limits: from surface up to FL150;
- The SWL map is issued every six hours, with validity hours 0000, 0600, 1200 and 1800.
- Fronts, pressure centres, freezing level and state of the sea, are valid for HH (hour of validity of the map). The cloudiness and the significant phenomena are valid from HH-3 to HH+3.

Information:

1. En-route significant weather phenomena hazardous for low-level flights. Top and base of layer affected are indicated for all

phenomena forecast above the surface up to FL150.

2. Information about clouds which includes:
   - BKN and OVC cloud areas forecast and cloudiness type if known (ST, SC, CU, AS, AC and NB).
   - Cumulonimbus (CB) and towering cumulus (TCU) forecast with the descriptors ISOL, OCNL, FRQ, OBSC, EMBD.previstos con los descriptores ISOL, OCNL, FRQ, OBSC, EMBD.
3. Widespread areas of mean surface wind speed exceeding 30 kt.
4. Widespread areas of surface visibility below 5000 m. Symbols V1 and V5 are used:
   - V1: Visibility < 1000 m;
   - V5: 1000 m < Visibility < 5000 m
5. Pressure centres and fronts and their expected movements.
6. Freezing height at fixed points.
7. State of the sea: height of waves, in metres, and surface temperature, in degrees Celsius, at fixed points.
8. Information about volcanic eruptions.

3.6.3 WIND AND TEMPERATURE MAPS FOR THE IBERIAN PENINSULA, BALEARIC ISLANDS AND CANARY ISLANDS

With the data obtained from numeric models, every 12 hours wind and temperature forecasts are issued automatically (mosaics of four maps of the Iberian Peninsula and around, and of the Canary Islands), covering H+6, H+12, H+18 and H+24 at levels FL020, FL050, FL100, FL150, FL180 and FL300.

4. SERVICE TYPES

4.1 SERVICES PROVIDED BY AERONAUTICAL METEOROGICAL STATION (EMAE)

The EMAe, together with the Aerodrome Meteorological Office (OMAe), are the meteorological offices associated with the control tower and, in the case that the aerodrome has one, with the approach control office. It provides these units with the meteorological information necessary to carry out their duties.

The staff of the EMAe will use the Spanish language.

At aerodromes with a limited number of operational hours per day, the operating schedule for the associated meteorological station and for the meteorological office should at least be that which is needed to meet the operational requirements for the aerodrome.

4.1.1 METEOROLOGICAL INFORMATION AVAILABLE AT THE EMAE

4.1.1.1 Aerodrome data

Wind direction and velocity (instantaneous, two-minute and ten-minute mean, maximum and minimum); air and dew point temperatures; humidity and pressure (QNH and QFE of the runways). In the majority of aerodromes, wind components, cloud ceiling and runway visibility obtained from runway stations can also be accessed (minimum, maximum and mean RVR).

4.1.1.2 Alphanumeric information

METAR (SA), SPECI (SP), TAF (FC and FT) and their amendments; SIGMET (WS), volcanic ash SIGMET (WV) and tropical cyclones SIGMET (WC); volcanic ash (FV) and tropical cyclones warnings (FK), GAMET (FASP or FACR) and AIRMET (WASP or WACR) for the Iberian Peninsula, Balearic Islands and for Canary Islands "Sub-area Islands"; take-off forecasts (on request); temperature forecasts below 0ºC; observed aerodrome warnings and storms forecasts; detected lightning warnings and forecasted; wind shear warnings (when available); soundings from the localities in the table published in AIP ENR 5.3-1: WEATHER STATIONS WHICH CONDUCT RADIOSONDES.

Meteorological aeronautical products (PAM): information for different flight levels and certain points, given by latitude and longitude, of a series of direct meteorological parameters (geopotential height, wind, temperature, etc) and derived data (instability indexes, cloudiness, dew point, etc.) with analysis and predictions for 6, 12, 24, 36 and 48 hours.

4.1.1.3 Graphical information:

- Aeronautical charts: En-route predictions about meteorological conditions related to wind and temperature, direction and intensity

and the maximum wind level, tropopause level and significant weather that covers the following ICAO aerial navigational areas and regions:

1. Iberian Peninsula, Balearic Islands and Canary Islands: significant weather maps from the surface up to FL150. Wind and temperature at the flight levels FL20, FL50, FL100, FL150, FL180 and FL300.
2. EUR Region: significant weather maps, tropopause and maximum-wind FL100-450. Wind and temperature FL50, FL80, FL100, FL140, FL180, FL210, FL240, FL270, FL300, FL320, FL340, FL360, FL390, FL410, FL450, FL480 and FL530.
3. North Atlantic Region (H): significant weather maps, tropopause and maximum wind. FL250-630. Wind and temperature FL50, FL80, FL100, FL140, FL180, FL210, FL240, FL270, FL300, FL320, FL340, FL360, FL390, FL410, FL450, FL480 and FL530.
4. Europe-South America Region (B): significant weather maps, tropopause and maximum wind. FL250-630. Wind and temperature FL50, FL80, FL100, FL140, FL180, FL210, FL240, FL270, FL300, FL320, FL340, FL360, FL390, FL410, FL450, FL480 and FL530.
5. Europe-Africa Region (C): significant weather maps, tropopause and maximum wind FL250-630. Wind and temperature FL50, FL80, FL100, FL140, FL180, FL210, FL240, FL270, FL300, FL320, FL340, FL360, FL390, FL410, FL450, FL480 and FL530.
6. Europe-Asia region (G): significant weather maps, tropopause and maximum wind FL250-630. Wind and temperature FL50, FL80, FL100, FL140, FL180, FL210, FL240, FL270, FL300, FL320, FL340, FL360, FL390, FL410, FL450, FL480 and FL530.
7. Middle East (MID): significant weather maps, tropopause and maximum wind FL100-450. Wind and temperature FL50, FL80, FL100, FL140, FL180, FL210, FL240, FL270, FL300, FL320, FL340, FL360, FL390, FL410, FL450, FL480 and FL530.

- H+12, H+24, H+48 and H+72 Surface Forecast Maps: The graphical information provided shall consist of maps of fixed time for the flight levels above specified, shall be provided as soon as it is available, but at least three hours before flight planning.

4.1.1.4 Satellite images and weather radar information

Satellite images can be obtained of the globe and infrared, visible and air mass images of Europe, North Africa and Northeast Atlantic, as well as radar reflectivity images of the Iberian Peninsula and the Balearic and Canary Islands.

4.1.1.5 Reference documentation

MET guide (describing the encoding and content of the different aeronautical products of observation and prediction); meteorological reference documentation; EUR OPMET CATALOGUE; ICAO abbreviations and codes, etc.

4.1.1.6 Take-off forecasts

The EMAe can provide, on request from operators and crew members, take-off forecasts. The forecast must include a period of time, and must be requested at least three hours before the start of that period.

The forecasts for take-off will be prepared by the meteorological office designated by the meteorological authority concerned. The revision would then have to be undertaken by the meteorological office responsible for preparing them (ICAO Annex 3).

4.1.2 ADDITIONAL INFORMATION

The meteorological services provided at the aerodromes, as well as the telephone and reports generated by the aeronautical meteorological main offices, are summarized in item 11 of each section of part AD 2 in the AIP.

4.1.3 INFORMATION REGISTER

In those aerodromes where map copies, topographies and meteorological report lists are supplied the pilot in command, or person authorized thereby, and the meteorological officer on duty shall acknowledge the receipt of the flight documentation and updated information facilitated at the last moment by signing in the supplied information register book.

4.1.4 PROVISION OF INFORMATION

This information is usually stored in electronic data files and provided in forms and formats established in accordance with international standards of the International Civil Aviation Organization (ICAO), World Meteorological Organization (WMO) and the national requirements for aviation, and it is kept at least for 30 days, counting from the issue date. This information is available to users upon request for surveys or aeronautical investigations and, for these purposes, it will be retained until the survey or investigation has been completed.

4.2 AERODROME METEOROLOGICAL OFFICE (OMAE)

These are those aeronautical meteorological offices, associated to control towers (TWR) and approach (APP), which are responsible

for the preparation of the TAF and TREND aeronautical forecasts and aerodrome warnings, as well as for supplying plain language information by telephone or other means to associated TWR and APP wishing to complete the information received from the aeronautical meteorological station (EMAe or in the Aeronautical Meteorological Self-service (AMA).

List of Aeronautical Meteorological Stations (EMAe) and Aerodrome Meteorological Offices (OMAe) associated with towers (TWR) and approach control offices (APP):

EMAe	OMAe	TWR	APP
A CORUÑA TEL:+34-981 134 647	SANTANDER TEL: +34-942 392 464	A CORUÑA	SANTIAGO
ALBACETE TEL: +34-967 556 107	MADRID TEL: +34-915 045 807	ALBACETE	ALBACETE
ALICANTE/Alicante-Elche Miguel Hernández TEL: +34-966 919 215	VALENCIA TEL: OMAe: +34-963 690 750; OVM: +34-961 868 862	ALICANTE	ALICANTE
ALMERÍA TEL: +34-950 290 000	SEVILLA TEL: +34-954 462 030; +34-954 460 699	ALMERIA	ALMERIA
ANDORRA-LA SEU D'URGELL TEL:+34-973 350 582	VALENCIA TEL: +34-963 690 750	LA SEU D'URGELL	BARCELONA
ASTURIAS TEL: +34-985 127 566	SANTANDER TEL: +34-942 393 353	ASTURIAS	ASTURIAS
BADAJOZ TEL: +34-924 209 632	SEVILLA TEL: +34-954 462 030; +34-954 460 699	BADAJOZ	TALAVERA
BARCELONA/Josep Tarradellas Barcelona-El Prat TEL: +34-932 983 812	VALENCIA TEL: OMAe: +34-963 690 750; OVM: +34-961 868 862	BARCELONA	BARCELONA
BILBAO TEL: +34-944 869 901	SANTANDER TEL: +34-942 392 464	BILBAO	BILBAO
BURGOS/Villafría TEL: +34-947 480 727	MADRID TEL: +34-915 045 807	BURGOS	–
CÁDIZ/Rota TEL: +34-956 827 048	SEVILLA TEL: +34-954 462 030; +34-954 460 699	ROTA	SEVILLA
CASTELLÓN TEL: +34-964 578 600, ext: 2007	VALENCIA TEL: OMAe: +34-963 690 750; OVM: +34-961 868 862	CASTELLON	–
CIUDAD REAL TEL: +34-926 838 038	MADRID TEL: +34-915 045 807	CIUDAD REAL	–
CIUDAD REAL/Almagro TEL: +34-926 262 357	MADRID TEL: +34-915 045 807	ALMAGRO	–
CÓRDOBA TEL: +34-957 214 113	SEVILLA TEL: +34-954 462 030; +34-954 460 699	CORDOBA	–
EL HIERRO TEL: +34-922 551 004	LAS PALMAS TEL: +34-928 430 603	HIERRO	GRAN CANARIA

EMAe	OMAe	TWR	APP
FUERTEVENTURA TEL: +34-928 530 239	LAS PALMAS TEL: +34-928 430 603	FUERTEVENTURA	GRAN CANARIA
GIRONA TEL: +34-972 186 645	VALENCIA TEL: OMAe: +34-963 690 750, OVM: +34-961 868 862	GIRONA	GIRONA
GRAN CANARIA TEL: +34-928 579 917	LAS PALMAS TEL: +34-928 430 603	GRAN CANARIA	GRAN CANARIA
GRANADA/Armilla TEL: +34-958 218 684	SEVILLA TEL: +34-954 462 030; +34-954 460 699	ARMILLA	–
GRANADA/Federico Garcia Lorca Granada-Jaén TEL: +34-958 446 428	SEVILLA TEL: +34-954 462 030; +34-954 460 699	GRANADA	GRANADA
HUESCA/Pirineos TEL: +34-974 280 287	VALENCIA TEL: +34-963 690 750	HUESCA	–
IBIZA TEL: +34-971 809 149	VALENCIA TEL: OMAe: +34-963 690 750; OVM: +34-961 868 862	IBIZA	IBIZA
JEREZ TEL: +34-956 150 069	SEVILLA TEL: +34-954 462 030; +34-954 460 699	JEREZ	JEREZ
LA GOMERA TEL: +34-922 873 019	LAS PALMAS TEL: +34-928 430 603	LA GOMERA	–
LA PALMA TEL: +34-922 428 006	LAS PALMAS TEL: +34-928 430 603	LA PALMA	GRAN CANARIA
LANZAROTE/César Manrique Lanzarote TEL: +34-928 821 897	LAS PALMAS TEL: +34-928 430 603	LANZAROTE	GRAN CANARIA
LEÓN TEL: +34-987 300 326	MADRID TEL: +34-915 045 807	LEON	LEON
LLEIDA/Alguaire TEL: +34-973 179 500	VALENCIA TEL: OMAe: +34-963 690 750; OVM: +34-961 868 862	LLEIDA	BARCELONA
LOGROÑO TEL: +34-941 279 416	MADRID TEL: +34-915 045 807	LOGRONO	–
MADRID/Adolfo Suárez Madrid-Barajas TEL: +34-913 055 782	MADRID TEL: +34-915 045 807	BARAJAS	MADRID
MADRID/Colmenar Viejo TEL: +34-918 465 360	MADRID TEL: +34-915 045 807	COLMENAR	MADRID
MADRID/Cuatro Vientos TEL: +34-916 493 066	MADRID TEL: +34-915 045 807	CUATRO VIENTOS	–
MADRID/Getafe TEL: +34-917 798 280	MADRID TEL: +34-915 045 807	MADRID/GETAFE	MADRID
MADRID/Torrejón TEL: +34-916 275 209	MADRID TEL: +34-915 045 807	MADRID/TORREJON	MADRID

EMAe	OMAe	TWR	APP
MÁLAGA/Costa del Sol TEL: +34-952 048 890	SEVILLA TEL: +34-954 462 030; +34-954 460 699	MALAGA	MALAGA
MELILLA TEL: +34-952 698 619; +34-952 674 416	SEVILLA TEL: +34-954 462 030; +34-954 460 699	MELILLA	–
MENORCA TEL: +34 971 354 845	VALENCIA TEL: OMAe: +34-963 690 750; OVM: +34-961 868 862	MENORCA	MENORCA
MURCIA/Aeropuerto de la Región de Murcia TEL: +34-968 855 995	SEVILLA TEL: +34-954 462 030; +34-954 460 699	MURCIA	SAN JAVIER
MURCIA/Alcantarilla TEL: +34-968 397 415	SEVILLA TEL: +34-954 462 030; +34-954 460 699	ALCANTARILLA	SAN JAVIER
MURCIA/San Javier TEL: +34-968 189 121	SEVILLA TEL: +34-954 462 030; +34-954 460 699	SAN JAVIER	SAN JAVIER
PALMA DE MALLORCA TEL: +34-971 789 319	VALENCIA TEL: OMAe: +34-963 690 750; OVM: +34-961 868 862	PALMA	PALMA
PAMPLONA TEL: +34-948 312 784	SANTANDER TEL: +34-942 393 353	PAMPLONA	–
REUS TEL: +34-977 770 406	VALENCIA TEL: OMAe: +34-963 690 750; OVM: +34-961 868 862	REUS	REUS
SABADELL TEL: +34-937 207 724	VALENCIA TEL: OMAe: +34-963 690 750; OVM: +34-961 868 862	SABADELL	–
SALAMANCA TEL: +34-923 129 775	MADRID TEL: +34-915 045 807	SALAMANCA	SALAMANCA
SAN SEBASTIÁN TEL: +34-943 668 544	SANTANDER TEL: +34-942 393 353	SAN SEBASTIAN	–
SANTANDER/Seve Ballesteros- Santander TEL: +34-942 202 114	SANTANDER TEL: +34-942 393 353	SANTANDER	–
SANTIAGO/Rosalía de Castro TEL: +34-981 599 160	SANTANDER TEL: +34-942 393 353	SANTIAGO	SANTIAGO
SEVILLA TEL: +34-954 674 455	SEVILLA TEL: +34-954 462 030; +34-954 460 699	SEVILLA	SEVILLA
SEVILLA/El Copero TEL: +34-954 937 888	SEVILLA TEL: +34-954 462 030; +34-954 460 699	EL COPERO	SEVILLA

EMAe	OMAe	TWR	APP
SEVILLA/Morón TEL: +34-955 969 024	SEVILLA TEL: +34-954 462 030; +34-954 460 699	MORON	SEVILLA
TENERIFE NORTE/Ciudad de La Laguna TEL: +34-922 260 352	LAS PALMAS TEL: +34-928 430 603	TENERIFE NORTE	TENERIFE NORTE
TENERIFE SUR TEL: +34-922 759 205	LAS PALMAS TEL: +34-928 430 603	TENERIFE SUR	TENERIFE SUR
VALENCIA TEL: +34-961 598 653	VALENCIA TEL: OMAe: +34-963 690 750; OVM: +34-961 868 862	VALENCIA	VALENCIA
VALLADOLID TEL: +34-983 369 679	MADRID TEL: +34-915 045 807	VALLADOLID	VALLADOLID
VIGO TEL: +34-986 950 170	SANTANDER TEL: +34-942 392 464	VIGO	SANTIAGO
VITORIA TEL: +34-945 163 543	SANTANDER TEL: +34-942 392 464	VITORIA	VITORIA
ZARAGOZA TEL: +34-976 324 647	VALENCIA TEL: OMAe: +34-963 690 750; OVM: +34-961 868 862	ZARAGOZA	ZARAGOZA

4.3 SERVICES OF THE METEOROLOGICAL WATCH OFFICE (MWO)

The Meteorological Watch Office (MWO) has the following duties:

- To keep watch on the meteorological conditions that affect flight operations within the areas of responsibility of the air traffic service units for which the service is provided.
- To prepare and provide SIGMET information and other meteorological information, when required, to these air traffic service units.

There are two Meteorological Watch Offices. One is located at the Valencia OMAe, which provides services to Madrid and Barcelona FIC and ACC, and another at Las Palmas OMAe, which provides services to Canarias FIC and ACC.

The Valencia Meteorological Watch Office also prepares and publishes AIRMET and, every six hours, GAMET and the low-level significant weather chart (SWL) for the Iberian Peninsula FIRs, Balearic Islands, Ceuta and Melilla.

Las Palmas de Gran Canaria Meteorological Watch Office prepares and publishes AIRMET and, every six hours, GAMET and the low-level significant weather chart (SWL) for the FIR Canarias, "Sub-area Islands".

The MWO will deal with requests from associated ACC and FIC, about area forecasts and warnings, by telephone or other means.

Meteorological Watch Office	ICAO Location Indicator	Surveillance Area	ICAO Location Indicator	ATS offices attended	Telephone
OVM Valencia	LEVA	FIR/UIR Madrid	LECM	Madrid ACC & FIC	+34-963 931 953
		FIR/UIR Barcelona	LECB	Barcelona ACC & FIC	+34-963 931 953
OVM Las Palmas	GCGC	FIR/UIR Canarias	GCCC	Canarias ACC & FIC	+34-928 430 603

4.4 SUPPORT TO SEARCH AND RESCUE SERVICES

Every Rescue Coordinator Centre may request, by telephone and 24 hours a day, the following information from its associated Meteorological Office:

- METAR, SPECI and TAF from aerodromes in Western European and North African countries, as well as the SIGMET issued for the FIR associated with these aerodromes.
- Meteorological warnings of Spanish aerodromes.
- GAMET and AIRMET for the Iberian Peninsula, Balearic Islands, Ceuta, Melilla and Canary Islands.
- Maritime Information for waters under the responsibility of Spain.

If a Rescue Coordination Centre cannot make telephone contact with its associated Meteorological Office or if they wish to expand this information, they may call the National Forecasting Center for Defence (CNPD).

Rescue Coordinator Centre	Associated Meteorological Office	National Forecasting Center for Defence
Madrid	Defence Meteorological Office (OMD) at MADRID/Torrejón. TEL: +34-916 275 209	National Forecasting Center for Defence TEL: +34-917 455 275
Palma de Mallorca	PALMA DE MALLORCA Aeronautical Meteorological Station (EMAe). TEL: +34-971 789 319	National Forecasting Center for Defence TEL: +34-917 455 275
Las Palmas	GRAN CANARIA Aeronautical Meteorological Station (EMAe). TEL:+34-928 579 917	National Forecasting Center for Defence TEL: +34-917 455 275

5. NOTIFICATION REQUIRED BY THE OPERATORS

For those departures from airports where the preflight meteorological information is not available or is inadequate for the planned flight, it is possible to issue a special forecast or specific information valid for a specific period of time and for a particular route or area included in the flight plan, by means of a request to the Aeronautical Meteorological Station (EMAe). The special forecasts can include aerodrome forecasts for the departure and destination aerodrome and up to three alternative aerodromes. This forecast is usually issued only for the phase of the flight up to the next transit aerodrome that provides this meteorological service. A forecast for the whole flight can be made available by a prior agreement with the Aeronautical Meteorological Station (EMAe).

The special forecasts shall be requested to the Aeronautical Meteorological Station (EMAe) at least three hours before the time of operation and shall be collected at the EMAe itself.

Requests for meteorological information and special forecasts which cannot be obtained through the AMA or the Aeronautical Meteorological Station (EMAe) from where the flight is departing, can be made by telephone to the OMAe associated to that airport (see table in item 4.2).

Queries can also be made to Valencia MWO, if the flight is wholly or partially within FIR/UIR Madrid or Barcelona, or Las Palmas MWO if the flight is wholly or partly in FIR/UIR Canarias.

The forecast office shall give priority to emergencies, in-flight forecasts and forecast requirements appropriately notified in advance. Other requests may be delayed during busy periods.

6. AIRCRAFT REPORTS

The reception of the meteorological AIREP contents at the meteorological offices is supported by the "Reglamento de la Circulación Aérea" which determines the obligation of the ATS to transmit the information provided from the aircraft to the associated meteorological office.

The pilot in command or the local operator responsible must put the ordinary and special AIREP obtained along the route at the disposal of the meteorological office.

7. VOLMET SERVICE

NAME OF STATION	CALL SIGN/IDENT/ ABBREVIATION (EM)	FREQ	BROADCAST PERIOD (*)	HOURS OF SERVICE	AERODROMES/ HELIPORTS INCLUDED	REP, INFO SIGMET, FCST & REMARKS
1	2	3	4	5	6	7
MADRID	Madrid VOLMET A3E	126.205 C	CNS	H24	MADRID/Adolfo Suárez Madrid- Barajas BARCELONA/Josep Tarradellas Barcelona-El Prat SEVILLA MÁLAGA/Costa del Sol VALENCIA ALICANTE/Alicante-Elche Miguel Hernández BILBAO LISBOA BORDEAUX	MET, QNH and TREND Report.
BARCELONA	Barcelona VOLMET A3E	127.605 C	CNS	H24	MADRID/Adolfo Suárez Madrid- Barajas BARCELONA/Josep Tarradellas Barcelona-El Prat PALMA DE MALLORCA MÁLAGA/Costa del Sol IBIZA GIRONA MENORCA TOULOUSE MARSEILLE	MET, QNH and TREND Report.
ALICANTE	Alicante VOLMET A3E	126.005 C	CNS	H24	MADRID/Adolfo Suárez Madrid- Barajas PALMA DE MALLORCA MÁLAGA/Costa del Sol VALENCIA ALICANTE/Alicante-Elche Miguel Hernández IBIZA GRANADA/Federico García Lorca. Granada-Jaén ALGER ORAN	MET, QNH and TREND Report.
SANTIAGO	Santiago VOLMET A3E	126.605 C	CNS	H24	MADRID/Adolfo Suárez Madrid- Barajas BARCELONA/Josep Tarradellas Barcelona-El Prat ASTURIAS SANTIAGO/Rosalía de Castro LISBOA PORTO FARO BREST NANTES	MET, QNH and TREND Report.

NAME OF STATION	CALL SIGN/IDENT/ ABBREVIATION (EM)	FREQ	BROADCAST PERIOD (*)	HOURS OF SERVICE	AERODROMES/ HELIPORTS INCLUDED	REP, INFO SIGMET, FCST & REMARKS
1	2	3	4	5	6	7
SEVILLA	Sevilla VOLMET A3E	128.380 C	CNS	H24	MADRID/Adolfo Suárez Madrid- Barajas SEVILLA MÁLAGA/Costa del Sol GIBRALTAR LISBOA FARO CASABLANCA TANGER RABAT	MET, QNH and TREND Report.
LAS PALMAS	Las Palmas VOLMET A3E	126.200 MHz	CNS	H24	GRAN CANARIA TENERIFE NORTE/Ciudad de La Laguna TENERIFE SUR FUERTEVENTURA LANZAROTE/César Manrique Lanzarote CASABLANCA MARRAKECH AGADIR MADRID/Adolfo Suárez Madrid- Barajas LISBOA	MET, QNH and TREND Report.

(*) CNS: Continuous broadcasts.

8. SIGMET AND AIRMET SERVICES

8.1 SIGMET

Information issued by a Meteorological Watch Office (MWO) relating to specified actual or forecast en-route weather phenomena, and how the same are developing in time and space, where these could affect the operational safety of aircraft.

The period of validity of a SIGMET shall not exceed 4 hours. SIGMETs related to volcanic ash shall be based on the information received from the Toulouse Volcanic Ash Advisory Centre and their period of validity shall not exceed 6 hours.

MWOs provide service 24 hours per day to the flight information centres and area control centres for the FIR affected. They are the following:

- Valencia MWO (LEVA). Its area of responsibility is the MADRID FIR/UIR and the BARCELONA FIR/UIR.
- Las Palmas MWO (GCGC). Its area of responsibility is the CANARIAS FIR/UIR.

Flight information regions (FIR) cover from the ground up to flight level 195 (FL195) and the upper information regions (UIR) cover from flight level 195 (FL195) upwards.

SIGMET reports issued by the MWOs in Spain are broadcast in accordance with the Air Navigation plans for the EUR and AFI Regions and follow the template of ICAO Annex 3.

SIGMET CANCELLATION

SIGMET information will be cancelled when the phenomena cease or when it is no longer expected that they will develop in the area.

Example: Cancellation of SIGMET 2 in MADRID FIR:

LECM SIGMET 3 VALID 210730/210900 LEVA
LECM MADRID FIR CNL SIGMET 2 210600/210900

8.2 AIRMET

Information on specified actual or forecast en-route weather phenomena, which have not been included in Section I of the GAMET issued and could affect the operational safety of aircraft below FL150 in a Flight Information Region (FIR) or a subzone of it. This information is issued by MWOs. MWOs provide service 24 hours per day to the flight information centres and area control centres for the FIR affected.

AIRMETs are prepared and issued for:

- Zone 1 (situated to the North of parallel 39°N) of the MADRID FIR (LECM), issued by the Valencia MWO (LEVA).
- Zone 2 (situated to the South of parallel 39°N) of the MADRID FIR (LECM), issued by the Valencia MWO (LEVA).
- BARCELONA FIR (LECB), issued by the Valencia MWO (LEVA).
- CANARIAS FIR Subzone ISLAS (GCCC): Latitude 26°30'N-30°30'N; Longitude 012°00'W-020°00'W. Issued by the Las Palmas MWO (GCGC).

AIRMET reports issued by the MWOs in Spain are broadcast in accordance with the Air Navigation plans for the EUR Region and follow the template of ICAO Annex 3.

AIRMET CANCELLATION

AIRMET information will be cancelled when the phenomena cease or when it is not expected that they will continue.

9. OTHER AUTOMATED METEOROLOGICAL SERVICES

9.1 AERONAUTICAL METEOROLOGICAL SELF-SERVICE (AMA)

The Aeronautical Meteorological Self-service (AMA) is a service through which the aeronautical user, EMAe or by internet, can access updated reports and forecasts for both areas and aerodromes, in order to stay up to date with the existing and forecast weather for their flight.

Operational aeronautical users can register directly with the application through the web site:uama@aemet.es

The information included in the AMA is as follows:

- METAR, SPECI and TAF reports, from the aerodromes around the world that are available in the Agencia Estatal de Meteorología (AEMET) database.
- SIGMET (volcanic ash and tropical cyclone included), of FIR from all over the world.
- Volcanic ash and tropical cyclones warnings around the world. Satellite images of the whole world.
- Space meteorology warnings.
- GAMET and AIRMET reports from Spain.
- Meteorological warnings from Spanish aerodromes. Radar images and lightning detector network of Spain.
- Spanish aerodrome climatologies.
- Spanish wind and temperature maps at different levels produced by the Agencia Estatal de Meteorología (AEMET).
- En-route significant weather maps produced by the Agencia Estatal de Meteorología (AEMET). Significant weather, wind and temperature at altitude maps for the area, level, day and time in the following ICAO regions:
  1. EUR Region:
     - Significant, tropopause and maximum wind FL100-450.
     - Wind and temperature at 17 levels, from FL50 a FL530.
  2. EURAFI (C) Region:
     - Significant, tropopause and maximum wind FL250-630.

- Wind and temperature at 17 levels, from FL50 a FL530.

3. NAT (H) Region:
   - Significant, tropopause and maximum wind FL250 a FL630.
   - Wind and temperature at 17 levels, from FL50 a FL530.
4. NAT (H) Region:
   - Significant, tropopause and maximum wind FL100-450.
   - Wind and temperature at 17 levels, from FL50 a FL530.
5. MIDDLE EAST (MID) Region:
   - Significant, tropopause and maximum wind FL100-450.
   - Wind and temperature at 17 levels, from FL50 a FL530.
6. EURSAM (B) Region:
   - Significant, tropopause and maximum wind FL250-630.
   - Wind and temperature at 17 levels, from FL50 a FL530.

- Different maps with significant meteorological variable predictions for Spanish aviation: precipitation, compound cloudiness, QNH and surface forecast maps.
- Pilot products for validation by users: cloud top height, freezing level and wind shear.

9.2 AUTOMATIC TERMINAL INFORMATION SERVICE (ATIS)

The automatic terminal information service (ATIS), is a continuous broadcast on VHF frequencies. Every broadcast contains weather and operational information for aircraft operating at a particular airport.

The language used in the Broadcast is English.

ATIS messages contain the following information:

1. Broadcast identification, emission time and identification letter (Alpha, Bravo, Charlie, etc.).
2. Type of estimated approach.
3. Runway in use.
4. Transition level.
5. Significant runway conditions.
6. Information on delays.
7. Specific instructions from the ATS.
8. Essential information for operations.
9. Weather information:
   - Wind direction and speed.
   - Visibility and runway visual range (RVR).
   - Present weather.
   - Clouds and vertical visibility, where applicable.
   - Temperature.
   - Dew point.
   - Altimeter setting (QNH).
   - Trend type forecasts (TREND).
   - Information on significant phenomena in the aerodrome approach zone.
0. Supplementary messages.

11. Broadcast end.

NOTE: The information spread out by NOTAM at least 48 hours in advance shall not be included in ATIS messages.

Every ATIS transmission shall be identified by a letter from the ICAO spelling alphabet.

Pilots shall acknowledge the identification letter at the first contact with appropriate services, (APP, TWR or GND) so that the controller makes sure that the aircraft has received the latest valid information.

In Airports other than H24, ATIS messages shall be updated in non-operational hours of the aerodrome, according to the following:

Operational information:

- Indications shall be given that the aerodrome is closed.
- Indications shall be given that no ATC service is available.
- The runway in use shall not be radiated.
- Operational information deemed appropriate shall be radiated.

Weather information:

- The radiated weather information shall be that of a particular runway.
- It will be extracted from the runway sensors and METAR AUTO.
- There shall be no weather observer during the time the aerodrome is closed.

For example: THIS IS XXXX ATIS information X at time XX:XX AD CLSD TIL XXXX UTC MET INFO FOR RWY XX + information of sensors + METAR AUTO + operational information: + THIS WAS XXXX ATIS information X.

FREQUENCIES AND COVERAGE

Frequencies and coverages of ATIS are as follows:

AD ATIS / ATIS ARR / ATIS DEP	FREQ	OACI Coverage (NM/FL)	Theoretical coverage (NM/FL)
A CORUÑA ATIS	129.005 C	60/200	60/200
ALICANTE ATIS	120.080 C	60/200	60/200
ALMERÍA ATIS	119.055 C	60/200	60/200
BARCELONA ATIS ARR	118.655 C	60/200	60/200
BARCELONA ATIS DEP	121.980 C	5/0	5/0
BILBAO ATIS	118.830 C	60/200	35/200
FUERTEVENTURA ATIS	118.650 MHz	60/200	130° - 220°: 28/200 Resto // remaining: 60/200
GIRONA ATIS	128.755 C	60/200	60/200
GRANADA ATIS	120.630 C	60/200	60/200
GRAN CANARIAS ATIS	118.600 MHz	60/200	120° - 220°: 27/200 Resto // remaining: 60/200
IBIZA ATIS	119.805 C	60/200	90° - 190°: 45/200 Resto // remaining: 60/200
JEREZ ATIS	125.655 C	60/200	60/200
LANZAROTE ATIS	118.625 MHz	60/200	60° - 190°: 23/200 Resto // remaining: 60/200

AD ATIS / ATIS ARR / ATIS DEP	FREQ	OACI Coverage (NM/FL)	Theoretical coverage (NM/FL)
LA PALMA ATIS	118.250 MHz	60/200	60/200
MADRID/Adolfo Suárez Madrid-Barajas ATIS ARR	118.255 C	60/200	60/200
MADRID/Adolfo Suárez Madrid-Barajas ATIS DEP	130.855 C	5/0	5/0
MADRID/Cuatro Vientos ATIS	118.230 C	50/150	50/150
MALAGA ATIS ARR	120.380 C	60/200	180° - 230°: 25/200 Resto // remaining: 60/200
MALAGA ATIS DEP	124.480 C	5/0	5/0
MENORCA ATIS	129.155 C	60/200	60/200
PALMA DE MALLORCA ATIS ARR	119.255 C	60/200	60/200
PALMA DE MALLORCA ATIS DEP	121.780 C	5/0	5/0
REUS ATIS	120.255 C	60/200	60/200
SANTANDER/Seve Ballesteros-Santander ATIS	127.530 C	60/200	60/200
SAN JAVIER ATIS	128.605 C	60/200	60/200
SANTIAGO ATIS	127.755 C	60/200	60/200
SEVILLA ATIS	118.180 C	60/200	60/200
TENERIFE NORTE ATIS	118.575 MHz	60/200	200° - 270°: 25/200 Resto // remaining: 60/200
TENERIFE SUR ATIS	118.675 MHz	60/200	60/200
VALENCIA ATIS	121.080 C	60/200	60/200
VIGO ATIS	120.830 C	60/200	60/200
VITORIA ATIS	119.355 C	60/200	60/200

REFERENCE DOCUMENTATION

Documentation applicable to ATIS can be found at:

- ICAO Annex 3 (Meteorological Service for International Air Navigation).
- ICAO Annex 10 (Aeronautical Telecommunications).
- ICAO Annex 11 (Air Traffic Services).
- ICAO Annex 2 (Rules of the Air).
- ICAO Document 4444 (Air Traffic Management).
- ICAO Document 7474 (Air Navigation Plan - Africa- Indian Ocean Region).
- ICAO Document 7754 (Air Navigation Plan European Region).
- ICAO Document 8400 (Abbreviations and codes).
- ICAO Document 8896 (Manual of Aeronautical Meteorological Pratice).
- ICAO Document 9328 (Manual of Runway Visual Range Observing and Reporting Practices).
- ICAO Document 9426 (Air Traffic Service Planning manual).

- Spanish Reglamento de la Circulación Aérea.
- ITU Communication Regulations.
- Guide to Meteorological Services for Air Navigation (current version).
- Met Guidance: Aeronautical Meteorological Information (current version).

For more information go to AD 2-XXXX item 18, of the desired airport.