

RASP-UK -- Frequently Asked Questions

Q: Why is there a dotted line round each map?

A: Each forecast represents a portion of the “world's surface” derived by solving the equations describing atmospheric motion. Because it is only a portion, it cannot know about what is happening outside of that region, and so there is a region of adaptation between “nothing” and the forecast region. The dotted line indicates this region.

Q: Which Parameters should I look at?

A: Good Question! The short answer is “What works for you”. First you should understand what they all mean. Start with “Basic thermal forecast parameters” at http://www.drjack.info/RASP/INFO/basic_parameters.html You could then move on to the (more complete) “Parameter Descriptions” <http://www.drjack.info/RASP/INFO/parameters.html> , each of which has a “More Info” link. But a good start (for Thermal Soaring) might be those Parameters in RASPTable which are in blue (and **bold** if you view with Firefox).

Q: What does the mouse button do in RASPTable?

A: See the RASPTable Introduction - <http://rasp.inn.leedsmet.ac.uk/RASPTableIntro.html>

Q: Why does the Run Schedule matter?

A: The schedule of runs – for different Grid Resolutions, Initialisation Times and Days - has been optimised to provide the best service for the most people. As always, it is not possible to “please all the people all of the time”. Importantly, if you look at a forecast for a day during the run, some forecasts for the day will have been done some time previously, others more recently. You can check the relevant data at the top of each map. It is good to know about the Run Schedule at <http://rasp.inn.leedsmet.ac.uk/Schedule.html> and also about the Status Check at <http://rasp.inn.leedsmet.ac.uk/cgi-bin/statusChk.cgi> to see what is going to happen and what has been completed.

Q: What is the “Expert's Interface” for? Two interfaces to the Forecast Maps?

A: Those who are familiar with the RASP setup may know *exactly* what they want to see and not need anything other than direct access to the forecast they need. This is quicker via the “Experts Interface”. But many will like the ability to move easily through the day with a mouse click as provided by RASPTable.

Q: What does “Resolution” mean?

A: Forecasts are produced by solving the “equations of motion” for the atmosphere. Since this is done on a digital computer, it can only be done at discrete intervals – in time, horizontally (N-S & E-W) and vertically. The closer the spacing of these intervals, the better the Resolution.

Q: Why not do everything at the best resolution?

A: Computer run time goes up *dramatically* with finer resolution. For example, on the current hardware and for the whole of the UK, a 12 Km run for the UK takes about 40 minutes, a 5 Km run about 2.5 hours and a 4 Km run about 5 hours. The time to download the initialisation data must be added to this, and of course nothing can start until this is available – typically 3 ½ hours after the time to which it relates. Obviously, a forecast which is out of date before it is available is not very useful!

Q: Why are only 4 Km runs archived?

A: They are the most detailed, and disk space is limited.

Q: What is Initialisation Data?

A: Forecasts have to start with something – the state of the atmosphere “now”. This data is available on the web, and is the start point – the Initialisation Data – for the RASP forecasts.

Q: Why are there some days missing in the archive?

A: Sometime things break – or get broken. Recall: RASP forecasts are still a Work in Progress!

Q: What's all this about TrackAverage?

A: This is for Cross Country pilots. You should have some nice tasks lined up ready for your “Next Challenge”. Which one is achievable today? When should you start? TrackAvg tries to answer such questions. To use it, you need to put your glider details, the BGA TriGraphs for your task, the ballast (water) if applicable, and so on into the form and it will indicate, based on “Speed to Fly” theory, how long it will take, and at what speed you can (or cannot) do the task. There is also “Track Start Time”, which prints the Headline figures from TrackAverage – and so indicates the best time to start. Be aware that it is very slow because it has to do a Track Average calculation for every start time.

Q: Who wrote this software?

A: Like all the best projects – *lots* of people. The core of the forecasting code is the “WRF” code (Weather Research And Forecasting – <http://wrf-model.org>). But DrJack (Dr Jack Glendening - retired Research Meteorologist and Soaring Pilot) got the show together and wrote all the “glue” that builds it all into a package that is usable for soaring forecasts. It was he who knew how to get information useful for soaring from the WRF data. RASP really is his show. See his website - <http://drjack.info>

Q: So what did you do?

A: Not so much really. I configured the software for the UK, got the hardware together and got it all hosted. Plus a few presentational enhancements(?) - e.g. this page.

Q: What's a BLIPMAP?

A: Boundary Layer Information Prediction Map. These were actually the precursors to RASP and are available in (some regions) of the USA – where DrJack lives.

Q: What is the “Boundary Layer”?

A: We're into *technical* meteorology. But it's that part of the atmosphere where the thermals happen. This was DrJack's area of research – see Dr Jack's site.

Q: And what about Wave?

A: First, this is not a Boundary Layer phenomenon – that's why you can (sometimes) get above it. RASP forecasts this (to some degree, but nevertheless with some success – witness John Williams' Award winning flight http://www.drjack.info/RASP/INFO/NEWS/johnwilliams_ewwaveflite.html). From a forecast point of view, it is really difficult as it requires the highest resolution possible – better than 4Km would be good. The problem is computer run time for high resolutions. Wave forecasting is at the leading edge of RASP and is very definitely Work in Progress.

Q: Why not forecast a smaller area at higher resolution?

A: Work in Progress! Some RASP operators have produced multiple “windowed” forecasts for interesting areas. The problem – as always – is computer run time.

Q: What are “Soundings”

A: Originally they were the Temperature and Dew Point measurements from balloon ascents. Now they mean graphs of these parameters (together with wind and some other parameters) on a “Tephigram” or on a “Skew-T” plot (as in RASP) . When you can understand them, they tell you virtually all you need to know about the air. WeatherJack has done some excellent tutorials on Soundings, which are still available (See <http://s214580749.websitehome.co.uk/tutorials/tut-soundings/tut-snds-01.html>)

Q: How many soundings are provided?

A: Currently there are 15 Soundings provided, at every forecast time, distributed around the UK.

Q: Why can't I have a Sounding for where I am now?

A: You can. If you go to RASPTable, Click the button labelled “Press for SkewT PopUp” and press Shift-Click on the map, you will get a SkewT PopUp for that location and time. It has to work it all out, so it's not very fast.

Q: Weatherjack used to do a Star Rating for each day. Why is there not anything like this for RASP?

A: Weatherjack did this by hand, and he has LOTS of experience. Again, this is a Work in

Progress. There are *experimental* attempts on the RASP-UK site, but they are not yet ready for publication.

Q: Why no forecasts for the night?

A: Not many folk soar at night, and it's not even legal in the UK. And what did we say about computer run time?

Q: What do all the various parameters tell me?

A: See DrJack's Parameter Descriptions:
http://www.drjack.info/RASP/INFO/basic_parameters.html

Q: How do the Maps get worked out?

A: The "Equations of Motion" for the atmosphere are solved, so it is a *calculated* forecast for a limited area (and for so a limited number of grid locations). The Grid Points are spaced at 4 Km for the current day, at 5.1 Km for tomorrow and at 12 Km for the rest of the week.

Q: Why do the plot scales change throughout the day?

A: There has been a lot of discussion about this. Some parameters *are* fixed: the percentages and thermal strength (wstar & derivatives). Otherwise, it is a difficult problem. But do note that you can get the actual values by clicking on the map if you use the RASPTable interface. See <http://rasp.inn.leedsmet.ac.uk/RASPTableIntro.html>

Q: What hardware does it run on?

A: The current hardware is a Q6600 Core 2 Quad CPU (4 x 2.4 Ghz) in a Striker-2 motherboard (1600 Mhz FSB) with 4 GiB RAM: it's actually a Games machine. The web server is a separate machine of rather lower specification.

Q: What language is the program written in?

A: The core programs are written in Fortran (by the WRF), but the "glue" that controls the run sequence, etc, is Perl. Graphics generation uses a special language "NCL" which drives the core graphics engine (I think written in Fortran). However use is made of many utilities provided by the (Linux) Operating System (e.g. graphic file format conversion, web server, ...) which are generally written in C. It's a hotch-potch: use the best tool available for the job!

Q: What about Ridge Sites? Could RASP indicate whether they are soarable?

A: It does! See the "Wind Tool" at <http://rasp.inn.leedsmet.ac.uk/WindTool.html> which shows whether the Ridges at BGA Club sites are usable.

Q: Can I do a “post-mortem” on my flight?

A: Yes. 4km forecasts are archived and available through the RASPTable. TrackAverage can also access the Archive.

Q: When did the archiving start?

A: Archives are available from 13 June 2008. The previous 6 months are available on-line. If you want something older than 6 months, contact me: data from June 2008 is available on DVD.

Q: What is RASP best at?

A: A hot research topic! But it is generally quite good at Temperature, Dew Point and Thermal Strength, and Cloud Base is quite good. And the Wave Forecasts have been found useful. But it does have trouble with North Sea stratus (so when the wind is, for example, from the NE). Check the Sat-Pics!