

Simple guide to using microFlap

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Microflap is not a very intuitive software program to use, but if it is set up correctly it is by far the best software for quickly analysing microlight and paramotor championship flights. This guide is intended to give an overview of some of the useful settings.

This guide does not explain the configuration of microFlap and assumes you have a .xch file which has already been set up with a map and is loaded with pilots and tasks and is in the same folder as all the .igc track files.



Toolbar

Hold your mouse over any toolbar icon to see its function.

Screen layout

There are three resizable frames in the microFlap window:

Left column. This is a tree of items. To view tracks: In the Tasks item, navigate to the Class and Task. Click on a pilot name for the track to be analysed and displayed in the main frame.

Analysis frame. Above the main map frame, shows information about every gps fix in the track.

Main frame. This shows the track and task overlaid on the map. For flight analysis the map is not needed except to help you get a sense of overall orientation. It is often easier to analyse a track with the map switched off. Do this by clicking the toolbar control.

Screen activity

One of the more quirky aspects of microFlap is the way the mouse behaves.

If the mouse pointer is over the analysis frame, then the analysis frame is **activated**, and the mouse wheel will scroll the list of points up and down. You can also scroll up and down this list with the up-down and page up-page down keys.

If the mouse pointer is over the main frame, then the main frame is **activated**, and the mouse wheel will zoom in and out, and the map can be dragged about by clicking and holding the left mouse button.

When the 'show position on map' toolbar item is active, the red circle indicates the fix selected in the activity frame. The red bar gives an indication of the pilot's speed and direction of travel at that fix.

When the 'move map to show position' toolbar icon is active AND the mouse pointer is over the analysis frame, it is possible to follow a track as it was flown by scrolling the mouse, or at high speed by holding down the down key, or at even higher speed by holding down the page down key.

You can of course select any fix in the analysis frame and that fix will be displayed in the main frame, but you can also do the reverse by **right clicking** on any track point in the main and you will be taken to that point in the analysis frame.

Events

The result of microFlap applying a track to a task are analysis **events**. Events are displayed when the toolbar item is active. On the image above, the selected fix is at 07:25:25 and that is where the red circle on the map is. The next fix at 07:25:30 has been analysed by microFlap to be the nearest fix to where the zone around turn point 085 was penetrated. There is a further event at 07:25:55 which is analysed to be the fix where the pilot was nearest to turn point 085 when the pilot was 8 metres away from it.

microFlap analyses a variety of events including:

- **IGC Event:** GPS connect or disconnect. These appear at the beginning and end of the whole track, but they will also show up periods within the track when the GPS was not receiving data.
- **IGC Event:** Pilot event. This is when the pilot pressed the 'mark' button on the flight recorder.
- **Enter and exit turn point area.** When the pilot enters and exits the scoring zone around a turn point.
- **Turn point.** The point at which the pilot was nearest to the centre of a turn point.
- **Best approximation to turn point.** This is the point at which a pilot was nearest to a turn point but never entered it.
- **Maximum distance to turn point.** This is the point within the whole track at which the pilot was furthest away from a turn point. These are often useful for analysing 'out and return' distances.
- **Start and end of leg.** These are effectively gates at the beginning and end of a leg and are the width of that leg.
- **Exit leg and Enter leg.** This is when the side of a leg is exited and entered.
- **Gate.** This is the fix when the pilot is deemed to have crossed a gate in the correct direction.
- **Inverse gate.** This is the fix when the pilot crossed a gate in the wrong direction.
- **Best approximation to gate.** This is when a gate has been missed, and the distance column will say by how much.
- **High acceleration.** This is often an indication the GPS was not in a very good position to receive satellite signals and the track 'appears' to have been subject to an unusual change in speed.

Filters

It is possible to analyse a huge variety of competition tasks by using the appropriate events, however, even with the 'fast scrolling' technique explained above it still takes some time to scroll through a whole flight just to find the events you need. Filters make this a lot easier and really bring out the power of microFlap.

Filters are found by clicking the **right** mouse button when the cursor is over the **analysis frame**.

The screenshot shows the MicroFlap software interface. On the left is a task catalogue tree. The main window contains a table of flight data and a map. A context menu is open over the map, listing various filter options.

N	Time	Lat	Lon	Easting	Northing	Alt	Vel	Distance	Check	Event	Event specific
1589	08:59:00	40° 14' 05.93"	116° 21' 15.90"	445 082	4 454 038	276	46	265	L: 075 -	Exit leg	Not started
1594	08:59:25	40° 14' 14.88"	116° 21' 13.08"	445 018	4 454 315	286	44	272	L: 053 -	Exit leg	98.3%
1602	09:00:05	40° 14' 16.44"	116° 20' 56.58"	444 628	4 454 366	355	38	240	L: 053 -	Enter leg	88.1%
1711	09:09:10	40° 14' 40.67"	116° 16' 17.51"	438 040	4 455 164	432	45	23	G: 053 -	Gate	
1787	09:15:30	40° 14' 46.61"	116° 13' 01.13"	433 402	4 455 387	407	42	106	L: 053 -	End of leg	96.8%
1788	09:15:35	40° 14' 47.82"	116° 12' 58.50"	433 340	4 455 424	407	52	148	T: 036	Enter turn point area	
1791	09:15:50	40° 14' 51.29"	116° 12' 52.20"	433 192	4 455 533	394	45	20	T: 036	Turn point	69.775
1795	09:16:10	40° 14' 59.87"	116° 12' 55.26"	433 267	4 455 797	385	52	262	T: 036	Exit turn point area	
1881	09:23:20	40° 15' 57.36"	116° 15' 08.04"	436 419	4 457 542	82	30			High acceleration	-0.22
1969	09:30:40	40° 15' 58.69"	116° 15' 10.13"	436 468	4 457 521	91					

- Turn point
- Turn point - Enter/Exit
- Turn point - Best approximation
- Turn point - Maximum distance
- Gate
- Gate - Inverse
- Gate - Best approximation
- Leg
- Leg - Enter/Exit
- Track - Intersection with own track
- Track - High acceleration
- IGC events (including Pilot Event)

View track points Ctrl+P
View events Ctrl+E
Select events
Select all events Ctrl+A
De-select all events Ctrl+D
Copy to Clipboard Ctrl+Ins
Copy point Time to clipboard Ctrl+T

The first filter to apply is to unselect **view track points**. There is also a toolbar item for this. This will hide all the fixes in the analysis frame which have no associated event. Suddenly it becomes much easier to see the stuff you want to analyse, and with the mouse cursor over the analysis frame and with the 'move map to show position' toolbar icon active it is possible to scroll up and down all the events very easily while inspecting them on the map.

You can further clarify things by only having the events you need selected. For example, in a cats-cradle task you are likely to only be interested in **turn points** and with everything else filtered out you will have a nice simple list of just the valid turn points a pilot visited, in the order he visited them.

The beauty of filters is that they are persistent – once a filter is set up you can select another track from the list in the left column and it will be displayed with the same filter.

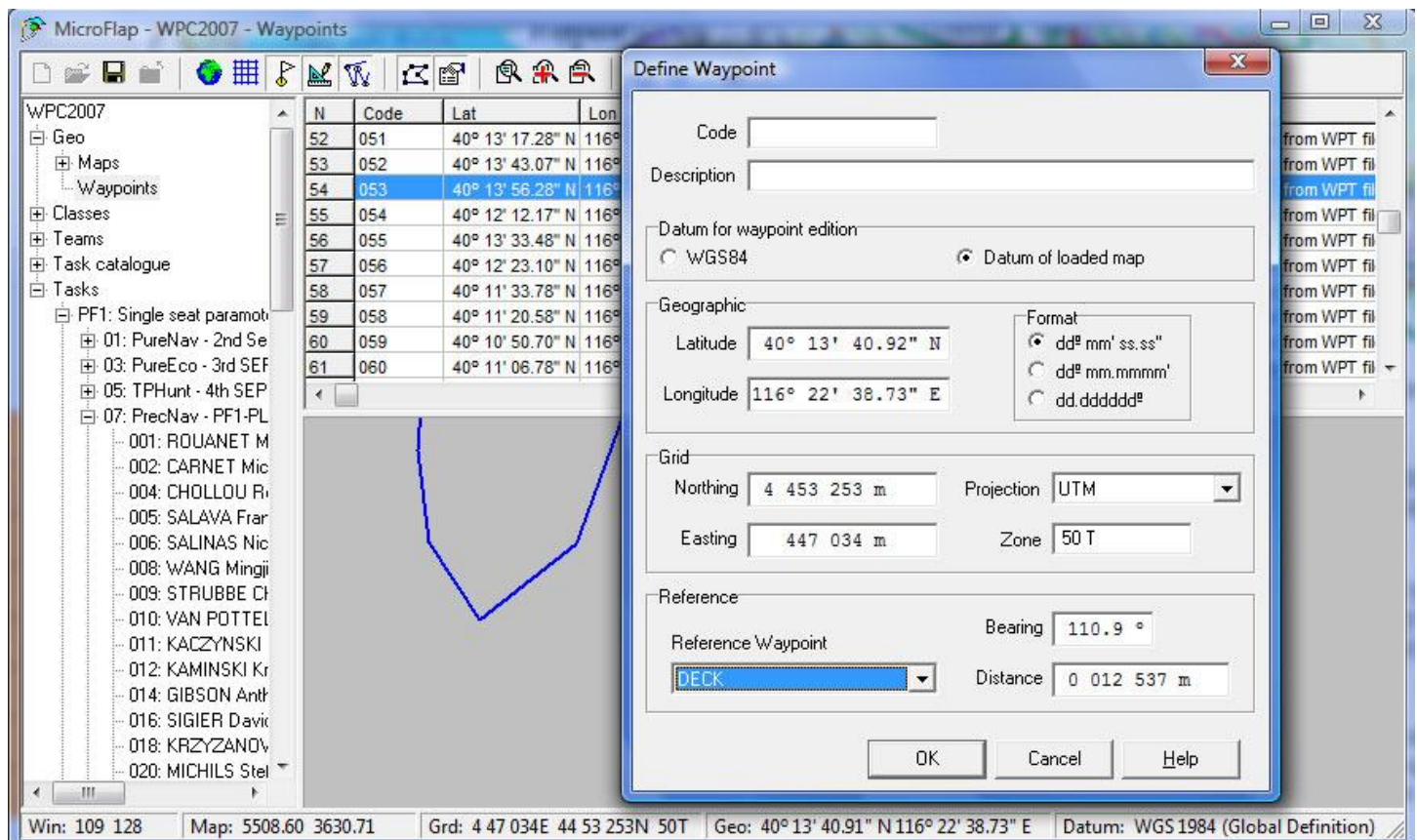
How to find the distance to a point

It is often necessary to find how far a pilot is from a reference point, but this either does not appear as an event, or the pilot was at a maximum distance from that point at some other time in the flight.

There is nevertheless a simple technique to do this so long as the point you want to use as a reference exists in the waypoints catalogue. Normally only the waypoints associated with a task are

displayed on screen (in green) but you can see them all by selecting 'show waypoints on map' in the toolbar and all the waypoints will be displayed in yellow.

- 1 Make sure 'move map to show position' on the toolbar is deactivated.
- 2 Zoom in closely on the track to the point where you want to measure from.
- 3 In the left column select Geo – Maps – Waypoints which will display the waypoint catalogue in the analysis frame.
- 4 **Right click** on the main frame at the point you want to measure from. This will bring up the **define waypoint** dialog. In fact you don't want to define a new waypoint, but what you can do in this dialog box is select a **reference waypoint** and the bearing and distance from your point to that waypoint is displayed in metres.
- 5 Click **cancel** so you don't actually create a new waypoint in the catalogue.



Google Earth

In a task, right click on a pilot name in the left column and the pop-up menu offers the option to **View track in Google Earth**. If you select this, and you have Google Earth installed on your computer, the track complete with task will open in three dimensions in Google Earth.

