

Maunal

THANKS AND NOTE

First of all, we would like to thank Matthias, who made the generator possible.

The time we spent together was worth it and we hope that it will also bring fun to many other gliding enthusiasts in FS2020.

1. From Kinetic version 12.4.1. the term "hospot" ist used, instead of "thermal" which is used up to 12.4.0
So use Hotsopt as Thermal as the same term.
2. We have only tested the Generator in Chrome and Edge and will not change this if the effort is too high.
Please use the latest Version of your Browser.
In the future, it is planned to run the programme in an external Electron environment. Please be patient.
3. The thermal generator is open source. For more information visit the [GDPR page](#) or [Linkpage](#).

Changelog: click on Version number top right in the Generator to see modifications.



THIS IS HOW IT WORKS:

Well, gliding in different weather situations is a very comprehensive thing.

When it comes to weather, the MSFS2020 can already handle a few things that make flying more realistic, as in the years before.

Winds that arise on mountain slopes, for example, are already supported, even if not to the same extent as in reality, but you can fly very well with it. What is not yet available are so-called thermal updrafts that rise upwards in a kind of tube or bubbles.

Influenced by the wind, similar to the smoke from a chimney.

It is a very complicated matter to determine where the "warm air tubes" arise and their complexity cannot be calculated in a flight simulator, since one has to assume the weather and landscape conditions in all their complexity.

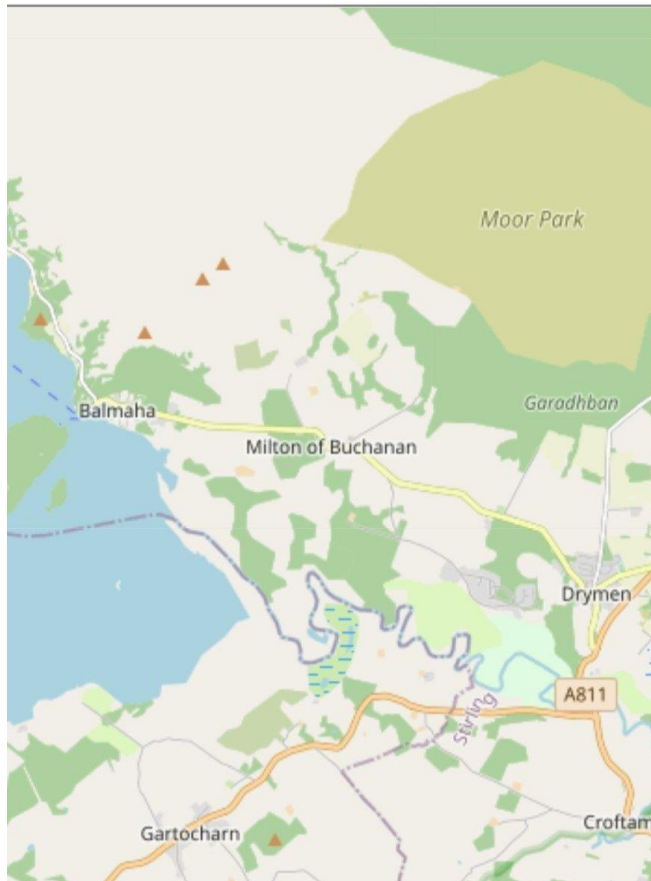
If the matter is so complicated, how do the thermals calculated in our thermal generator? Well, it's quite simple. They are NOT realistic. :-) The generator randomly searches for a spot and places a thermal there. Thereby, it varies between the tolerances that you can enter on the right side. Thermals can be created where they would not be in reality and the strength or diameter of the thermals does not correspond to the local conditions.

This doesn't always fit, but if someone is bothered by one or the other position, you can at least move it very easily.

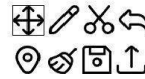
But otherwise it can be flown very well. Depending on whether you are a beginner or an advanced pilot. You can make the thermals wider and stronger or whatever you like.

From version 2.4, You can reload boundary and thermals separately and handmade thermals can be done inside or outside of a boundary. Generating new thermals will take handmade thermals into account.

INPUTS AND BUTTONS:



v 2.4.0



Count
50

Height Min (feet)
-500

Height Max (feet)
500

Diameter Min (nm)
0,3

Diameter Max (nm)
0,5

Speed Min (kn)
4

Speed Max (kn)
7

Generate

Reset

Save CSV

Generated thermals
0

Generally you should know that you can load several thermal files together into the *Kinetic Assistant*, which makes it more flexible. To learn more how *Kinetic Assistant* will manage Thermals, read Chapter 8 down on the [Kinetic Website](#)

Note: The Kinetic Assistant will have difficulty displaying thermals in the graphics window if the number is more than 1000 depending on the PC speed. But you can try it.

On top the eight mode buttons from top left to bottom right: Move, Draw, Cut, Undo, Create, Delete, Save, Load.

Input boxes:

Count: Target number of thermals within the boundary.

Height Min (feet): lower value for changing the effective height set in KA

Height Max (feet): upper value for changing the effective height set in KA

Note:

It increases the realism if the maximum height of the thermals is set to the basis of the cloud height in the weather setting of the flight simulator.

Diameter min (nm): minimum diameter of the thermal in nautical miles.

Diameter Max (nm): Maximum diameter of the thermal in nautical miles.

Speed Min (kn): Minimum speed at the centre of the thermal in knots.

Speed Max (kn): Maximum speed at the centre of the thermal in knots.

Generate: to calculate the thermals

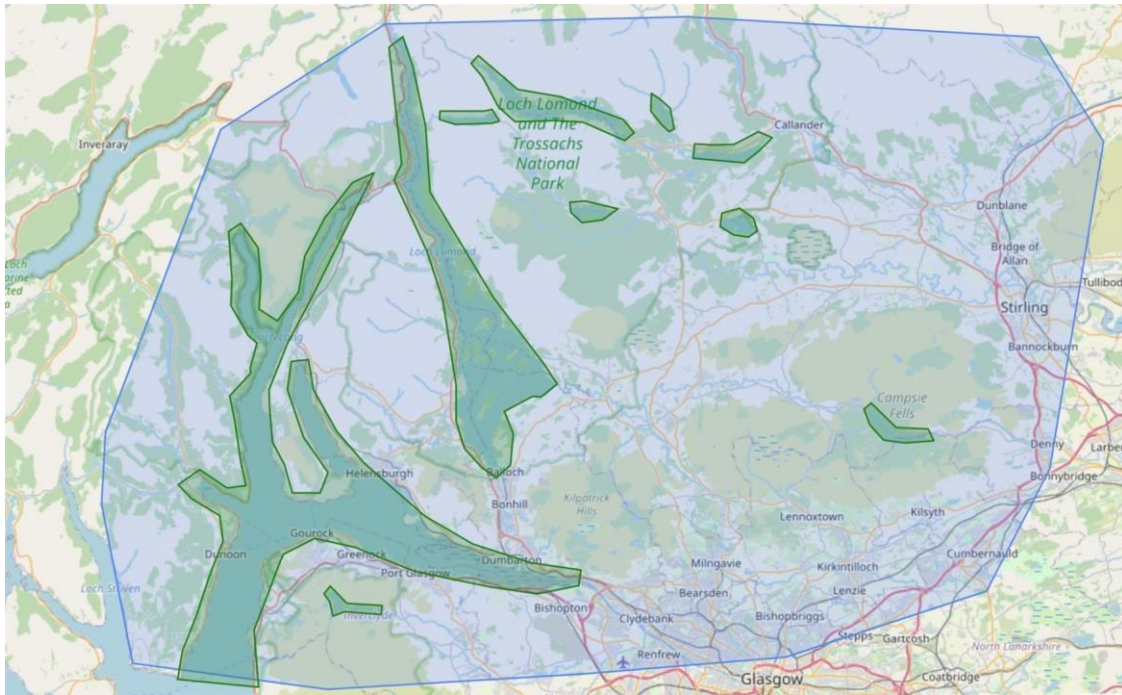
Reset: to delete everything and start from scratch

Save CSV: To save the CSV file for the Kinetic Assistant.

Display: **Generated Thermals**

The generator calculates locations where the thermals do not overlap. If the number under Count does not fit into the boundary, the number calculated is displayed here.

MOVING THE MAP AND CREATING A BOUNDARY:

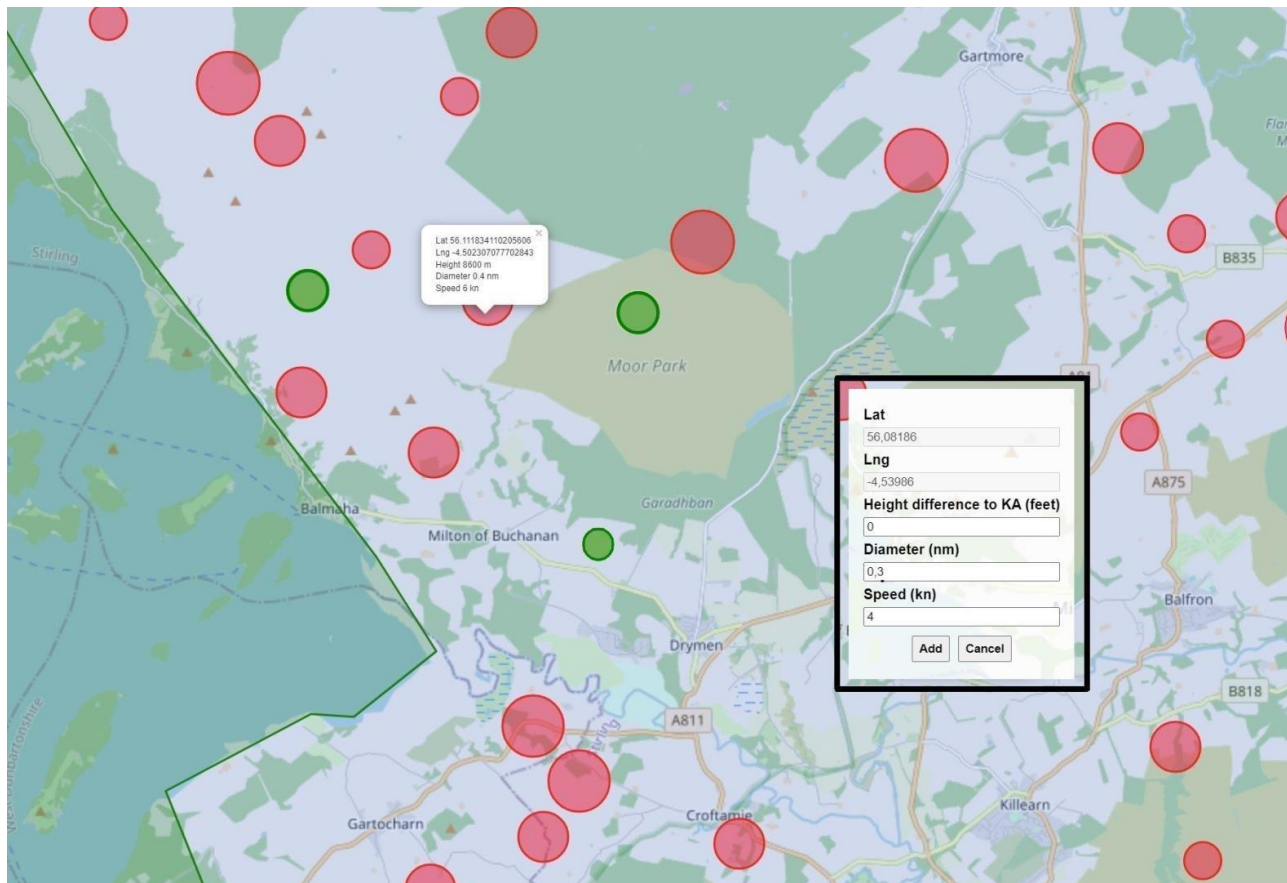


The map is initially focused on Balmaha

Move Mode is automatically activated when the page has been entered.

1. Move the map while pressing the left mouse button to where thermals are to be created.
 2. Zoom in and out by turning the mouse wheel.
 3. When done, switch to **Draw Mode**
 4. You can move and zoom the map while drawing.
- However, a point for the border is only created after the mouse button is released without moving the map.
5. Repeat and draw your boundary as you like. (Avoid self-cutting borders).
 6. Use the **UNDO** button to cancel inputs.
-
7. When the outer boundary has been drawn, areas inside where no thermals are to be created can be removed.
Activate the **CUT Mode** and create one or more borders to be cut out.
 8. Use the **UNDO** button to cancel inputs

GENERATE AND MANIPULATE THE THERMAL POINTS:



1. Click "**Generate**"

The thermals are shown as red dots on the map in about the same size as they are displayed in the Kinetic Assistant.

If you don't like the positions, click on Generate several times until it looks better.

But you can still simply move them by hand.

If Generate was pressed once, **Draw- and Cut Mode** disappears. To draw a new border **Reset** button must be clicked.

Move Mode was activated automatically.

2. Move or Zoom the map if needed (in **Move Mode**)

3. Click with the left mouse button on a thermal to read thermal data.

4. Move the thermal by pressing the left mouse button and move it to a desired location (in **Move Mode**).

5. Switch to **Delete Mode** and click thermals to delete them (can't undo).

6. Switch to **Create Mode** to create thermals manually. An input box will appear. Hotspots inserted by hand are shown in green.

Within a boundary, these are not deleted or moved during a new generation and no generated hotspots are placed over them.

Rember: If Hight is set to ZERO it will have the Hight set in KA.

Otherwise on +X will be higher and -X will be lower as set in KA.

Note: creating thermals via the *Create Mode* can also be done directly at the beginning without boundary.

SAVE CSV-FILE, SAVE AND RELOAD BOUNDARY AND HOTSPOTS:

1. Press the button **"Save CSV"** to save the CSV file for loading into the *Kinetic Assistant*. The File will be saved in your Download folder.

You have made an effort to create borders and thermals and want to reuse or optimise them another time:

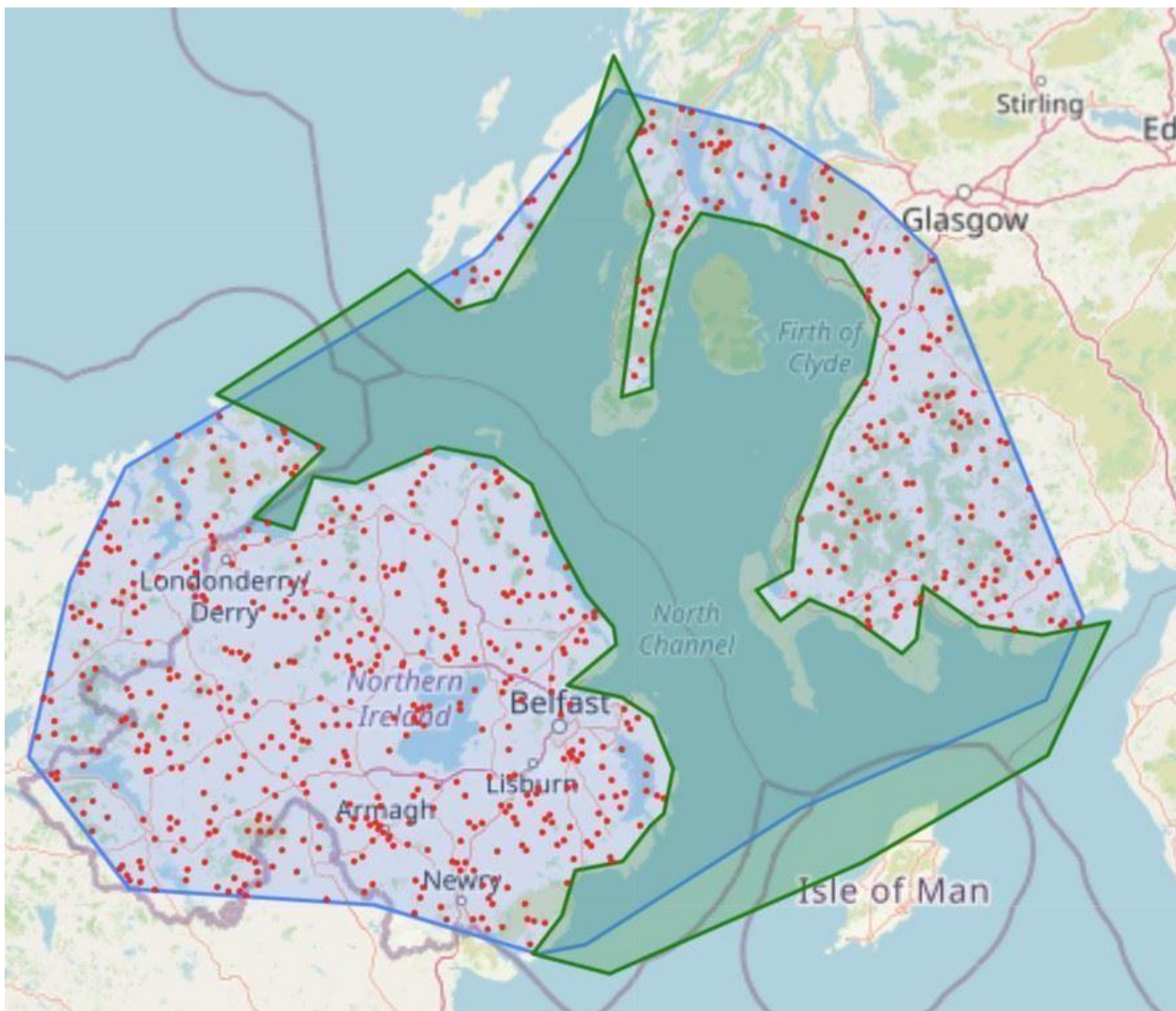
1. click on **SAVE** (Disk Icon, not Save CSV) to save the boundaries to a file on your PC. Rename if necessary
2. click on **LOAD** and select a previously saved file of the boundary (*.bon) or Thermals (*.csv) you want to restore.
3. You cannot change the boundaries afterwards. But you can generate new points as you normally would, or move them manually.

Reloaded points can be changed manually as usual.

Remember: saved files with thermal points or boundaries can be shared with friends to fly together in the same situation.

Known issues:

We have tested the programme extensively and found nothing so far. If something is not working correctly, we would be happy to hear from you. In an unstable situation, press "reload" on your browser menu. Then the generator will be completely restarted.



BE HAPPY:

1. To fly with friends, don't generate a file each other, but share it to have the same situation.

2. Create weather settings manually by modifying an existing weather preset file. This allows you to achieve settings that are not possible using the graphical operation of the weather settings. This is very simple.
3. Have fun flying and see the world from above.
4. Flying without engine power already protects the environment, you are taking a step in the right direction to keep the clouds as white as they are. ;-)

I don't think we will open a forum here.

Is something not working or do you have a suggestion?

You want to write how you like our little project? get

in touch on [MSFS2020 Forum](#)

or write an email <mailto:generator@matmax.de>

We look forward hearing from you!

See you in the sky.

Yours FlyYourselfVRSim Team

Watch out for the "RoterBaron63". ;-)



Changelog

v 2.4.0 22.04.2022

- ✦ Separated generated and manual thermals
- ✦ Changed metric for height from m to feet
- ✦ Changed default values for height parameter

v 2.3.0 21.04.2022

- ✦ Added option to load thermals

v 2.2.2 16.04.2022

- ✦ Scaled display of thermals to match kinetic assistant

v 2.2.1 02.04.2022

- ✦ Fixed a bug where generated thermals would still be visible after using undo
- ✦ Fixed a bug where manually added thermals would still be in the csv after manually deleting them

v 2.2.0 01.04.2022

- ✦ Added confirmation dialogue for resetting
- ✦ Changed color for boundary holes
- ✦ Fixed a bug that froze the application when generating thermals after loading a boundary
- ✦ Optimized the ui

v 2.1.0 31.03.2022

- ✦ Added tools for saving and loading boundary
- ✦ Added tool for creating boundary holes ✦ Added tool for undo last action

v 2.0.0 25.02.2022

- ✦ Added tool for manually adding thermals
- ✦ Added tool for deleting thermals
- ✦ Optimized generation of thermals

v 1.0.1 21.02.2022

- ✦ Removed overlapping thermals
- ✦ Changed parameter count to iterations ✦ Added counter for generated thermals

v 1.0.0 15.02.2022

- ✦ Initial Release