# AVIATION WEATHER PRODUCTS Grid-Point Wind and Temperature Forecasts

Bureau of Meteorology > Aviation Meteorological Services



The Aviation Meteorological Centre Melbourne generates wind and temperature forecast charts using weather model data.



Australian Government Bureau of Meteorology

### Grid-Point Wind and Temperature Forecasts

A grid-point wind and temperature (GPWT) forecast provides a text-based display of forecast wind speed, wind direction and temperature at specified heights above mean sea level. These GPWT forecasts are displayed in charts for three different volumes of airspace, known as High-level, Mid-level and Low-level Forecasts.

The Bureau's Aviation Meteorological Centre Melbourne generates these charts from data sourced from World Area Forecast Centre (WAFC) and the Bureau's Numerical Weather Prediction Model (ACCESS-R). Mid and High-level GPWT charts are produced with a 2.5 or 5 degree resolution from WAFC data. Low-level GPWT charts are produced with a 1.5 or 5 degree grid resolution from ACCESS-R data, hence the values may differ for the same location and height given that the data sources are different.

The charts are issued every six hours and valid every three hours (low-level) or six hours (mid and high level) for the next 24 hours and are valid for the time given on the chart. For operations between validity times users can interpolate the data between charts. Receipt of a forecast for a particular validity time will automatically amend and supersede any prior forecasts issued for that validity time. Both issue and validity times are given on the forecast.

High-level (FL180 – 450) charts are issued for the Australian and Tasman regions. Midlevel (5000ft – FL240) charts are issued for the Australian, Northeast, Southeast, West and Tasman regions. Low-level (1000ft – FL140) charts are issued for the Australian region and nine smaller areas (International Standard Atmosphere (ISA) temperature and pressure levels (hPa) are used in all charts). The following charts are produced:

LOW LEVEL	MID LEVEL	HIGH LEVEL
FL140 – 600hPa	FL240 – 400hPa	FL450 – 150hPa
10000ft – 700hPa	FL180 – 500hPa	FL390 – 200hPa
7000ft – 800hPa	FL140 – 600hPa	FL340 – 250hPa
5000ft – 850hPa	FL100 – 700hPa	FL300 – 300hPa
2000ft – 950hPa	FL050 – 850hPa	FL240 – 400hPa
1000ft – 975hPa		FL180 – 500hPa

The data is presented in latitude and longitude squares (either 5° by 5°, 2.5° by 2.5°, or 1.5° by 1.5°) overlaid on a geographic background.

The values given represent the wind and temperature at specific heights for the mid point of each square. They are given in the formats ddffftTT, where:

dd	gives the wind direction in degrees true to the nearest ten degrees (the final zero is truncated)
fff	gives the wind speed in knots.
t	gives the sign of the temperature (+ or -).
TT	gives the temperature in whole degrees celsius.

## Example GPWT Forecast Charts

## High Level (Australia)

34 13 03 04 09 - 08	004 001 017 017 012 018	-66 -52 -40 -30 -15 -04	10 23 23 25 07 00	008 013 010 008 008 005	-67 -52 -40 -29 -14 -05	16 18 21 19 16 06	012 017 026 021 006 009	-67 -51 -40 -30 -13 -04	20 19 18 22 14 10	015 019 034 009 011 015	-67 -51 -39 -30 -15 -03	20 21 29 28 18 14	027 024 029 028 012 016	-67 -52 -41 -30 -15 -03	26 31 29 28 22 18	025 038 038 029 015 013	-67 -53 -40 -30 -15/ -03	27 30 29 29 29 29 29 29 29 29 29 29 29 29 29	040 043 035 028 016 010	-69 -52 -40 -30 -16 -04	27 30 28 28 29	038 034 027 021 021 018 010	-69 -52 -40 -30 -14 -05	30 33 31 30 27 34	029 036 032 031 020 008	-67 -52 -40 +30 +14 -04	31 32 32 32 28 31	028 032 035 031 018 006	-67 -52 -39 -30 -15 -04	32 36 34 33 31 35	018 031 025 019 013 004	-67 -52 -39 -30 -14 -04	34 01 36 32 34	010 027 026 023 010 005	-67 -52 -39 -29 -15 -04
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#### Mid Level (South-East)

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GRID POINT FORECASTS (FL050 - 240) PROVIDED BY AUSTRALIAN BUREAU OF METEOROLOGY DATA FROM WAFE LONDON VALID: 0000 UTC 02 Jun 2017	FL hPa ISA T 240 400 -33	27 033 -32 28 031 -20 28 038 -11 28 045 -04 27 046 +05	29 036 -32 2 29 030 -20 2 28 037 -10 2 26 040 -04 2 26 041 +05 2	29 030 -32 27 29 022 -19 27 26 029 -10 24 26 037 -04 24 28 032 +06 26	017 -31 22 021 022 -19 22 017 027 -10 24 023 029 -05 24 025 027 +03 26 028	-31 19 028 -32 18 -19 21 019 -20 20 -10 24 020 -10 19 -04 25 022 -05 23 +02 27 024 +02 25	028 -34 18 ( 020 -21 18 ( 016 -10 22 ( 024 -07 25 ( 025 +03 24 (	)32 -34 19 026 -36 )28 -22 24 020 -24 )19 -13 26 016 -14 )19 -06 25 016 -06 )20 +02 23 015 +015
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#### Low Level (Australia)



#### Low Level (WA-N)



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A vertical line in the margin indicates a text amendment since last update.