Aviation Briefing Portal
Darren Hardy
If printing double-sided you will need this blank page. If printing single sided, please delete this page
## Document Issue History

<table>
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<tr>
<th>Version</th>
<th>Issue Date</th>
<th>Change Description</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>April 2019</td>
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<td>D Hardy</td>
</tr>
<tr>
<td>V2</td>
<td>February 2020</td>
<td>Replacement of AIRMETs with GAMETs</td>
<td>D Hardy</td>
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1. Introduction

The Met Office, as the sole designated UK Air Navigation Service Provider of regulated aeronautical meteorological forecasts, provides a range of weather briefing products to support the activities of the UK general aviation and business jet communities.

These products are hosted on an aviation briefing portal, which is made available to all general aviator groups and business jet operators operating within and from the UK. The portal helps ensure that UK aviators have access to comprehensive, reliable and accurate weather information to plan and operate safely at any time. Approximately 30,000 pilots are subscribed to this portal.

Access to the portal is available via secure login, once registered, and is free of charge to all who fly from the United Kingdom. The portal has also been designed to be used on desktop/laptop PCs, as well as mobile & tablet devices, thereby offering flexible viewing options. Registration is quick and easy, simply visit GA Briefing Services. Some additional products are available to users wishing to subscribe to the premium version – these are products that go beyond the recommended minimum regulatory requirements. Details of how to upgrade are available at https://www.metoffice.gov.uk/aviation/ga-briefing-services/premium-upgrade. Details of these products have been included in this guide, annotated as ‘Premium’.

This user guide has been produced to provide brief details on all aspects of the briefing portal. The Met Office are always happy to consider ways to improve future versions of this user guide or indeed the portal itself– simply contact the Met Office at the details given in the ‘Contact Us’ section of the portal. In this guide we have used the ▲ icon to indicate additional information relating to the forecast, and ✠ to indicate useful background information.

We hope that you find the aviation briefing portal to be an invaluable planning & briefing tool that provides all the weather information you need to conduct safe flying, and that this guide is a useful complementary document. If you have any comments regarding this guide, please contact us.
2. The Home page & basic functionality

2.1. Settings

The Settings function allows users to set a number of preferences, to optimise their use of the portal. These preferences include the ability to view METARs in coded or decoded form, to set aerodromes or ballooning locations as your default ‘landing page’, to view the location of aerodromes, ballooning locations, both or neither on the interactive map, and your preferred way of viewing the aerodrome names on the map.

Once you have made your selections, these will be set until such time as you wish to change them.

The Settings tab also allows users to subscribe to receive aerodrome warnings for up to 2 aerodromes via email. The Aerodrome Warnings product is explored in more detail in section 3 of this guide, with further details also available at Aerodrome warnings FAQs.
2.2. Messages

Occasionally it is necessary to alert users to some important information relevant to the portal, for example site maintenance or an issue affecting the delivery of products. When this is the case, a message will be posted in the ‘letterbox’ located in the black bar at the top of the portal.

2.3. Logout

To exit the portal at any time, select the logout button. We advise that you logout at least weekly to enable the system updates that the Met Office routinely release to optimise performance, to take effect.

2.4. Top level functions

The top level functions are listed in a horizontal bar on the portal, as shown below.

Information on each of these functions follow:
• Aerodromes

This section provides a quick and easy way to view a range of current information for a particular aerodrome. Type the name or ICAO for an aerodrome into the box to receive the following information for that location:

- Latest TAF (if provided)
- Latest METAR (if provided)
- Previous 4 METARs (if provided)
- Any aerodrome warnings issued (if issued)
- The relevant Forecast regional pressure setting
- Sunrise & sunset times

Further detail on TAFs and METARs is available in section 3 of this guide.

If you have location settings enabled on your tablet or smartphone you can ‘use your current location’ to view this data for your nearest aerodrome.

The most recent aerodromes that you have searched for will remain available to reselect without typing in the aerodrome name.

The Met Office provide aerodrome warnings for over 100 aerodromes. So even if you are operating to/from a small airfield that does not issue METARs or receive TAFs, pilots will still likely be able to access warnings of a range of significant weather conditions for that airfield including strong wind, gale, fog, frost, thunderstorms, hail, squall, snow and frost. Further details on the Aerodrome Warnings product is available at Aerodrome warnings FAQs and in section 3 of this guide.

Search for an aerodrome location

Search for a location for TAFs, METARs, aerodrome warnings and regional pressure settings.

Aerodrome name or ICAO code

Use your current location

To view nearby locations, please enable Location Services in your device settings or browser. Mobile devices may also need a good GPS signal.

• Balloon locations

This section has been specifically designed for balloonists, and the products are described in more detail in section 3 of this guide.
The principle for accessing forecasts for locations used by balloonists is similar to accessing aerodrome information; starting to type a ballooning location will allow a balloonist to select the site they require a forecast for. An option exists to view a list and details of all the ballooning sites for which forecasts are provided.

If you have location settings enabled on your tablet or smartphone you can ‘use your current location’ to view forecast data for the nearest ballooning site for which forecasts are provided.

The most recent ballooning locations that you have searched for will remain available to reselect without typing in the location name.

A range of balloon forecast definitions information is also available from this page, including thermal strength, lee waves strength and wind shear.

⚠️ Ballooning forecasts are designed to provide additional information relevant to the specific requirements of balloonists and which is not included in other forecasts. These forecasts are therefore intended to be a supplement to, and not a substitute for other briefing information available, including GAMETs and F215. The forecasts are not amended once issued.

Search for a ballooning location

• TAFs & METARs

This section allows pilots to view geographical lists of TAFs and or METARs. Further detail on TAFs and METARs are provided in section 3 of this guide.

A global search function exists in the event that the aerodrome you are looking for is now available in the list.
Regional Forecasts

This section allows pilots to access a range of area forecasts for the UK, including SIGMETs, GAMETs, Volcanic Ash Advisories, Regional Pressure Settings and London CTA helicopter forecasts. Each of these products are described in section 3 of this guide.

Briefing Charts

This section allows pilots to access a range of UK and international weather forecasts in chart form, including Surface Pressure (synoptic charts), Low Level significant weather charts & spot winds, Upper level significant weather charts and upper wind and temperature charts.

Each of these products are described in more detail in section 3 of this guide.

Map

This section takes users to the interactive map portal from which an extensive range of observation and forecast data produced by Met Office models are available as map overlays. These layers are explored in more detail in section 4 of this guide.

Cloud heights in map layers are referenced to height above ground level.
Forecast information on map layers are automated and derived solely from Met Office models, and have no forecaster input to fine tune the data. As such, these layers are intended to provide broad guidance, and ideally should form part of a wider briefing that takes account of the scope of information available on the web site.

Map layer data will auto-refresh every 5 minutes. On each auto-refresh the website will check whether new model data has come in, and if appropriate it will update the map layers with this new data. A refresh may be ‘forced’ by clicking the refresh button or F5 on your browser.

The exact time at which model data comes into the website may vary slightly day to day.

### 2.5. Quick Link shortcuts

The grey section in the bottom half of the portal provides users with access to range of products via a number of ‘quick links’. These include briefing charts and commonly used weather map layers. Selecting any of these links will take directly through to that product/map layer.

<table>
<thead>
<tr>
<th>Map layer quick links</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainfall radar</td>
<td>METAR observations and warnings</td>
</tr>
<tr>
<td>Visible satellite</td>
<td>Infrared satellite</td>
</tr>
<tr>
<td>Forecast wind and temperature</td>
<td>Forecast precipitation, cloud and fog</td>
</tr>
<tr>
<td>Charts</td>
<td></td>
</tr>
<tr>
<td>Surface pressure</td>
<td>Significant weather (low level)</td>
</tr>
<tr>
<td>Volcanic Ash Advisories (chart)</td>
<td>Significant weather (upper level)</td>
</tr>
<tr>
<td>Regional forecasts</td>
<td></td>
</tr>
<tr>
<td>SIGMETs</td>
<td>AIRMETs</td>
</tr>
</tbody>
</table>

### 2.6. Additional Information

The black horizontal bar at the foot of the portal provides access to a range of non-forecast information including:

- Frequently Asked Questions
- Guides
- Links to national severe weather warning
- Supported browsers, and
- How to contact and provide feedback

These are designed to provide some additional information to help users get the most from the briefing portal.
3. Aviation Briefing Products

3.1. TAF & METAR lists

What information does the product provide pilots?
TAFs provide a concise summary of the most likely range weather conditions that pilots can expect at an aerodrome throughout their period of validity.

METARs provide a snapshot of the wind, visibility, weather, cloud, temperature and pressure at an aerodrome at a particular time. METARs are normally produced by a qualified observers, and many airports are increasingly utilising automated instrumentation.

When is the product issued
TAFs are routinely issued every 3 or every 6 hours, depending on the validity period of each TAF. TAFs are issued approximately 1 hour prior to the when they become valid. The issuance of a TAF is dependent upon the provision of regular and compliant METARs. All aerodromes generating METARs will normally have TAFs provided. For aerodromes that do not provide METARs 24/7 a TAF is issued shortly after the commencement of METARs in the morning.

The TAF issue times are as follows:

- 9 Hour TAFs

<table>
<thead>
<tr>
<th>Start Time</th>
<th>End Time</th>
<th>Required Time of Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000</td>
<td>0900</td>
<td>2300</td>
</tr>
<tr>
<td>0300</td>
<td>1200</td>
<td>0200</td>
</tr>
<tr>
<td>0600</td>
<td>1500</td>
<td>0500</td>
</tr>
<tr>
<td>0900</td>
<td>1800</td>
<td>0800</td>
</tr>
<tr>
<td>1200</td>
<td>2100</td>
<td>1100</td>
</tr>
<tr>
<td>1500</td>
<td>2400</td>
<td>1400</td>
</tr>
<tr>
<td>1800</td>
<td>0300</td>
<td>1700</td>
</tr>
<tr>
<td>2100</td>
<td>0600</td>
<td>2000</td>
</tr>
</tbody>
</table>

- 24 Hour TAFs

<table>
<thead>
<tr>
<th>Start Time</th>
<th>End Time</th>
<th>Required Time of Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000</td>
<td>2400</td>
<td>2300</td>
</tr>
<tr>
<td>0600</td>
<td>0600</td>
<td>0500</td>
</tr>
<tr>
<td>1200</td>
<td>1200</td>
<td>1100</td>
</tr>
<tr>
<td>1800</td>
<td>1800</td>
<td>1700</td>
</tr>
</tbody>
</table>
• 30 Hour TAFs

<table>
<thead>
<tr>
<th>Start Time</th>
<th>End Time</th>
<th>Required Time of Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000</td>
<td>0600</td>
<td>2300</td>
</tr>
<tr>
<td>0600</td>
<td>1200</td>
<td>0500</td>
</tr>
<tr>
<td>1200</td>
<td>1800</td>
<td>1100</td>
</tr>
<tr>
<td>1800</td>
<td>2400</td>
<td>1700</td>
</tr>
</tbody>
</table>

METARs are issued every 30 minutes in the UK, at 20 and 50 minutes past the hour. Around 55 UK aerodromes produce METARs - the UK AIP, section GEN 3.5 provides a list of airports producing METARs. SPECIs are not issued in the UK, though local non-routine reports are provided by aerodromes when significant changes to the weather occur between METARs, and these are made available via ATIS or R/T.

Validity period of the product
TAFs have a minimum validity period of 2 hours. Normally TAFs are valid for either 9, 24 or 30 hours. The validity period of TAFs is determined by the CAA, taking account of the nature of air traffic operating to each airport.

METARs are only valid at the time they are produced. As soon as they are issued, they are effectively out of date.

⚠️ Remember that TAFs and METARs reflect the forecast and actual weather conditions at the aerodrome. The weather conditions en-route are often likely to vary markedly from the weather at your departure and arrival aerodromes, so don’t plan your flight without considering the en-route conditions.

💡 The values provided in TAFs are commonly thought to represent the exact forecast conditions for a particular time. In fact, whilst those values are the most likely expected, they actually account for a range of potential values. For more information on this, please take a look at What do TAFs actually mean? TAFs are continuously monitored and subject to amendment criteria when the conditions deviate beyond the prescribes limits. TAF amendments are required to be issued within 15 minutes of when significant un-forecast weather occurs, or on receipt of a METAR that breaches the TAF. This amendment criteria are described in the UK AIP, section GEN 3.5. and GetMet.

💡 Did you know that the accuracy of TAFs are monitored by the Met Office, along with a range of other measures that we assess against. The results are published, and can be viewed on our verification pages.

Example
3.2. Regional Forecasts

3.2.1. SIGMETs

What information does the product provide pilots?

SIGMETs provide abbreviated plain language information on a range of reported or forecast en-route weather that may be hazardous to aviation. The Met Office is designated by ICAO as a Meteorological Watch Office (MWO) and as such is responsible for issuing SIGMETs for 3 UK FIRs (London, Scottish and Shanwick). The range of weather covered by SIGMETs issued by the Met Office includes:

- Thunderstorm (TS)
• Severe Turbulence (SEV TURB), to include SEV CAT and SEV Low Level Turbulence
• Icing
• Mountain Wave (SEV MTW)
• Volcanic Ash (VA)

SIGMETs issued by other State Meteorological service providers are available to premium subscribers.

The phenomenon that UK airspace experienced on 16th October 2017, during which smoke from forest fires on the Iberian peninsula were drawn up into UK airspace, impacted the operation of a number of aircraft. As a consequence and following discussions with the Met Authority, CAA, the Met Office have commenced the provision of ‘Smoke SIGMETs’ in order to provide timely information on this potential hazard to aviators in the event of a widespread smoke event in future. Please visit our Pilot Resource Portal for more information.

When is the product issued
A SIGMET will be issued when the conditions listed above are expected to occur within the FIRs that the Met Office is responsible, or upon receipt of an AIREP (Air Report) provided by an airline.

Validity period of the product
SIGMETs are normally valid for a maximum of 4 hours.
### SIGMET Bulletins

**EBBU BRUXELLES**

Phenomena: Embedded thunderstorm(s)  Valid from: Wed 29 Aug 2018 - 13:05 UTC Valid to: Wed 29 Aug 2018 - 17:05 UTC

**LFFF PARIS**

Phenomena: Embedded thunderstorm(s)  Valid from: Wed 29 Aug 2018 - 12:40 UTC Valid to: Wed 29 Aug 2018 - 15:00 UTC

**LSAS SWITZERLAND**


**LFMM MARSEILLE**

Phenomena: Embedded thunderstorm(s)  Valid from: Wed 22 Aug 2018 - 12:30 UTC Valid to: Wed 22 Aug 2018 - 14:00 UTC
3.2.2. GAMETs

What information does the product provide pilots?

GAMETs are semi plain language regional low level forecasts for the UK. They describe the following meteorological aspects:

- Met situation
- Strong wind warning (surface winds greater than 20 knots, including gusts)
- Freezing level
- Weather including visibility, present weather and cloud information
- Winds & temperature
- Regional outlook
- UK extended outlook

The Met Office provides 4 such forecasts, covering different parts of the UK as follows:

- GAMET south east
- GAMET south west
- GAMET Central
- GAMET North

These areas may be described as follows:

- Southeast forecast: Area to the East of Southampton-Oxford-Northampton-The Wash
- Southwest forecast: Area to the West of Southampton-Oxford-Leamington Spa-Llanbedr
- Central forecast: North of area covered by Southeast and Southwest areas up to a line from Carlisle to Berwick
- North forecast: North of area covered by Central area including Northern Ireland

The content of GAMETs are designed to be consistent with the content of the F215 (low level significant weather charts). GAMETs will be amended subject to criteria defined by the CAA.

When is the product issued

GAMETs are issued either up to 4 times each day, at 0400, 1000, 1600 & 2200 UTC.

Validity period of the product

The validity of GAMETS are 9 hours. The validity periods/times of its composite parts are as follows (all times UTC):

<table>
<thead>
<tr>
<th>Regional Area / Forecast</th>
<th>Update time</th>
<th>Validity period</th>
<th>Met Situation validity time</th>
<th>Regional Outlook period</th>
<th>Spot wind validity</th>
<th>UK Outlook period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0400</td>
<td>08-17</td>
<td>1200</td>
<td>18-00</td>
<td>09, 12, 15</td>
<td>00-24</td>
</tr>
</tbody>
</table>
Example

GAMET Area Forecast

South East Region

Issued on: Friday 26 February 2021 at 03:31 UTC

Valid for: 0900-1200 UTC

Met Situation:
A WARM FRONT LIES ON A LINE THROUGH BLACKPOOL TO LONDON TO PARIS. MOVIE AT 20KT IN THE N AND ENE AT 18KT IN THE S. A SECOND WARM FRONT LIES ON A LINE FROM KINROSS TO KETTERING. TO S WINDS. MOVIE AT 18KT IN THE N. ENE AT 18KT IN THE S. A COLD FRONT LIES FROM KINROSS TO WESTWICK. THROUGH Humber to Watford MOVIE AT 20KT.

Stirring wind warning:HPGR MEAN 25-25KT GUST 30-35KT SCA GRT, WITH DCNLR MEAN 30KT GUST 40KT.

Freezing Level: 2000FT.

Weather Conditions:
SW OF A LINE MONTROSE TO A55/00 E30000 TO OHENT. MOVIE AT 20-30KT.

Regional Outlook (Valid 1500-1800 UTC)

Similar

Extended Outlook (Valid 0600-0900 UTC)

COMPLEX FRONTAL SYSTEM ACROSS UK AT FIRST. ACTIVE COLD FRONT MOVES QUICKLY E. CLEARING ALL BUT NORTHERN ISLES BY 1200 UTC. FOLLOWED BY A TRANSIENT WEAK RIDGE OF HIGH PRESSURE THE STRONG UNSTABLE W FLOW. DEEP LOW PRESSURE WITH ASSOCIATED WRAPAROUND OCCULSIONS BECOMES SLOW MOVING NEAR NW SCOTLAND LATER.
3.2.3. Volcanic Ash Advisories

What information does the product provide pilots?
A text based product (Volcanic Ash Advisory) and equivalent graphic (Volcanic Ash Graphic) are generated to inform the aviation community of areas affected by volcanic ash contamination, in the event that volcanic activity results in the release of ash into the atmosphere. These products will describe the current vertical and horizontal event of ash in the atmosphere, and its expected trajectory.

The Met Office is one of 9 Volcanic Ash Advisory centres, designated by ICAO. Our area of responsibility covers UK airspace and the north east Atlantic, including Iceland. The Met Office engages closely with the Icelandic Met Office and uses a dispersion model to help predict the trajectory of released ash. We can also call upon a civil contingency aircraft and ground based equipment to observe the concentration and extent of ash.

Hazards from ash include possible engine failure due to ingestion of a range of different sized volcanic particles that can quickly damage engines to the extent that they may not necessarily be restarted. Additionally, noxious fumes that may affect aircrew/passengers.

When is the product issued
The objective of these alerts is to prevent flight into hazardous volcanic ash so these products are issued as quickly as is possible following an eruption. Subsequent issues will be issued at 0030, 0630, 1230 and 1830 for as long as the eruption and/or ash continues to exist and pose a hazard.

Validity period of the product
The products will be valid for 6 hourly timesteps (T+0, T+06, T+12 and T+18). The product will be re-issued if there are significant changes to the eruption strength, particularly increases in eruption activity.

Example

<table>
<thead>
<tr>
<th>Aerodromes</th>
<th>Balloon locations</th>
<th>TAFs &amp; METARs</th>
<th>Regional forecasts</th>
<th>Briefing charts</th>
<th>Map</th>
</tr>
</thead>
</table>

**Volcanic Ash Advisories**

Select advisory centre:

- EGRR London
  - No advisories issued for London VAAC
- LFPW Toulouse
  - No advisories issued for Toulouse VAAC

### 3.2.4. Regional Pressure Settings

**What information does the product provide pilots?**

This product provides a forecast of the lowest pressure expected to occur in the hour HH+1hour to HH+2hours for a number of defined areas, as described below

<table>
<thead>
<tr>
<th>Puffin</th>
<th>Shetland</th>
<th>Marlin</th>
<th>Skerry</th>
<th>Petrel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portree</td>
<td>Orkney</td>
<td>Rattray</td>
<td>Belfast</td>
<td>Tyne</td>
</tr>
<tr>
<td>Skua</td>
<td>Holyhead</td>
<td>Barnsley</td>
<td>Humber</td>
<td>Scillies</td>
</tr>
<tr>
<td>Wessex</td>
<td>Cotswold</td>
<td>Chatham</td>
<td>Yarmouth</td>
<td>Portland</td>
</tr>
</tbody>
</table>

**When is the product issued**

These forecasts are issued hourly, between 70 to 75 minutes prior to their validity.

**Validity period of the product**

One hour.

**Be aware/did you know**

ℹ️ An illustration of the geographical extent of each area is provided in the UK AIP (ENR section), and reproduced below.
3.2.5. London CTA Helicopter forecast

What information does the product provide pilots?
This is an area forecast covering the London CTA, provided to support commercial, private and emergency helicopter operations.

The forecast draws attention to the potential for one or more of the following meteorological thresholds to be breached:

- A cloud base of 1000 feet or less;
- Surface visibility of 3000 metres or less.
A colour coded summary of the forecast risk is presented, describing the extent and period of time that either of the above thresholds are expected to be breached. The forecast also summarises the freezing level over the forecast area and an outlook.

The overall area covered is the London CTR and London/City CTR as published in the UK AIP. This area is split into 4 zones, with advisories issued for each zone.

**When is the product issued**
The forecasts are issued routinely every 6 hours, but may also be amended subject to defined criteria:

<table>
<thead>
<tr>
<th>Time of Issue (UTC)</th>
<th>Validity Period (UTC)</th>
<th>Outlook (UTC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0215-0230</td>
<td>0300-0900</td>
<td>0900-1500</td>
</tr>
<tr>
<td>0815-0830</td>
<td>0900-1500</td>
<td>1500-2100</td>
</tr>
<tr>
<td>1415-1430</td>
<td>1500-2100</td>
<td>2100-0300</td>
</tr>
<tr>
<td>2015-2030</td>
<td>2100-0300</td>
<td>0300-0900</td>
</tr>
</tbody>
</table>

**Validity period of the product**

**Be aware/did you know**

The thresholds that these forecasts focus on are intended to help helicopter operators mitigate the risk of flight into high buildings and other obstacles over the London area.
# London CTA Helicopter Forecast

Issued on Thursday, 23 August 2018 at 08:29 UTC

## Forecast for period 0900-1500 UTC

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Cloud bases will be 500-700FT until 1000UTC. Visibilities expected to be above 3000M now, chance is clearing but may drop temporarily to 5000M in second band arriving before 1000UTC.</td>
</tr>
<tr>
<td>B</td>
<td>Cloud bases will be 500-700FT until 1000UTC. Visibilities expected to be above 3000M now, chance is clearing but may drop temporarily to 5000M in second band arriving before 1000UTC.</td>
</tr>
<tr>
<td>C</td>
<td>Cloud bases will drop to 500ft in rain and drizzle with few amounts possibly reaching 400ft. Visibilities are expected to drop to 3000M with 2000M in heavier bursts this clearing by 1000UTC.</td>
</tr>
<tr>
<td>D</td>
<td>Cloud bases will drop to 500ft in rain and drizzle with few amounts possibly reaching 400ft. Visibilities are expected to drop to 3000M with 2000M in heavier bursts this clearing by 1000UTC.</td>
</tr>
</tbody>
</table>

## Outlook for period 1500-2100 UTC

- Cloud bases above 1000FT.
- Visibilities greater 3000M.

### Attitude Above Mean Sea Level

- **Freezing Level Across the CTA 0900-1500 UTC:** 11000 FT

---

Meteorologist: Aviation, Tel: 0370 900 0100

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3.3. Briefing charts

3.3.1. Surface Pressure

What information does the product provide pilots?
These charts display the current and forecast synoptic situation over Europe and the Atlantic.

Each display offers the user the ability to view the synoptic situation for the following 3 days. (5 days for premium subscribers. The charts provide a useful top level summary of the current and forecast synoptic situation over the UK and North Atlantic and can be used to assess the likely track of deep depressions for example, that might present particular operational challenges.

When is the product issued
These charts are updated twice per day.

Validity period of the product
The synoptic charts are valid at 1200 UTC and 2400 UTC each day.

Be aware/did you know

1. Having a basic understanding of fronts and air masses can be incredibly useful in providing a top level overview of the weather. Whilst no front or air mass is identical, they do provide a number of common weather features. For more information on interpreting synoptic charts, weather fronts and air masses please take a look at the section on the Pilot Resource Portal.

Example

Surface Pressure Charts

[Map of Surface Pressure Charts showing current and forecast conditions for 22 Aug 2018]
3.3.2. Significant Weather (Low level) & Spot Winds

a. Significant Weather (Low level)

What information does the product provide pilots?
The purpose of these charts is to display both graphically and alphanumerically areas of weather across the UK. Information supplied by these charts covers the expected conditions between the surface and 10,000ft. The chart is commonly referred to as a F215, and often conveys a great deal of weather information on a single page, so abbreviated plain language is used.

On the left hand side of the chart a map provides the forecast positions of the fronts, their speed of movement and areas of weather for a specified validity time.

On the right hand side of the chart, the areas of weather are highlighted as A,B,C etc. Alongside these, a description of surface visibility, weather and cloud is provided. Finally, the height of the 0 degree Celsius isotherm for each area is shown on the right. Additional information on likely icing and turbulence is also provided.

These charts are a staple of the GA community and are used to highlight areas of poor visibility, and low cloud that pilots may wish to avoid along their flying route.

When is the product issued
Issued 4 times a day, every 6 hours.

Validity period of the product

<table>
<thead>
<tr>
<th>Validity time</th>
<th>Approx time of update</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 UTC to 0500 UTC</td>
<td>Daily at about 1530</td>
</tr>
<tr>
<td>0200 UTC to 1100 UTC</td>
<td>Daily at about 2130</td>
</tr>
<tr>
<td>0800 UTC to 1700 UTC</td>
<td>Daily at about 0330</td>
</tr>
<tr>
<td>1400 UTC to 2300 UTC</td>
<td>Daily at about 0930</td>
</tr>
</tbody>
</table>

Be aware/did you know

ℹ️ A detailed decode and worked example of a F215 is available from the [Pilot Resource Portal](#).

⚠️ Remember, the heights provided on these charts are reference to mean sea level. Please consider the ground elevation along the route that you are taking.
Low level significant weather and Spot Wind charts

Important note

Warning: it is the responsibility of the users of this service to ensure that charts selected are valid for the time and date of use.

F215 UK low-level forecast chart

- 02:00 - 11:00 UTC
  Data available 22 Aug 2018 after 21:00 UTC

- 08:00 - 17:00 UTC
  Last updated: 22 Aug 2018 - 03:16 UTC

- 14:00 - 23:00 UTC
  Last updated: 22 Aug 2018 - 09:16 UTC

- 20:00 - 05:00 UTC
  Data available 22 Aug 2018 after 15:00 UTC

F214 UK Spot wind forecast chart

- 03:00 - 09:00 UTC
  Data available 22 Aug 2018 after 22:00 UTC

- 09:00 - 15:00 UTC
  Last updated: 22 Aug 2018 - 04:55 UTC

- 15:00 - 21:00 UTC
  Last updated: 22 Aug 2018 - 10:56 UTC

- 21:00 - 03:00 UTC
  Data available 22 Aug 2018 after 16:00 UTC

F415 European low-level forecast chart

- 02:00 - 11:00 UTC
  Data available 22 Aug 2018 after 21:00 UTC

- 08:00 - 17:00 UTC
  Last updated: 22 Aug 2018 - 03:10 UTC

- 14:00 - 23:00 UTC
  Last updated: 22 Aug 2018 - 09:01 UTC

- 20:00 - 05:00 UTC
  Data available 22 Aug 2018 after 15:00 UTC

F414 European Spot wind forecast chart

- 03:00 - 09:00 UTC
  Data available 22 Aug 2018 after 22:00 UTC

- 09:00 - 15:00 UTC
  Last updated: 22 Aug 2018 - 04:55 UTC

- 15:00 - 21:00 UTC
  Last updated: 22 Aug 2018 - 10:56 UTC

- 21:00 - 03:00 UTC
  Data available 22 Aug 2018 after 16:00 UTC

Usage of Briefing Charts - Guide to Met Office Briefing Charts
b. Spot Winds

What information does the product provide pilots?
This product displays forecast wind speed & direction, and temperatures in boxes at particular grid points over the UK. These boxes provide a profile of wind and temperature from 1,000ft to 24,000ft.

When is the product issued
Issued 4 times a day, every 6 hours.

Validity period of the product

<table>
<thead>
<tr>
<th>Validity period</th>
<th>Approximate time of issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>2100 – 0300 UTC</td>
<td>1800 UTC</td>
</tr>
<tr>
<td>0300 – 0900 UTC</td>
<td>0000 UTC</td>
</tr>
<tr>
<td>0900 – 1500 UTC</td>
<td>0600 UTC</td>
</tr>
<tr>
<td>1500 – 2100 UTC</td>
<td>1200 UTC</td>
</tr>
</tbody>
</table>
3.3.3. Significant Weather (upper level) premium subscribers

What information does the product provide pilots?
Forecasts of Upper level significant weather phenomena are provided as charts for a number of regions covering the globe.

The regions covered are as follows:
- EURSAM (ICAO Area B) FL250-FL630
- EURAFI (ICAO Area C) FL250-FL630
- EURASIA (ICAO Area D) FL250-FL630
- INDOC (ICAO Area E) FL250-FL630
- MID (ICAO Area G) FL250-FL630
- NAT (ICAO Area H) FL250-FL630
- SIO (ICAO Area K) FL250-FL630
- EUR FL100-FL450
- MID FL100-FL450
- ASIA SOUTH FL100-FL450

When is the product issued
Charts are updated four times per day at the following times

<table>
<thead>
<tr>
<th>Time of issue (UTC)</th>
<th>Model data used</th>
</tr>
</thead>
<tbody>
<tr>
<td>between 0640 to 0655 UTC</td>
<td>0000</td>
</tr>
<tr>
<td>between 1240 to 1255 UTC</td>
<td>0600</td>
</tr>
<tr>
<td>between 1840 to 1855 UTC</td>
<td>1200</td>
</tr>
<tr>
<td>between 0040 to 0055 UTC</td>
<td>1800</td>
</tr>
</tbody>
</table>

Validity period of the product
The charts are provided for 'fixed validity times' at 6 hourly intervals for the next 24 hours. The forecasts are 'usable' for a period of time extending from 3 hours before to 3 hours after the stated 'fixed' validity time.

Be aware/did you know
The Met Office is one of World Area Forecast Centres (WAFC), which are responsible for producing global upper level wind, temperature and significant weather products. The other is WAFC Washington based in Kansas.
Guidance on interpreting the features commonly seen on these charts is provided in the Pilot Resource Portal.

Example
3.3.4. Wind & Temperature **premium** subscribers

What information does the product provide pilots?
Upper level gridded wind and temperature charts are provided for 3 regions: Europe (EUR), North Atlantic (NAT) and middle east (MID). Data is selectable for 9 difference flight levels.

When is the product issued
Charts are updated four times per day at the following times

<table>
<thead>
<tr>
<th>Time of issue (UTC)</th>
<th>Model data used</th>
</tr>
</thead>
<tbody>
<tr>
<td>between 0330 to 0420 UTC</td>
<td>0000</td>
</tr>
<tr>
<td>between 0930 to 1020 UTC</td>
<td>0600</td>
</tr>
<tr>
<td>between 1530 to 1620 UTC</td>
<td>1200</td>
</tr>
<tr>
<td>between 2130 to 2220 UTC</td>
<td>1800</td>
</tr>
</tbody>
</table>

Validity period of the product
The charts are provided for 'fixed validity times' at 6 hourly interval for the next 24 hours. The forecasts are 'usable' for a period of time extending from 3 hours before to 3 hours after the stated 'fixed' validity time.

Example
3.4. Balloonists forecasts

What information does the product provide pilots?

a. Ballooning forecasts provide specific meteorological information, not available from other more general forecasts, to enable balloonists to safely plan both commercial and private flights.

Forecasts are provided for 91 locations in hourly timesteps, and the following information is included in these forecasts:

i. Wind speed and direction at SFC, 500ft, 1000ft and 2000ft
ii. Air temperature at SFC, 500ft, 1000ft and 2000ft
iii. Thermal strength
iv. Wind shear
v. Pressure (QNH)
vii. Humidity

The product also provides local area forecasts of rotors, lee waves, inversions, sea breeze activity, outlook and summary.

b. Additionally, regional ‘graphical wind and temperature profiles’ for each balloon launch site are provided. Wind and temperature information is presented for 500, 1000 and 2000 feet above ground level.

When is the product issued

a. Ballooning text forecast issue times and periods of validity are as follows:

- **Winter** Schedule (applicable between 16 October to 14 March)

<table>
<thead>
<tr>
<th>Forecast</th>
<th>Issue time (local)*</th>
<th>Period of validity</th>
<th>Outlook</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning</td>
<td>20:30 previous day</td>
<td>05:00-10:00</td>
<td>Midday to Dusk</td>
</tr>
<tr>
<td>Morning</td>
<td>02:30</td>
<td>06:00-11:00</td>
<td>Midday to Dusk</td>
</tr>
<tr>
<td>Afternoon/Evening</td>
<td>08:30</td>
<td>12:00-17:00</td>
<td>Dawn to Midday next day</td>
</tr>
<tr>
<td>Afternoon/Evening</td>
<td>14:30</td>
<td>12:00-17:00</td>
<td>Dawn to Midday next day</td>
</tr>
</tbody>
</table>

- **Summer** Schedule (between 15 March to 15 October)

<table>
<thead>
<tr>
<th>Forecast</th>
<th>Issue time (local)*</th>
<th>Period of validity</th>
<th>Outlook</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning</td>
<td>20:30 previous day</td>
<td>05:00-10:00</td>
<td>Three hours before dusk until dusk</td>
</tr>
<tr>
<td>Morning</td>
<td>02:30</td>
<td>05:00-10:00</td>
<td>Three hours before dusk until dusk</td>
</tr>
</tbody>
</table>
b. Regional graphical wind & temperature profiles:

The product is valid at 0600 and 1800 UTC between 15 March and 15 October and at 0900 and 1500 UTC between 16 October and 14 March. They updated at 0230, 0830, 1430 and 2030 UTC.

*note that all times are UTC and that updated forecasts will be available on the website after a short period after the time of issue

Validity period of the product
Please see above.

Be aware/did you know

The Met Office and CAA have summarised the information available for balloonists and a sensible approach to pre-flight briefing in the Pilot Resource Portal.

⚠️Gusts: The wind gust values used in the ballooning forecasts are calculated from a high resolution model and should give a good guide to gusts in the type of light wind conditions that balloonists are interested in. However there are a few things to be aware of:

- When the mean wind speed is >15kt the gust speeds shown tend to be higher than is realistic. Please note that where you see gust speeds elsewhere on Met Office products they calculate gust speeds in a different way, which gives more accurate values at higher mean wind speeds.
- The high resolution model used to calculate the gust speeds is able to forecast heavy showers/thunderstorms and downdraughts. This means that from time to time there may be an unusually strong gust shown for a forecast site near to one of these forecast showers/thunderstorms when in general the forecast winds are light. Please be aware that showers/thunderstorms may not always form in the exact location shown in the forecast, and the potential for these strong gusts will move with it.

Example
Balloon forecast - Bristol

Issued: Tue 04 September 2023 0830 UTC

View location on map

<table>
<thead>
<tr>
<th>Tue AM</th>
<th>Tue PM</th>
<th>Wed AM</th>
</tr>
</thead>
</table>

Area Forecast: SOUTHWEST
Forecast period: 04 SEPTEMBER 2023 1600-2100 UTC
Regional Summary
For most areas moderate northerly or north- northeasterly winds. For West Wales and the north coast of Cornwall, strong northerly winds. In western areas cloudy, with broken or overcast stratus, hill fog and patchy drizzle.

Sea Breeze: Nil

Inversions Min/Max (ft)
In the far west, a weak inversion with base at 3000ft and top 5000ft.

Lee waves generated over Snowdonia
Height at strongest wave activity (ft): N/A
Wave amplitude (Nil/Moderate/Severe): Nil
Risk of Rotors: No

Lee waves generated over Dartmoor and Exmoor
Height at strongest wave activity (ft): N/A
Wave amplitude (Nil/Moderate/Severe): Nil
Risk of Rotors: No

Outlook for period:
DAWN TO DAWN+3 HOURS, 05 SEPTEMBER 2023: Over most areas moderate northerly winds but remaining strong over west Wales. Light to moderate winds over east Wales and the southwest Midlands.

<table>
<thead>
<tr>
<th>Time (UTC)</th>
<th>1600</th>
<th>1700</th>
<th>1800</th>
<th>1900</th>
<th>2000</th>
<th>2100</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Surface wind direction</strong></td>
<td>020</td>
<td>020</td>
<td>020</td>
<td>020</td>
<td>020</td>
<td>020</td>
</tr>
<tr>
<td><strong>Surface wind speed/gusts (kts)</strong></td>
<td>7/14</td>
<td>7/14</td>
<td>7/14</td>
<td>6/13</td>
<td>6/14</td>
<td>6/13</td>
</tr>
<tr>
<td><strong>Surface air temp °C</strong></td>
<td>PS16</td>
<td>PS16</td>
<td>PS16</td>
<td>PS16</td>
<td>PS16</td>
<td>PS16</td>
</tr>
<tr>
<td><strong>500h wind direction</strong></td>
<td>020</td>
<td>020</td>
<td>020</td>
<td>020</td>
<td>020</td>
<td>030</td>
</tr>
<tr>
<td><strong>500h wind speed (kts)</strong></td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td><strong>500h air temp °C</strong></td>
<td>PS14</td>
<td>PS15</td>
<td>PS15</td>
<td>PS15</td>
<td>PS15</td>
<td>PS14</td>
</tr>
<tr>
<td><strong>1000h wind direction</strong></td>
<td>020</td>
<td>020</td>
<td>020</td>
<td>020</td>
<td>030</td>
<td>030</td>
</tr>
<tr>
<td><strong>1000h wind speed (kts)</strong></td>
<td>11</td>
<td>11</td>
<td>12</td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td><strong>1000h air temp °C</strong></td>
<td>PS12</td>
<td>PS12</td>
<td>PS12</td>
<td>PS12</td>
<td>PS12</td>
<td>PS12</td>
</tr>
<tr>
<td><strong>2000h wind direction</strong></td>
<td>030</td>
<td>030</td>
<td>030</td>
<td>030</td>
<td>040</td>
<td>040</td>
</tr>
<tr>
<td><strong>2000h wind speed (kts)</strong></td>
<td>8</td>
<td>10</td>
<td>11</td>
<td>13</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td><strong>2000h air temp °C</strong></td>
<td>PS11</td>
<td>PS11</td>
<td>PS11</td>
<td>PS11</td>
<td>PS12</td>
<td>PS12</td>
</tr>
</tbody>
</table>

Thermal strength
Weak
Weak
Weak
Weak
Nil
Nil

Thermal height (ft)
1500
2000
1500
1000
0
0

Wind shear
No
No
No
No
No
No

QNH (hPa)
1022
1022
1022
1022
1023
1023

Humidity (%)
80
80
80
80
80
80

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Balloon forecasts

South East area PM forecast

Issued - Wed 22 Aug 2018 - 07:34 UTC

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4. Map weather layers

4.1. Basic Functionality

The interactive map feature allows users to select from an extensive range of observation and forecast model data. The area covered by the map may be increased or decreased by using the control or the cursor (or using finders on mobile devices). The map may also be panned.

As described in para 2.1 of this guide, default map settings may be selected to show aerodromes, ballooning locations, both or neither, as well as showing aerodromes by their ICAO indicator and/or name.

Selection the icon allows additional information to be provided on whatever weather information is currently being displayed.

Example of additional information presented by selecting the icon

Selecting the icon allows you to view the list of weather layers that can be selected. This list is expandable.
Example of weather map layers presented by selecting the icon

When selecting a weather layer from the list, a time sequence will be available at the foot of the map. This allows users to either run the forecast/observation sequence, or select a specific point in time.

The icon takes the user out of the map section back to your default ‘landing page’.

Where aerodromes have been selected from the preferences setting, these will be presented as coloured circles on the map. These colours are based on the visibility, cloud base and amount in the latest METAR and are updated following every new METAR issued. Colour coding is a good way of ascertaining quickly the conditions over an area without viewing the full observation. A definition of the meaning of each colour is shown in the icon.

Military airfield reports also display a colour state in their METARs - BLU, WHT, GRN, YLO1, YLO2, AMB or RED according to cloud base and visibility. These thresholds are different to the colours used to display the observations in the GA product. BLACK indicates the runway is unusable.

A summary of the differences is shown in the table below:
Aerodrome colour state code (shown in METARs from military airfields) | Aerodrome colour state code (shown on website)
---|---
**Aerodrome colour state** | **minimum weather conditions** | **minimum weather conditions**
Surface visibility | Base of lowest cloud layer of 3/8 (or SCT) or more in heights above ground level | Surface visibility | Base of lowest cloud layer of 5/8 (or BKN) or more in heights above ground level

<table>
<thead>
<tr>
<th>Aerodrome colour state</th>
<th>Minimum Surface Visibility (M)</th>
<th>Minimum Base of Lowest Cloud Height (M)</th>
<th>Minimum Surface Visibility (M)</th>
<th>Minimum Base of Lowest Cloud Height (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue (BLU)</td>
<td>8 KM</td>
<td>2500 FT</td>
<td>10 KM</td>
<td>1500 FT</td>
</tr>
<tr>
<td>White (WHT)</td>
<td>5000 M</td>
<td>1500 FT</td>
<td>5000 M</td>
<td>1200 FT</td>
</tr>
<tr>
<td>Green (GRN)</td>
<td>3700 M</td>
<td>700 FT</td>
<td>4000 M</td>
<td>600 FT</td>
</tr>
<tr>
<td>Yellow 1 (YLO1)</td>
<td>2500 M</td>
<td>500 FT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow 2 (YLO2)</td>
<td>1600 M</td>
<td>300 FT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amber (AMB)</td>
<td>800 M</td>
<td>200 FT</td>
<td>500 M</td>
<td>200 FT</td>
</tr>
<tr>
<td>Red (RED)</td>
<td>Less than 800 M</td>
<td>Below 200 FT or Sky obscured</td>
<td>Less than 500 M</td>
<td>Below 200 FT or Sky obscured</td>
</tr>
<tr>
<td>Black</td>
<td>Observation not available</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Aerodromes that have a red triangle over their circles indicate that an aerodrome warning has been issued for this location.

Aerodrome warnings are issued by the Met Office according to a set of pre-determined forecast conditions. They are as follows:

- **STRONG WIND**
  Issued when a strong wind with a mean of 20KT and/or gusts of 28KT is expected at the airfield

- **GALE**
  Issued when a strong wind with a mean of 34KT and/or gusts of 43KT is expected at the airfield

- **FROST**
  Issued when either:
  - an air frost (air temperature of 0°C or lower) is expected at the airfield
  - a ground frost (a surface temperature of 0°C or lower) is expected at the airfield.
  - a ground and air frost (a surface and air temperatures of 0°C or lower) is expected at the airfield
• **SNOW**
  Issued in advance of a snow event

• **FOG**
  Issued when fog or freezing fog is expected to reduce visibility to less than 600m.

• **THUNDERSTORM**
  Issued when a thunderstorm, with hail and or squall is expected at, or within 5nm of the airfield.

• **HAIL**
  Issued when hail is expected at, or within 5nm of the airfield.

• **FREEZING PRECIPITATION**
  Issued when freezing precipitation is expected to fall at the airfield.

• **TEMPERATURE INVERSION**
  Issued when a temperature inversion of 10ºC or more is expected to exist in the lowest 1000 FT.

Further detail on aerodrome warnings, including the phraseology used and how to use these in conjunction with TAFs, is provided in the [Pilot Resource Portal](#).

Selecting an aerodrome from the map will display a box in the top right hand side of the screen showing the latest METAR and any valid aerodrome warnings issued. The age of the latest METAR issued is also shown. The box allows users the option to view further additional information outside of the map if required.

Selecting a ballooning location from the map will take the user out of the map to ballooning forecast for that site.
4.2. Current weather

4.2.1. UK Radar

What information does the layer provide pilots with
High resolution detail of rainfall distribution, intensity and movement over the UK.

Areas of heavier precipitation are a likely indication of a low cloud base. Use rainfall radar to consider whether low cloud is likely to present a hazard along your route.

Timesteps provided
Every 15 minutes for the previous 3 hours
(5 minute updates for the most recent hour, for premium subscribers).

Data source
UK rainfall radar composite

Data update frequency
Every 15 minutes (every 5 minutes for premium subscribers).

Example
4.2.2. **European Radar** *(premium subscribers only)*

**What information does the layer provide pilots with**
Distribution, intensity and movement of precipitation over north western Europe.

**Timesteps provided**
Every 15 minutes for the previous 3 hours

**Data source**
European composite radar

**Data update frequency**
Every 15 minutes

**Example**
4.2.3. Lightning

What information does the layer provide pilots with
The distribution and timing of lightning detected by the Met Office’s lightning detection system.

⚠️ Most lightning detected is cloud to ground activity. Some intra-cloud (or cloud to cloud) activity may also be detected

Timesteps provided
Every 15 minutes for the previous 3 hours

Data source
The Met Office’s lightning detection system, called ATDNet.

Data update frequency
Every 5 minutes
4.2.4. Visible Satellite (premium subscribers only)

What information does the layer provide pilots with
Satellite imagery in the visible wavelength (daytime only)

The structure of clouds in satellite images can inform pilots a lot about the weather, and animated sequences can tell pilots about the movement of weather systems.

Bands of cloud often indicate the presence of weather fronts, whilst individual clouds are likely to provide detail on the location of convective clouds. Both frontal and convective cloud information is useful to pilots because each are often accompanied by potential weather hazards such as icing, turbulence, hail, and lightning. Gaps in the cloud cover can also reveal the location of snow fields.

Timesteps provided
Every 15 minutes for the previous 6 hours

Data source
Meteosat Second Generation satellite

Data update frequency
Every 15 minutes

Example
4.2.5. Infrared Satellite [premium] subscribers only

What information does the layer provide pilots with
Satellite imagery from in the infrared wavelength.

Satellites also measure the temperature of the clouds and the surface with an infrared sensor. This results in infrared satellite imagery.

The thermal contrast between land and cloud tops allows the position of clouds to be revealed during the hours of darkness. The brightest clouds are those with the greatest thermal contrast, i.e. those with the highest tops such as CBs. Those with little contrast with the land have similar thermal differences so are most likely low cloud like stratus, or fog.

Timesteps provided
Every 15 minutes for the previous 6 hours

Data source
Meteosat Second Generation satellite

Data update frequency
Every 15 minutes

Example
4.2.6. Thunderstorms (day)

What information does the layer provide pilots with
A combination layer showing both visible satellite imagery and observed lightning.

Timesteps provided
Every 15 minutes for the previous 3 hours

Data source
Meteosat Second Generation satellite & the Met Office’s lightning detection system, ATDNet

Data update frequency
Every 15 minutes

Example
4.2.7. Thunderstorms (night)

What information does the layer provide pilots with
A combination layer showing both infrared satellite imagery and observed lightning.

Timesteps provided
Every 15 minutes for the previous 3 hours

Data source
Meteosat Second Generation satellite & the Met Office’s lightning detection system, ATDNet

Data update frequency
Every 15 minutes

Example
4.3. Forecast Wind & Temp

4.3.1. Wind Fletches

What information does the layer provide pilots with
Gridded mean wind speeds for the UK and Europe at the surface, 2000ft, 5000ft and 10000ft.

Greater detail over a particular area can be obtained by zooming in.

Each feather shows the direction from which the wind is coming at a particular point. Each large line on a feather represents 10KTs and each half line represents 5KTs. A shaded triangle represents 50KTs. Wind information is provided referenced to degrees true.

Timesteps provided
Every 3 hours from T+0 to T+36 hours, then
Every 6 hours from T+36 hours to T+60 hours, then
Every 12 hours to 5 days ahead.

Data source
Met Office global model

Data update frequency
Model updates every 6 hours, with data available approximately 4.5 hours later (i.e. at 0430, 1030, 1630 & 2230 UTC).
4.3.2. Wind Arrows

What information does the layer provide pilots with
Gridded mean wind speeds for the UK and Europe at the surface, 2000ft, 5000ft and 10000ft.

Timesteps provided
Every 3 hours from T+0 to T+36 hours, then
Every 6 hours from T+36 hours to T+60 hours, then
Every 12 hours to 5 days ahead.

Data source
Met Office global model

Data update frequency
Model updates every 6 hours, with data available approximately 4.5 hours later (i.e. at 0430, 1030, 1630 & 2230 UTC).

Example
4.3.3. Wind & Temperature

What information does the layer provide pilots with
Gridded mean wind speeds and temperatures for the UK and Europe at 2000ft, 5000ft and 10000ft

Timesteps provided
Every 3 hours from T+0 to T+36 hours ahead

Data source
Met Office global model

Data update frequency
Model updates every 6 hours, with data available approximately 4.5 hours later (i.e. at 0430, 1030, 1630 & 2230 UTC).

Example
4.3.4. Temperature

What information does the layer provide pilots with
Forecast temperature data for 2000ft, 5000ft & 10000ft.

Ice accretion is a particular hazard when flying through cloud when the temperature close to or below 0C

Timesteps provided
Every 3 hours from T+0 to T+36 hours, then
Every 6 hours from T+36 hours to T+60 hours, then
Every 12 hours to 5 days ahead.

Data source
Met Office global model

Data update frequency
Model updates every 6 hours, with data available approximately 4.5 hours later (i.e. at 0430, 1030, 1630 & 2230 UTC).

Example
4.4. Forecast Precipitation

4.4.1. Precipitation Rate & Pressure

What information does the layer provide pilots with
This layer uses high resolution modelling (including ‘nowcasting’ for the first 6 hours) to forecast the movement and intensity of precipitation, and associated pressure pattern.

Nowcasting uses new observation data regularly received into our model to constantly update and fine tune short term forecasts.

Timesteps provided
Hourly to 36 hours ahead

Data source
UK model

Data update frequency
Data for the first 6 hours updates hourly
The rest of the data is updated at 0300, 0900, 1500 & 2100 UTC

Updated data is available approximately 27 minutes past the hour. The rest of the data will update approximately 3.5 hours after the model run (i.e. at 0630, 1230, 1830 & 0030 UTC).

Example
4.4.2. Precipitation Type & Pressure

What information does the layer provide pilots with (premium subscribers only)
This layer uses hi resolution modelling (including ‘nowcasting’ for the first 6 hours) to forecast the movement and type of precipitation, and associated pressure pattern.

Note: Nowcasting uses new observation data regularly received into our model to constantly update and fine short term forecasts.

Timesteps provided
Hourly to 36 hours ahead

Data source
UK model

Data update frequency
Data for the first 6 hours updates hourly
The rest of the data is updated at 0300, 0900, 1500 & 2100 UTC

Updated data is available approximately 27 minutes past the hour. The rest of the data will update approximately 3.5 hours after the model run (i.e. at 0630, 1230, 1830 & 0030 UTC).

Example
4.4.3. Cloud, fog & precipitation *(premium subscribers only)*

**What information does the layer provide pilots with**

This layer uses high resolution modelling to forecast cloud base and fog areas, as well as areas of precipitation. The layer is a useful indication of periods when the cloud base and/or fog may present a potential hazard, especially over higher ground.

**Timesteps provided**

Hourly to 36 hours ahead

**Data source**

UK model

**Data update frequency**

Data updated at 0300, 0900, 1500 & 2100 UTC

Updated data is available 3.5 hours after the model run (i.e. at 0630, 1230, 1830 & 0030 UTC).

**Example**
4.5. Forecast Visibility & Cloud *(premium subscribers only)*

4.5.1. Surface Pressure & Total Cloud

What information does the layer provide pilots with
This layer uses high resolution modelling (including ‘nowcasting’ for the first 6 hours) to forecast cloud coverage and associated pressure pattern.

Nowcasting uses new observation data received into our model every 6 hours to constantly update and fine short term forecasts

Timesteps provided
Hourly to 36 hours ahead

Data source
UK model

Data update frequency
Data for the first 6 hours updates hourly
The rest of the data is updated at 0300, 0900, 1500 & 2100 UTC

Updated data is available approximately 27 minutes past the hour. The rest of the data will update approximately 3.5 hours after the model run (i.e. at 0630, 1230, 1830 & 0030 UTC).

Example
4.5.2. Cloud below 1000ft

What information does the layer provide pilots with
This layer uses high resolution modelling to forecast areas of low cloud (below 1000ft above ground level). The layer highlights areas of particular risk for pilots operating visual met conditions.

Timesteps provided
Hourly to 36 hours ahead

Data source
UK model

Data update frequency
Data updated at 0300, 0900, 1500 & 2100 UTC

Updated data is available 3.5 hours after the model run (i.e. at 0630, 1230, 1830 & 0030 UTC).

Example

![Map showing cloud distribution](image-url)
4.5.3. Cloud Ground to 5000ft

What information does the layer provide pilots with
This layer uses high resolution modelling to forecast areas of cloud (below 5000ft above ground level).

Timesteps provided
Hourly to 36 hours ahead

Data source
UK model

Data update frequency
Data updated at 0300, 0900, 1500 & 2100 UTC

Updated data is available 3.5 hours after the model run (i.e. at 0630, 1230, 1830 & 0030 UTC).

Example
4.5.4. Cloud 5000ft to 15000ft

What information does the layer provide pilots with
This layer uses high resolution modelling to forecast areas of high cloud (above 5000ft above ground level).

Timesteps provided
Hourly to 36 hours ahead

Data source
UK model

Data update frequency
Data updated at 0300, 0900, 1500 & 2100 UTC

Updated data is available 3.5 hours after the model run (i.e. at 0630, 1230, 1830 & 0030 UTC).

Example
4.5.5. Visibility & Pressure

What information does the layer provide pilots with
This layer uses high resolution modelling to forecast areas of potential low visibility and associated pressure pattern. Areas of low visibility are normally associated with frontal systems, heavy precipitation or low cloud.

Timesteps provided
Hourly to 36 hours ahead

Data source
UK model

Data update frequency
Data updated at 0300, 0900, 1500 & 2100 UTC

Updated data is available 3.5 hours after the model run (i.e. at 0630, 1230, 1830 & 0030 UTC).

Example
4.5.6. Cloud, fog & surface pressure

What information does the layer provide pilots with
This layer uses high resolution modelling to forecast cloud base and fog areas, as well as pressure pattern. The layer is a useful indication of periods when the cloud base and/or fog may present a potential hazard, especially over higher ground.

Timesteps provided
Hourly to 36 hours ahead

Data source
UK model

Data update frequency
Data updated at 0300, 0900, 1500 & 2100 UTC

Updated data is available 3.5 hours after the model run (i.e. at 0630, 1230, 1830 & 0030 UTC).

Example
4.6. Euro Forecast (premium subscribers only)

4.6.1. Precipitation Rate & Pressure

What information does the layer provide pilots with
This layer forecasts the movement and intensity of precipitation, and associated pressure pattern over the wider European area.

This layer is useful for pilots flying from the UK to parts of Europe.

Timesteps provided
Hourly to 36 hours ahead

Data source
EURO model

Data update frequency
Data updated at 0300, 0900, 1500 & 2100 UTC

Updated data is available 4.5 hours after the model run (i.e. at 0730, 1330, 1930 & 0130 UTC).

Example
4.6.2. Precipitation Type & Pressure

What information does the layer provide pilots with
This layer forecasts the movement and type of precipitation, and associated pressure pattern over the wider European area.

This layer is useful for pilots flying from the UK to parts of Europe.

Timesteps provided
Hourly to 36 hours ahead

Data source
EURO model

Data update frequency
Data updated at 0300, 0900, 1500 & 2100 UTC

Updated data is available 4.5 hours after the model run (i.e. at 0730, 1330, 1930 & 0130 UTC).

Example
4.6.3. Visibility & Pressure

What information does the layer provide pilots with

This layer forecasts areas of potential low visibility and associated pressure pattern over the wider European area. Areas of low visibility are normally associated with frontal systems, heavy precipitation or low cloud.

This layer is useful for pilots flying from the UK to parts of Europe.

Timesteps provided
Hourly to 36 hours ahead

Data source
EURO model

Data update frequency
Data updated at 0300, 0900, 1500 & 2100 UTC

Updated data is available 4.5 hours after the model run (i.e. at 0730, 1330, 1930 & 0130 UTC).

Example
4.6.4. Total Cloud & Pressure

What information does the layer provide pilots with
This layer forecasts cloud coverage and associated pressure pattern over the wider European area.

Timesteps provided
Hourly to 36 hours ahead

Data source
EURO model

Data update frequency
Data updated at 0300, 0900, 1500 & 2100 UTC

Updated data is available 4.5 hours after the model run (i.e. at 0730, 1330, 1930 & 0130 UTC).

Example
4.6.5. Significant Wave Height

What information does the layer provide pilots with

This layer presents the forecast wave heights around the UK. Bands of equal wave height are shown. Through using the forecast sequence it is possible to identify periods over the following 5 days when, for example, the wave heights are expected to increase. Timesteps are presented:

CAP1145 describes the regulations for helicopters operating offshore, including the requirement to brief on the sea state from an approved source such as the Met Office. Under these regulations helicopter operations should not take place over open seas when a wave height of 6 metres or more is expected.

The Significant wave heights provided are defined as the 'average height of the highest one-third of waves observed' - a standard parameter used by scientists and mariners alike. As a rough rule of thumb the 1/1000th wave experienced will be approximately twice the significant wave height.

Timesteps provided
Hourly to 36 hours ahead.

Data source
EURO wave model

Date update frequency
4 times a day at around 0100, 0700, 1300 & 1900 UTC. Due to processing and QC there is a period of about 4 hours between the times of the model updates and when the updates occur on the website.
This means that the SWH product will update at around 0500, 1100 1700, 2300 UTC.

Example
4.7. Map Overlays

4.7.1. Lat/Long grid & TMAs

These grids can be used along with any other weather layer.

4.8. Saved Map Views

For convenience it is possible to name and save the map position you are currently viewing, using the Saved Map Views function.