

Commentary

1. Introduction

The Japan Meteorological Agency (JMA) has published *The Aeronautical Climatological Information* annually since 1997 in line with [C.3.2.] Aeronautical Climatology of the Technical Regulations (WMO-No. 49) Volume II – Meteorological Service for International Air Navigation. Aeronautical climatological information (2025 edition) is provided in CSV and PDF format to facilitate spreadsheet-based usage.

2. Airports

This material contains aeronautical climatological information for all airports where JMA has conducted weather observations for more than five years. Table 1 lists those included in the 2025 edition. The statistical period is from 2021 to 2025.

3. Meteorological elements and observation instruments

(Previous changes to the below instruments are shown in Table 1.)

- Atmospheric pressure: electrostatic capacity barometer
The data is adjusted to a value at three meters above runway level
- Air temperature: electrical resistance thermometer
- Relative humidity and vapor pressure: electrostatic capacity hygrometer
- Wind direction and speed: propeller anemometer
The observation site locations are shown in AIP (AD2.15 and AD2.24(Aerodrome Chart))
- Visibility: prevailing visibility determined visually or runway visual range observing equipment or visibility meters¹(1-minute mean values of Meteorological Optical Range (MOR))
- Height of cloud base: visual evaluation or ceilometers¹ (the data from the last 30 minutes with time-based weighting)
The observation site locations are shown in AIP (AD2.24(Aerodrome Chart))

- Runway visual range: runway visual range observation equipment (forward scatter meter)
The observation site locations are shown in AIP (AD2.24(Aerodrome Chart))
- Precipitation: tipping-bucket rain gauge
- Snowfall depth (i.e., that of fresh snow on a flat wooden board): ruler or snow-depth meter
- Snow cover depth: ruler or snow-depth meter

¹ For aerodromes where fully automated meteorological observations and reports are implemented.

4. Aeronautical climatological information details

This material contains aeronautical climatological information (1) to (8). Tables (1), (2), (3), (4) and (5) are respectively based on tabular forms of Models A, B, C, D and E as defined in [C.3.2.] of the Technical Regulations (WMO-No.49) Volume II, while tables (6), (7) and (8) are originally provided by JMA.

(1) MODEL A

This table shows the five-year averages of frequencies (as percentages) for the runway visual range and visibility (both in meters) or height (in feet) of the base of the lowest BKN* or OVC** cloud layer whose extent was below the specified threshold. Values are rounded to the nearest integer. Those in the "MEAN" line are determined from averages of 24 hourly values based on the specified threshold. RVR, VIS and Hs indicate the runway visual range, the visibility and the height of a cloud layer's base, respectively.

* BKN (broken): cloud covering more than half the sky but not the whole sky

** OVC (overcast): cloud covering the whole sky

(2) MODEL B

This table shows the five-year averages of frequencies (as percentages) for visibility (in meters) below the specified thresholds.

(3) MODEL C

This table shows the five-year averages of frequencies (as percentages) for the heights (in feet) of the base of the lowest BKN or OVC cloud layer whose extent was below the specified threshold.

(4) MODEL D

This table shows the five-year averages of frequencies (as percentages) of concurrent wind direction (in 30-degree sectors) and speed (in knots) within the specified ranges.

(5) MODEL E

This table shows the five-year average of frequencies (as percentages) of surface temperatures in specified ranges of 5°C.

(6) Monthly Data

(a) Monthly means

The five-year averages of monthly/annual means of daily mean/maximum/minimum temperatures are listed.

(b) Monthly totals

The five-year averages of monthly/annual amounts of precipitation² and snowfall³ are listed. The daily total depth of snowfall is the sum of three values observed at 09, 15 and 21 JST (JST: Japan Standard Time, nine hours ahead of UTC (Coordinated Universal Time)).

(c) Monthly extremes

Values of monthly/annual absolute minimum pressure, maximum/minimum temperature, maximum daily/hourly/ten-minute precipitation totals², maximum daily snowfall totals³, maximum snow cover depth, maximum wind speed and peak gust speed are listed.

(d) Number of days in the month with parameters beyond certain thresholds

The five-year averages for the number of days in the month with parameters (mean/maximum/minimum temperature, precipitation², daily snowfall total³, snow depth, maximum wind speed) within the specified ranges are listed.

² Monthly precipitation statistics for January – April and November – December as well as annual figures are not available for airports where precipitation observation was halted during these periods.

³ Snowfall statistics are available for airports where snowfall observations are conducted three times a day (at 09, 15 and 21 JST (JST: Japan Standard Time, nine hours ahead of UTC (Coordinated Universal Time)) during the cold season.

(7) Monthly/annual means for specified times

The five-year averages of monthly/annual values are listed. The most frequent wind directions (36 dir.) are computed as follows:

- (i) The most frequent wind direction is determined by counting how many times each value (from direction 1 to 36) appears.
- (ii) If two or more directions have equally high frequencies, the one with the most

frequent adjacent direction is selected.

(iii) If two or more values remain, the one nearest to direction 36 is selected.

(8) Smoothed daily mean temperatures

Smoothed daily mean values for the daily mean, maximum and minimum temperatures are listed. Smoothed daily mean temperatures are computed as follows:

(i) The value for a certain calendar day is determined as the moving average of nine daily values (i.e., the current day and four days before/after it). The smoothed daily mean value for the day is obtained by repeating this process three times.

(ii) The value for 29th February is the average of those for 28th February and 1st March.

5. Symbols in aeronautical climatological information

(1) "-": no relevant phenomenon

(2) "x": value absent because more than 20% of data are missing or were not operationally observed

(3) Blank: no observation

(4) Values with ")": normal but computed from data lacking up to 20% of values that are missing or were not operationally recorded

(5) Values with "*": extremes that appear twice or more, or the most frequent wind directions when other directions appear with the same frequency

6. Supplement

[ft]: 1 ft = 0.3048 m

[kt]: 1 kt = 0.5144 m/s

[5 to 10]: for 5.0 to 9.9

Table 1 The changing history of observing instruments within a statistic period (1/3)

Location Indicator/Aerodrome	Fully automated meteorological observations and reports are implemented.	Date	Outline of change
RJAA/NARITA International	○	-	-
RJAF/MATSUMOTO		-	-
RJAN/NIIJIMA		-	-
RJAZ/KOZUSHIMA		-	-
RJBB/KANSAI International	○	-	-
RJBD/NANKI-SHIRAHAMA	○	-	-
RJBE/KOBE		-	-
RJCB/OBIHIRO		-	-
RJCC/NEW CHITOSE		10 November 2022	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJCH/HAKODATE	○	-	-
RJCK/KUSHIRO	○	-	-
RJCM/MEMANBETSU		-	-
RJCN/NAKASHIBETSU		-	-
RJCW/WAKKANAI		-	-
RJDB/IKI	○	-	-
RJDC/YAMAGUCHI-UBE	○	-	-
RJDT/TSUSHIMA		-	-
RJEB/MONBETSU		13 November 2024	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJEC/ASAHIKAWA	○	-	-
RJEO/OKUSHIRI		-	-
RJER/RISHIRI		-	-
RJFC/YAKUSHIMA	○	25 January 2023	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJFE/FUKUE		-	-
RJFF/FUKUOKA	○	20 March 2025	Observation instruments were installed for the start of B RWY (RWY16R, RWY34L) operations. The anemometer of the RWY16R started operation. The anemometer of the RWY34L started operation.
RJFG/TANEGASHIMA		25 February 2021	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJFK/KAGOSHIMA		27 January 2022	Airport Integrated Meteorological Observing System (AIMOS) started operation.

Table 1 The changing history of observing instruments within a statistic period (2/3)

Location Indicator/Aerodrome	Fully automated meteorological observations and reports are implemented.	Date	Outline of change
RJFM/MIYAZAKI	○	-	-
RJFO/OITA	○	25 February 2021	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJFR/KITAKYUSHU	○	25 February 2021	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJFS/SAGA		-	-
RJFT/KUMAMOTO	○	02 December 2021	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJFU/NAGASAKI		-	-
RJGG/CHUBU CENTRAIR International	○	25 March 2021	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJKA/AMAMI	○	-	-
RJKB/OKIERABU	○	01 February 2023	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJKI/KIKAI	○	-	-
RJKN/TOKUNOSHIMA	○	-	-
RJNF/FUKUI		28 November 2022	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJNO/OKI		-	-
RJNS/SHIZUOKA		27 February 2023	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJNT/TOYAMA	○	-	-
RJNW/NOTO		-	-
RJOA/HIROSHIMA	○	26 January 2023	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJOB/OKAYAMA		-	-
RJOC/IZUMO	○	-	-
RJOK/KOCHI	○	-	-
RJOM/MATSUYAMA		-	-
RJOO/OSAKA International	○	22 February 2023	Airport Integrated Meteorological Observing System (AIMOS) started operation, removing the Runway Visual Range(RVR) from the RWY32R.
RJOR/TOTTORI	○	-	-
RJOT/TAKAMATSU		-	-
RJOW/IWAMI		02 December 2021	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJOY/YAO		-	-
RJSA/AOMORI	○	-	-
RJSC/YAMAGATA		-	-
RJSF/FUKUSHIMA	○	09 November 2021	Airport Integrated Meteorological Observing System (AIMOS) started operation, and the snow cover meter started operation.

Table 1 The changing history of observing instruments within a statistic period (3/3)

Location Indicator/Aerodrome	Fully automated meteorological observations and reports are implemented.	Date	Outline of change
RJSI/HANAMAKI		29 August 2024	The snow cover meter started operation.
RJSK/AKITA		-	-
RJSN/NIIGATA	○	09 November 2021	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJSR/ODATE-NOSHIRO		10 November 2022	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJSS/SENDAI		25 February 2022	Airport Integrated Meteorological Observing System (AIMOS) started operation, and the snow cover meter started operation.
RJSY/SHONAI		-	-
RJTH/HACHIJOJIMA		23 January 2025	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJTO/OSHIMA		-	-
RJTQ/MIYAKEJIMA		23 January 2025	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RJTT/TOKYO International		-	-
ROAH/NAHA	○	-	-
ROIG/ISHIGAKI	○	23 January 2025	Airport Integrated Meteorological Observing System (AIMOS) started operation.
ROKJ/KUMEJIMA	○	26 January 2023	Airport Integrated Meteorological Observing System (AIMOS) started operation.
ROMD/MINAMI DAITO	○	-	-
ROMY/MIYAKO	○	27 January 2022	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RORK/KITADAITO	○	-	-
RORS/SHIMOJISHIMA	○	-	-
RORT/TARAMA	○	02 December 2021	Airport Integrated Meteorological Observing System (AIMOS) started operation.
RORY/YORON	○	-	-
ROYN/YONAGUNI	○	-	-