

Updated Magnetic variation data for FS9 FSX-P3D-MSFS

Magnetic variation data calculated by FS9 date back from 1988 and have significantly changed (several degrees in some part of the world). Those used by FSX, P3Dv1-4 and MSFS are identical and date back from 2009. P3DV5 and V6 uses more recent data (around 2018-2019).

FS9, FSX, MSFS and P3D (all versions) calculate magnetic variation using a special latitude/longitude table that is contained in the MAGDEC.BGL file. Details on its structure and the way it is used by the simulator are available in this [FSDeveloper Wiki article](#).

The new provided MAGDEC.BGL table corrects all magnetic variations for FS2004 & FSX-P3D-MSFS based on values calculated from the [WMM2020 model](#) at epoch January 1st, 2024 and coded to the special normalized representation used in the MAGDEC.BGL file.

Some additional details on how the simulator use the different "magnetic variation" data (MAGDEC.BGL file, ILS, navaid and airport magnetic declinations as defined in BGL files) can be read in [this article](#).

This package contains updated (2024) MAGDEC.BGL files for both FS2004 and FSX-P3D-MSFS as well as a test and information program (Sim MagVar Calculator).

Installation of the new MAGDEC.BGL files

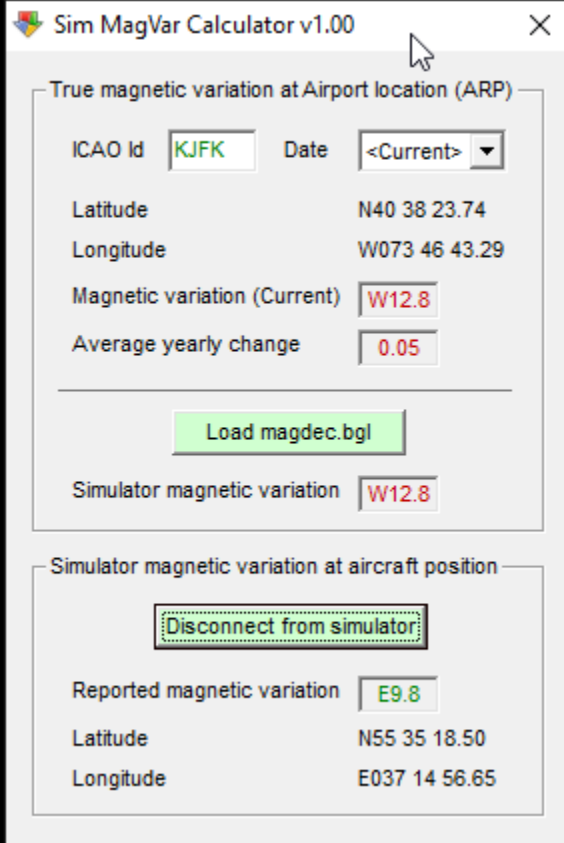
- Close the simulator since you will not be allowed to replace the file while the simulator is running,
- Locate the MAGDEC.BGL file. For FS9, FSX and P3D (all versions) this file is located in the *Scenery\Base\Scenery* subfolder of the simulator install directory
For MSFS, MAGDEC.BGL location depends on software provider:
Microsoft Store:
C:\Users\LOGINNAME\AppData\Local\Packages\Microsoft.FlightSimulator_8wekyb3d8b
bwe\
LocalCache\Packages\Official\OneStore\fs-base\scenery\Base\scenery
Steam:
(STEAM
DRIVE):\Steam\steamapps\common\MicrosoftFlightSimulator\Official\OneStore\
fs-base\scenery\Base\scenery\
- Keep a copy of the stock file somewhere or rename it as *magdec.bgl.bak*. (Do not use a bgl extension if the file is kept in its native directory). In case the file is protected/locked (MSFS Store edition) some additional actions will have to be performed in order to rename the file and subsequently copy the new file in the same folder,
- In the provided package, select the updated file you want to use, either FS9 or FSX-P3D-MSFS,
- Copy this new MAGDEC.BGL file in its original subfolder

Simulator will rebuild its index at first launch and the new magnetic variation data will be applied.

Sim MagVar Calculator

This small program will allow you to:

- Calculate real magnetic variation at any airport at the current date or at any date from 2015 to 2025,
- Calculate the magnetic variation at any airport from a defined MAGDEC.BGL file,
- Report the simulator magnetic variation at aircraft position while connected (FSUIPC or XPUIPC module is required).



Sim MagVar Calculator v1.00

True magnetic variation at Airport location (ARP)

ICAO Id Date

Latitude

Longitude

Magnetic variation (Current)

Average yearly change

Simulator magnetic variation

Simulator magnetic variation at aircraft position

Reported magnetic variation

Latitude

Longitude

Disclaimer statement

This package and its content are provided "as is" without warranty of any kind. I won't be liable for any damage that may be caused by it. It is released as freeware. As so, you are permitted to distribute it on any free media and on any mailbox or network that does not have a per-file download charge. If you like to include it to your own program, package or web site, please ask me.