



METEOROLOGY PANEL



World Area Forecast System (WAFS) SIGWX upgrade

November 2024





WAFS CHANGES COMING IN WITH AMENDMENT 82 TO ANNEX 3

Multi-timestep WAFS Significant Weather (SIGWX) forecasts will be introduced into Annex 3 with Amendment 82 (expected November 2025).

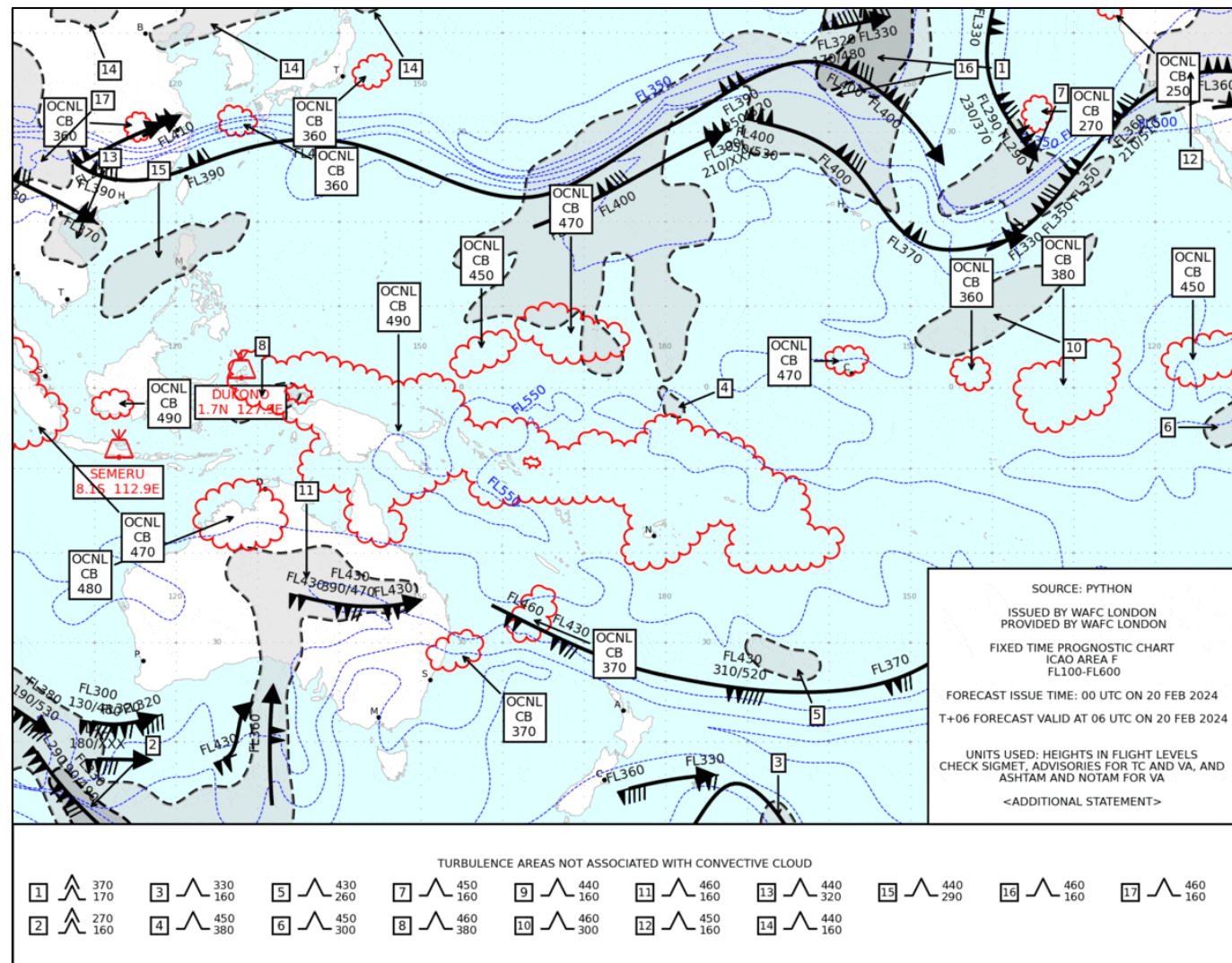
Important: WAFC London and WAFC Washington will be introducing the new SIGWX forecast 1 year early in November 2024

The United Kingdom and United States will be filing a difference against Annex 3 to enable this change.



NEW WAFS SIGWX FORECASTS

- The new SIGWX will span FL100 to FL600

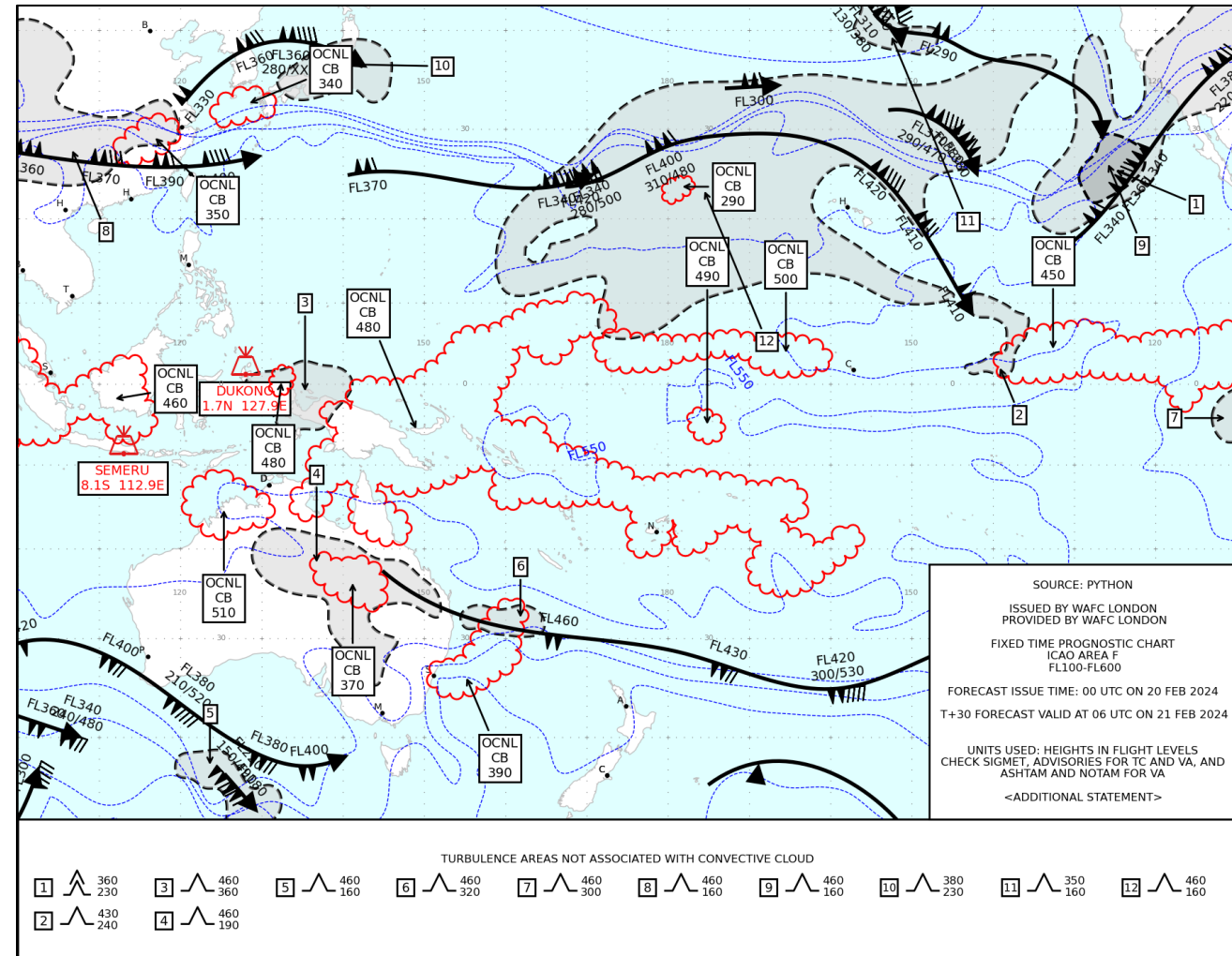




NEW WAFS SIGWX FORECASTS

The content of SIGWX forecasts will change a little:

- Tropopause height as contours
- Only areas of OCNL or FRQ CB will be forecast (no embedded CB's)
- Areas of MOD and SEV turbulence areas will be forecast, and will use the new Turbulence Severity field (which is CAT + orographic turbulence types)



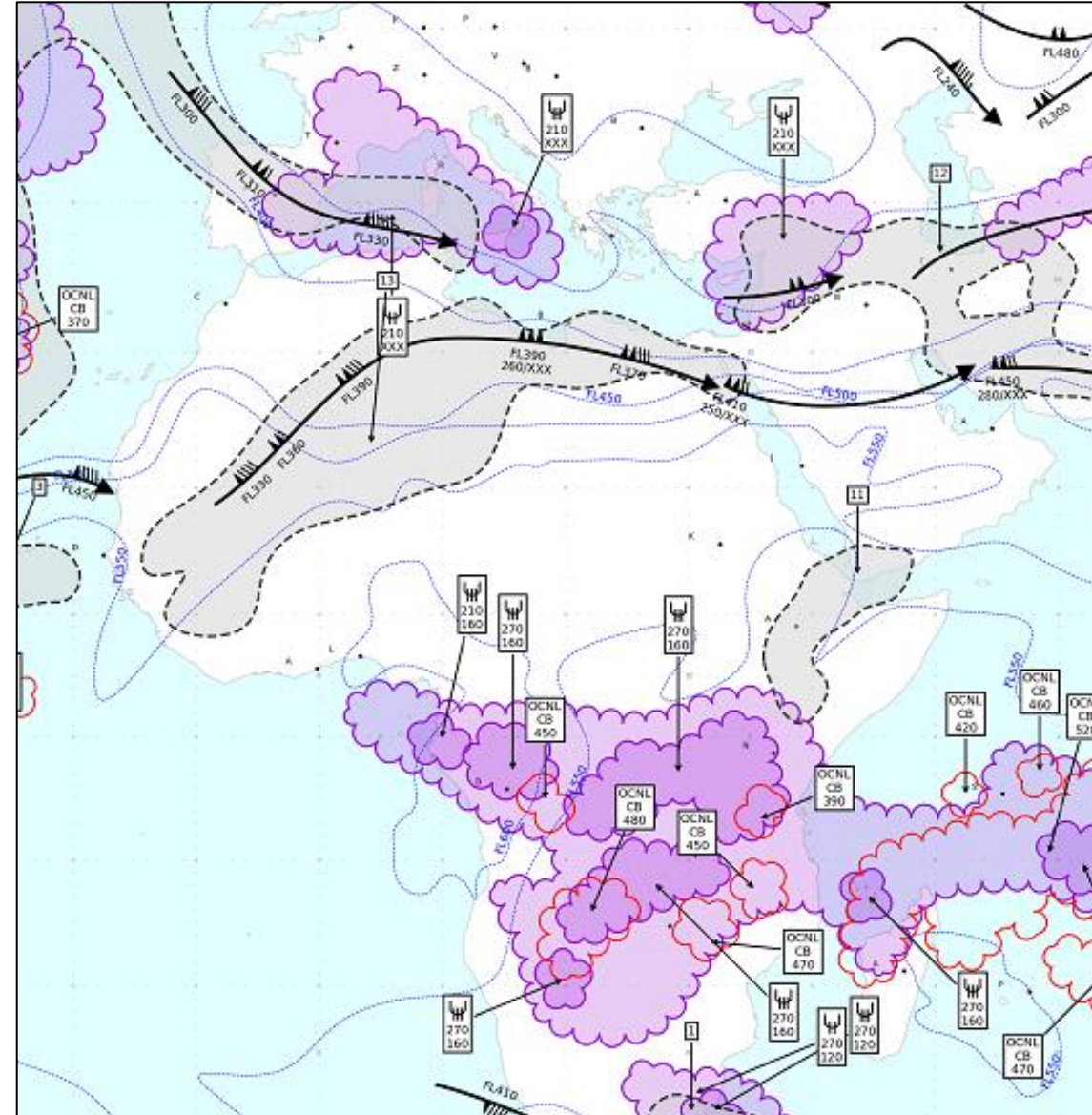


NEW WAFS SIGWX FORECASTS

The content of SIGWX forecasts will change a little:

- MOD and SEV icing areas will be available for the whole world.

Active volcanic eruptions, tropical cyclone positions and radioactive release markers will still be shown (tropical cyclone markers will only be shown up to and including T+24).





NEW WAFS SIGWX FORECASTS

Benefits of the new SIGWX forecasts

- Better suited to the needs of the aviation industry particularly for short haul and ultra long-haul flights.
- The gridded and SIGWX data sets will be consistent with each other
- Designed for digital use, where users will be able to control the content that is shown on the chart (toggling layers on and off, changing time-step, colour schemes)

WAFS SIGWX - FL100-FL600

<< **T+12** >>
VT 18 UTC 15/02/2019

CB IMPLIES TS, GR, MOD OR SEV TURB AND ICE

UNITS USED: HEIGHTS IN FLIGHT LEVELS

CHECK SIGMET, ADVISORIES FOR TC AND VA AND ASHTAM AND NOTAM FOR VA

Jetstream

Tropopause

Icing

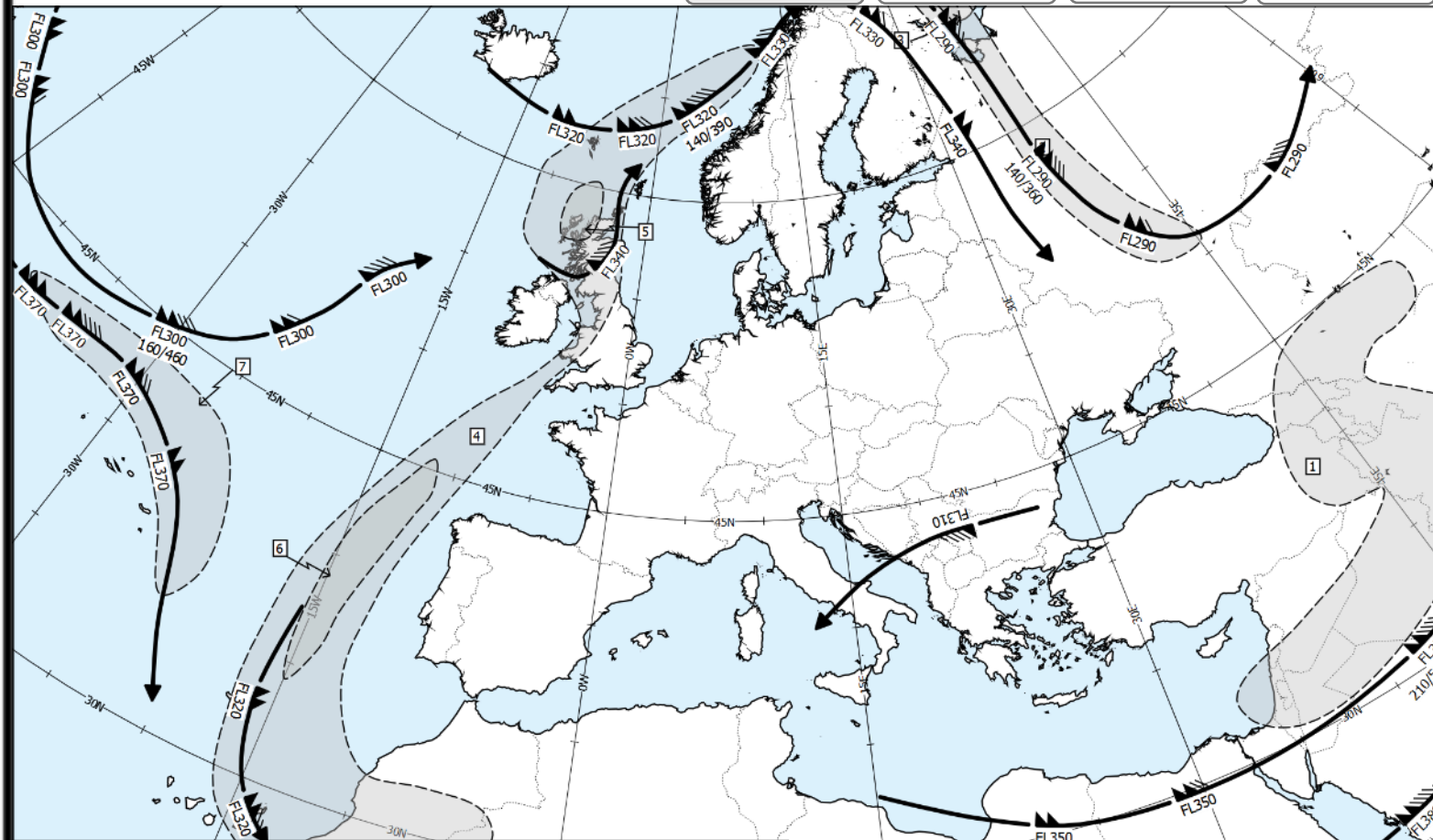
Overlays

Turbulence

CB

VA/TC/N

Flightpath



TURBULENCE

1 400 270 2 350 XXX 3 300 XXX 4 380 XXX 5 340 260 6 340 260 7 450 290

MODEL RUN TIME: 06UTC 15/02/2018

DATA PROVIDED BY WAFS LONDON

WAFS SIGWX - FL100-FL600

CB IMPLIES TS, GR, MOD OR SEV TURB AND ICE

UNITS USED: HEIGHTS IN FLIGHT LEVELS

CHECK SIGMET, ADVISORIES FOR TC AND VA AND ASHTAM AND NOTAM FOR VA

<< **T+12** >>
VT 18 UTC 15/02/2019

Jetstream

Tropopause

Icing

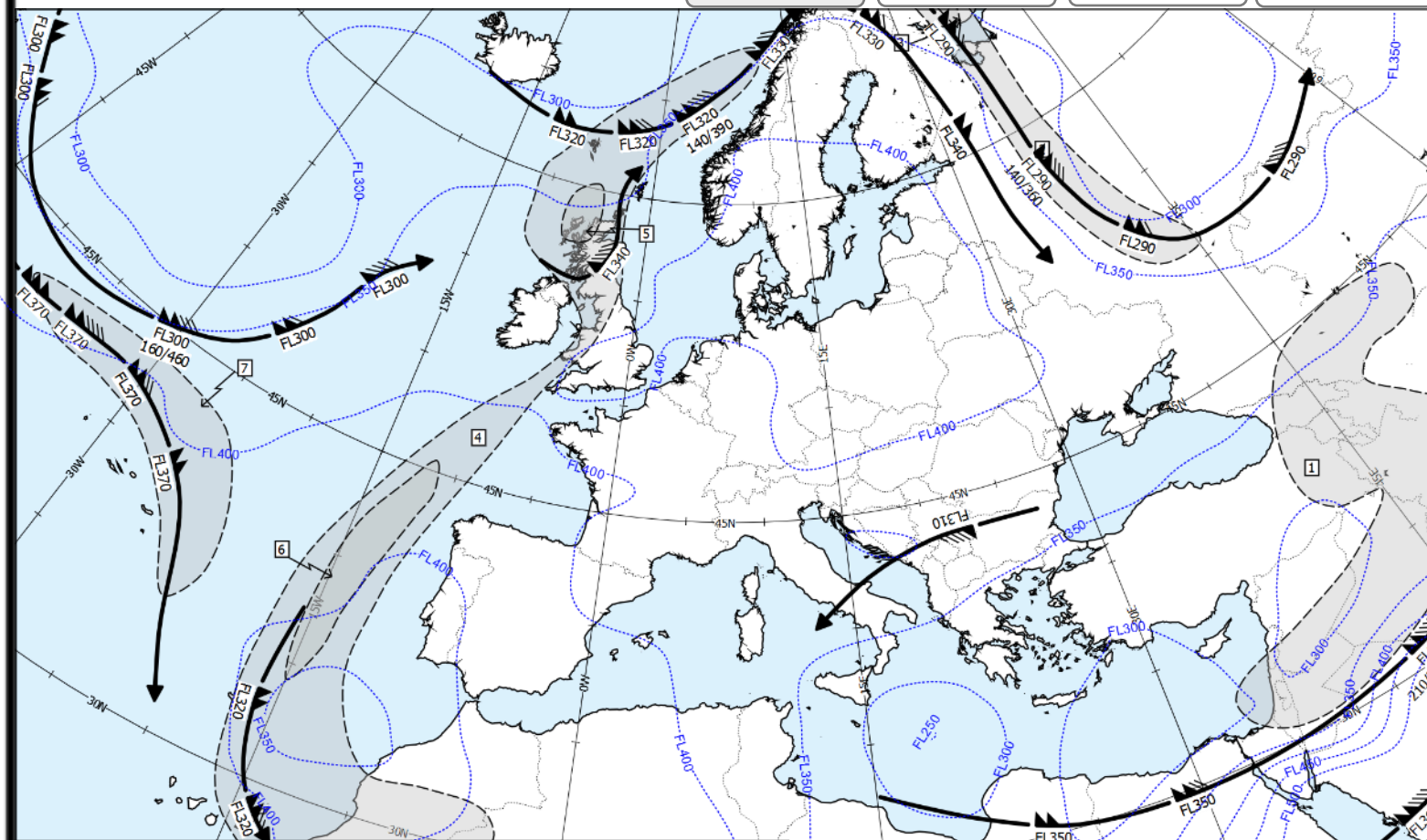
Overlays

Turbulence

CB

VA/TC/N

Flightpath



TURBULENCE

1 400 270 2 350 XXX 3 300 XXX 4 380 XXX 5 340 260 6 340 260 7 450 290

MODEL RUN TIME: 06UTC 15/02/2018
DATA PROVIDED BY WAFS LONDON

WAFS SIGWX - FL100-FL600

CB IMPLIES TS, GR, MOD OR SEV TURB AND ICE

UNITS USED: HEIGHTS IN FLIGHT LEVELS

CHECK SIGMET, ADVISORIES FOR TC AND VA AND ASHTAM AND NOTAM FOR VA

<< **T+12** >>
VT 18 UTC 15/02/2019

Jetstream

Tropopause

Icing

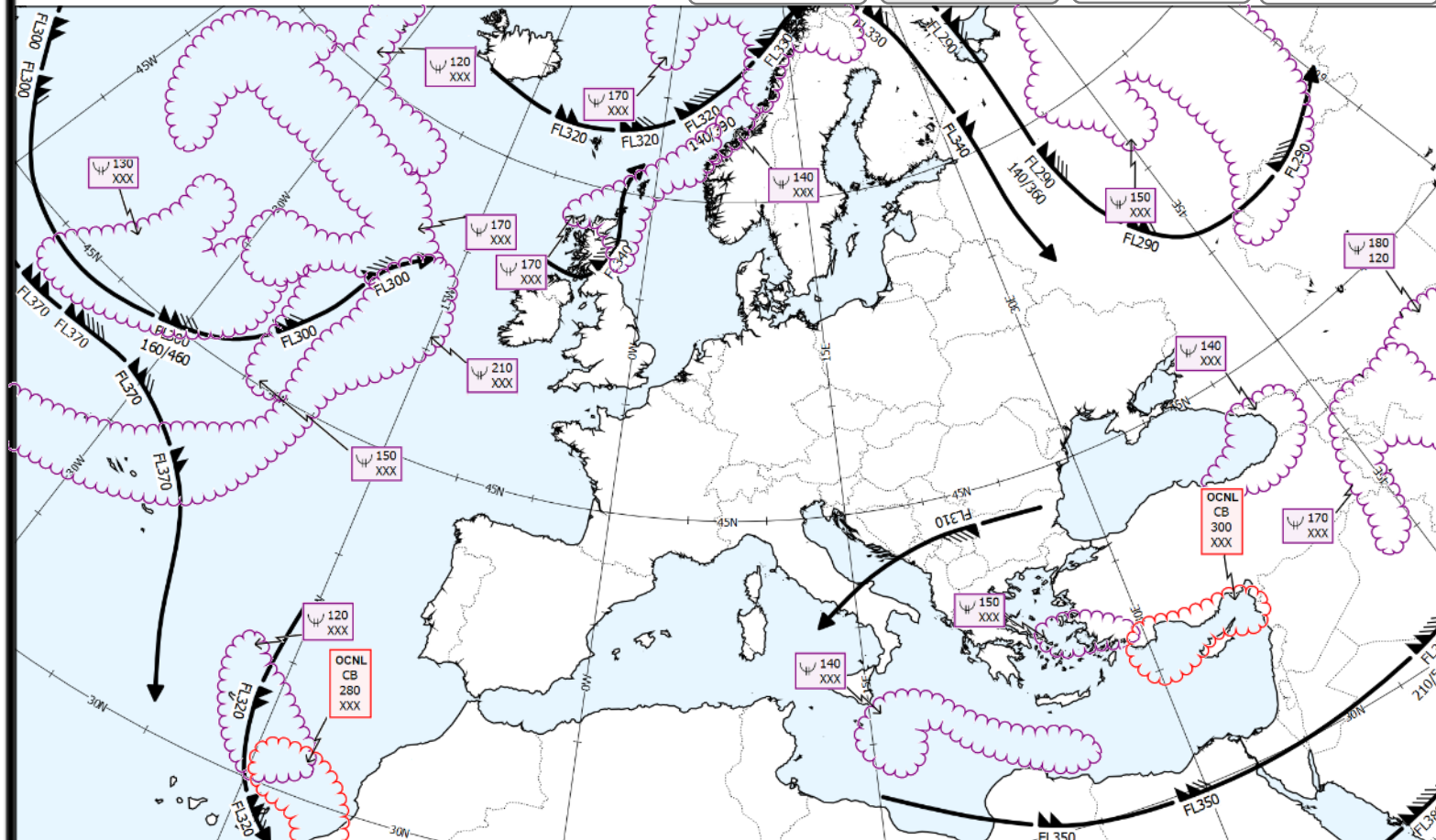
Overlays

Turbulence

CB

VA/TC/N

Flightpath



MODEL RUN TIME: 06UTC 15/02/2018
DATA PROVIDED BY WAFS LONDON

WAFS SIGWX - FL100-FL600

<< **T+12** >>
VT 18 UTC 15/02/2019

CB IMPLIES TS, GR, MOD OR SEV TURB AND ICE

UNITS USED: HEIGHTS IN FLIGHT LEVELS

CHECK SIGMET, ADVISORIES FOR TC AND VA AND ASHTAM AND NOTAM FOR VA

Jetstream

Tropopause

Icing

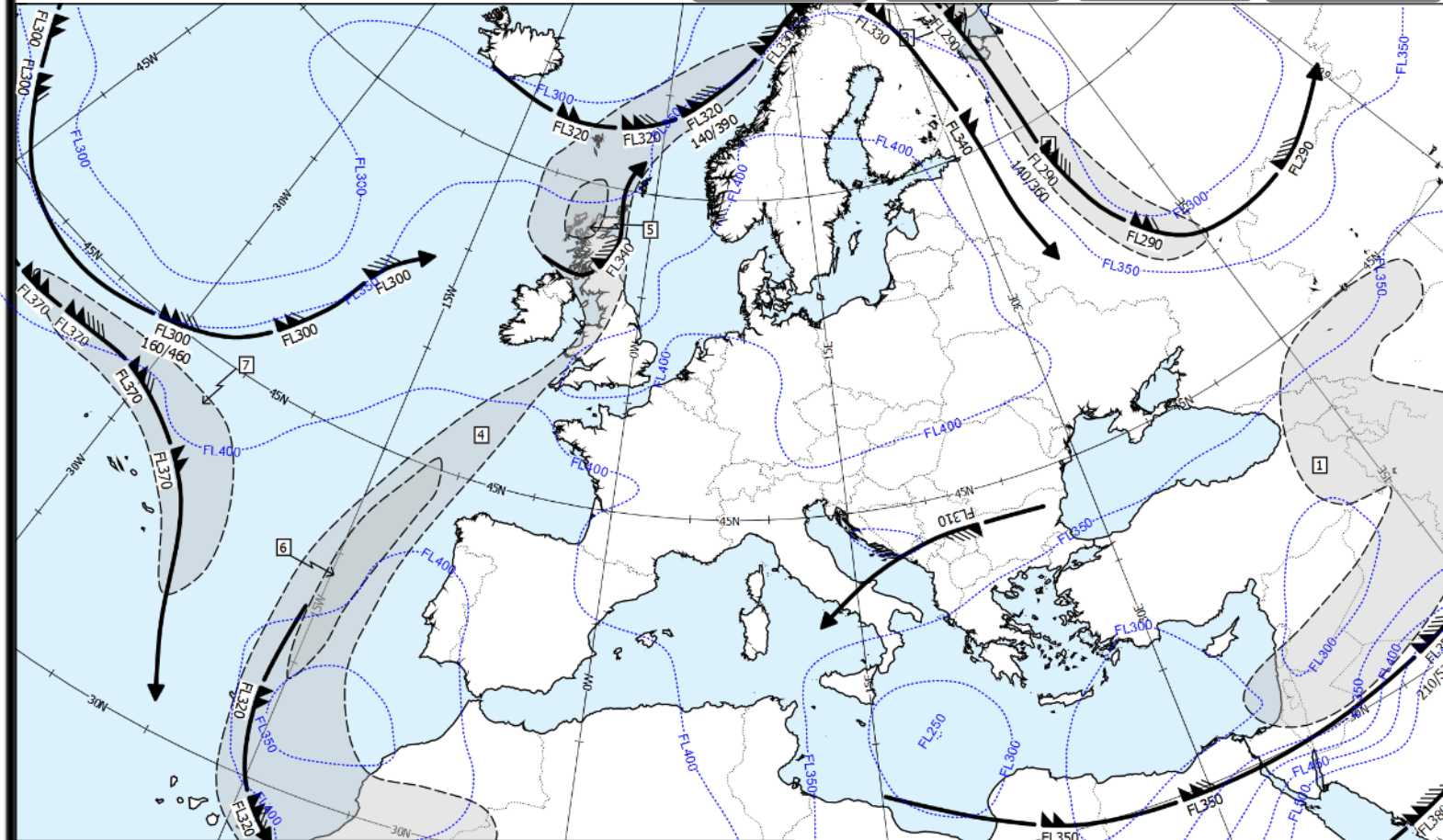
Overlays

Turbulence

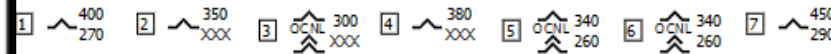
CB

VA/TC/N

Flightpath



TURBULENCE



MODEL RUN TIME: 06UTC 15/02/2018

DATA PROVIDED BY WAFS LONDON

WAFS SIGWX - FL100-FL600

CB IMPLIES TS, GR, MOD OR SEV TURB AND ICE

UNITS USED: HEIGHTS IN FLIGHT LEVELS

CHECK SIGMET, ADVISORIES FOR TC AND VA AND ASHTAM AND NOTAM FOR VA

<< **T+18** >>
VT 00 UTC 16/02/2019

Jetstream

Tropopause

Icing

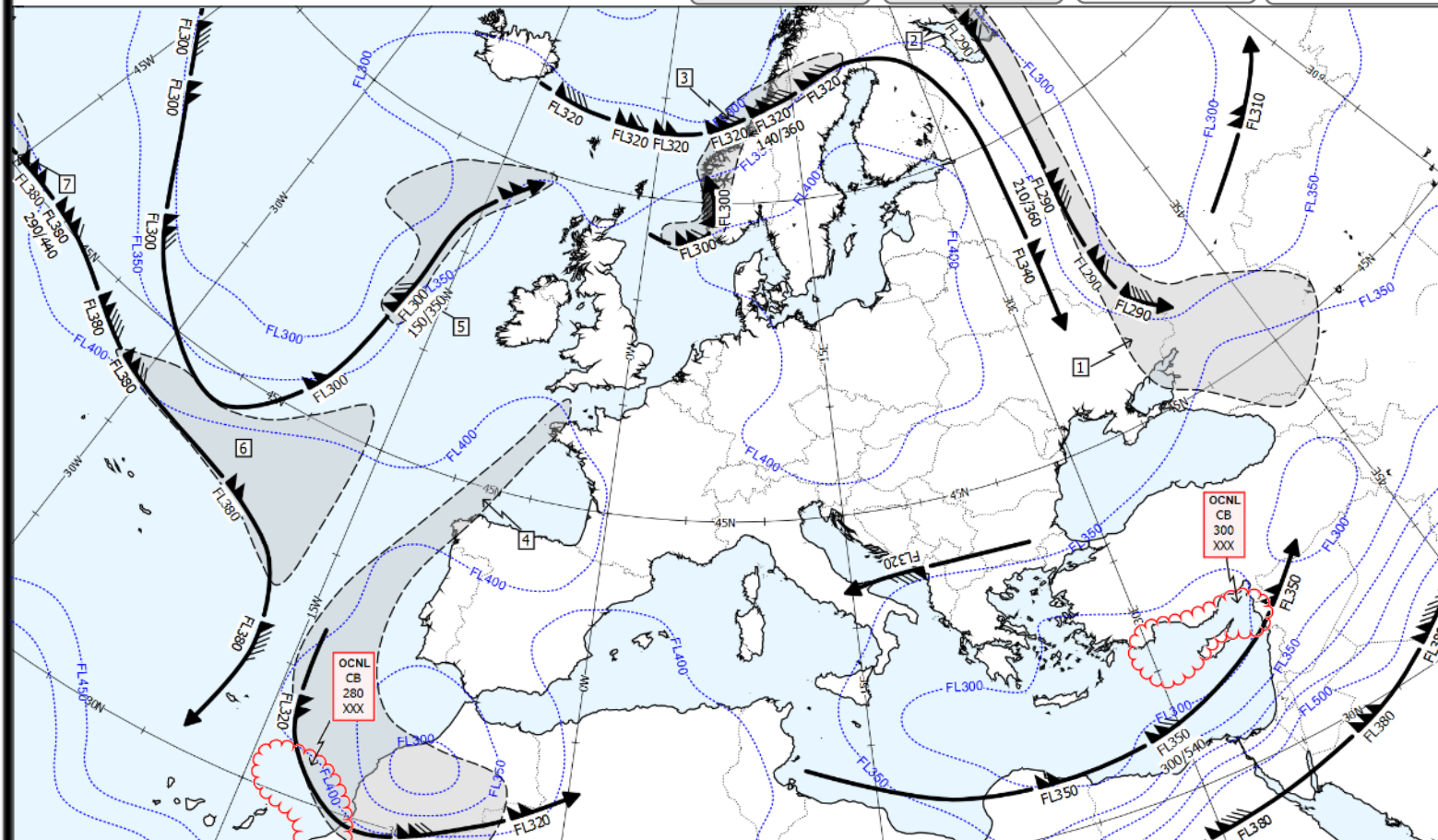
Overlays

Turbulence

CB

VA/TC/N

Flightpath



1 350 XXX 2 360 XXX 3 380 XXX 4 360 XXX 5 420 280 6 420 280

MODEL RUN TIME: 06UTC 15/02/2018
DATA PROVIDED BY WAFS LONDON



NEW WAFS SIGWX FORECASTS

The new SIGWX data will be provided in IWXXM format. The schema has been developed and approved by WMO <https://schemas.wmo.int/iwxxm/2023-1/WAFSSigWxFC.xsd>

The new SIGWX is designed for digital use, where users will be able to control the content that is shown on the chart (toggling layers on and off, changing time-step, colour schemes)

- Data will be available via the SADIS API.
- Briefing quality charts will not be provided, but charts that can be used for cross-checking/setup of systems will be available.



NEW WAFS SIGWX FORECASTS

If briefing charts are required, the user's system should create these. Benefits of this approach:

- User specific colour schemes, map area/projection/zoom
- Other features can be overlaid (e.g. flight paths, wind fields, or other non-WAFS weather parameters).



WHAT WILL HAPPEN TO THE OLD T+24 SIGWX CHARTS?

Medium and High level T+24 “Paper copy” (.png) charts will still be provided via SADIS FTP until 2028 on SADIS FTP. There will be some change in their content:

- The high level SIGWX will change to span FL250 to FL600 (changing from FL250 to FL630)
- Only OCNL and FRQ CB will be included (no Embedded CB)
- Tropopause spot heights will change to contours
- Turbulence areas will look a little different
- The in-cloud turbulence and icing areas will become icing only areas.

T+24 BUFR data files will continue to be provided via SADIS FTP until November 2026



METEOROLOGY PANEL



IMPORTANT

It is important to prepare for the upcoming SIGWX changes now. Please share the flyer with your airlines, flight planning organisations and others in the aviation industry to make them aware of the upcoming changes. Particularly what will change in the traditional T+24 charts and data.

NOV
2024

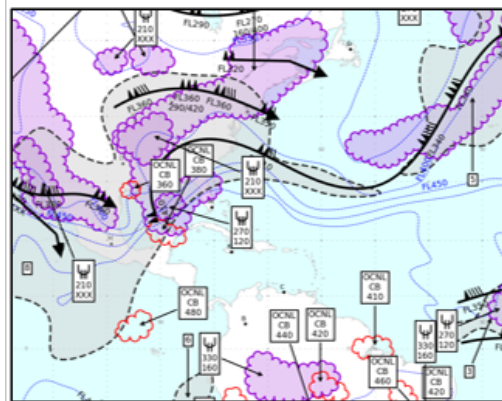
Changes to WAFS SIGWX Forecasts

NOV
2024

In November 2024 the World Area Forecast System (WAFS) SIGWX charts will be changing as the London and Washington World Area Forecast Centres (WAFCs) introduce multi-timestep SIGWX forecasts for the first time.

What is new:

- Forecasts will be produced for T+6, T+9, T+12, T+15, T+18, T+21, T+24, T+27, T+30, T+33, T+36, T+39, T+42 and T+48 timesteps, four times daily.
- The SIGWX forecasts will span FL100 to FL600
- The SIGWX forecasts will include the following features:
 - Jet stream information
 - Tropopause height contours
 - MOD and SEV Turbulence areas (this includes clear air and orographic turbulence)
 - OCNL and FRQ cumulonimbus areas, and cumulonimbus top information
 - MOD and SEV Icing areas
 - Volcano, tropical cyclone and nuclear emergency markers
- This new data is designed for digital use where users can control the map projection, zoom level, colour schemes, and are able to toggle individual features on and off.
- The new SIGWX forecasts will be provided in IWXXM format and will need to be visualised by you or your software providers systems before you can use it for briefing purposes.



Example SIGWX display

IWXXM FORMAT

IWXXM schema information is available here:

<https://schemas.wmo.int/iwxxm/2023-1/>

IWXXM SIGWX data is now available on the new SADIS API and WIFS API's now for testing and set up purposes.

Please contact the SADIS and WIFS provider for information:

wifs.admin@noaa.gov or SADISManager@metoffice.gov.uk



Met Office

Note: you may have seen earlier communications on changes to the WAFS SIGWX that involved retiring the medium-level SIGWX products in July 2024. This flyer supersedes that information.



TIMELINES

March 2023

- WAFS gridded data upgrade
- SADIS and WIFS API's available to access new gridded data sets

March 2024

- Test multi-timestep WAFS SIGWX forecasts in IWXXM format available on the SADIS and WIFS API's

November 2024

- WAFS SIGWX forecasts in IWXXM format becomes fully operational.

November 2026

- T+24 BUFR Format SIGWX data retired

November 2027

- Introduction of probabilistic WAFS forecasts (hazards), made available through the SADIS and WIFS API's

November 2028

- Retirement of SADIS FTP
- Retirement of the T+24 "paper copy" charts