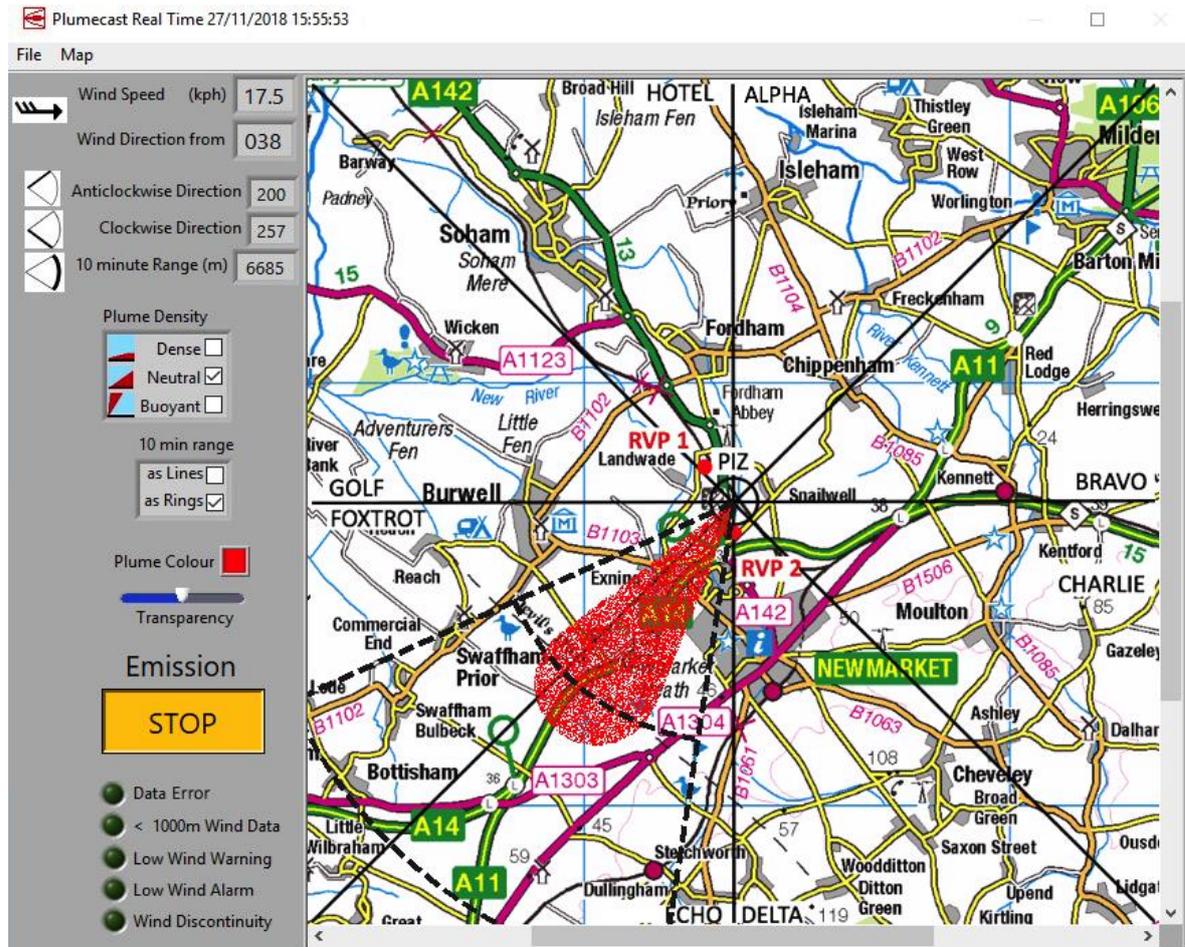




Plumecast displays.

Plumecast is intended to give real-time displays of both area at risk and the position of a plume if a release does occur. The area at risk is shown by lines, the best estimate of the area the plume has reached is plotted as it happens in real time. To assist incident managers 'range rings' are drawn to indicate how far the plume is likely to travel in a ten minute period. The picture below shows a plot drawn using Plumecast.



For further press information, images or product testing, please contact:-
 David Ellis, Sales & Marketing Director
 E-Mail: david@r-p-r.co.uk Mobile: 00 44 7805 793 706

Richard Paul Russell Ltd

British specialist company dedicated to the design and marketing of high quality electronics. Richard Paul Russell Ltd was founded in Lyminster, England in 1992.

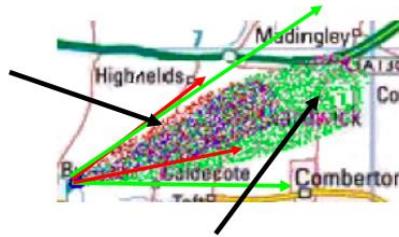
The company is widely regarded as a market leader in wind and weather instrumentation and are the UK distributor for Kestrel hand held wind instruments. Richard Paul Russell Ltd also supply complete weather instrumentation solutions using Windsonic and MetPak technology combined with a bespoke display unit and a range of data loggers under the SpaceLogger brand.

Richard Paul Russell Ltd have supplied the sailing elite including America's Cup teams and Olympic medallists. SpaceLoggers are being used for numerous applications including record keeping for the medical decontamination market and the automotive market.



Pure red shows where the plume was but has now cleared.

Arrows show original spread (red) and final spread (green)



Pure green shows where the plume is.

The development of Plumecast takes a 'fail-safe' approach. For example the plume displayed during an incident includes not only the area where the plume is but also the area where it has been. This is because some pollutants can leave an area hazardous even when the plume has been moved away by a change in wind direction. The area at risk can be limited to some extent if the user can specify whether the released material is denser than air, of neutral density or buoyant.

In addition to local displays Plumecast can be configured to give XML format output representing the area at risk. This allows information to be shared with other emergency response software and GIS systems.

Factors considered by Plumecast

The position of the area at risk lines is determined by a number of factors including the current conditions measured by the sensors, both mean wind and turbulence characteristics. Plumecast uses recent wind data up to the last 10km run of wind.

There are also allowances for likely wind shear through the boundary layer and the change in wind direction that is likely in a given time. These are themselves dependent on the current conditions and are often neglected by other plume modelling systems.

The area at risk is constantly re-calculated as conditions change. For example, statistically the change in mean wind direction that is likely in a given time depends on wind speed; in simple terms stronger winds are less likely to change than light winds. This allows Plumecast, using empirical rules, to constantly adjust the area of risk accordingly. In a similar way allowances for wind shear, both in speed and direction, are assessed using established relationships connecting it to latitude, surface roughness, wind speed and atmospheric stability. Plumecast uses time of day and site location to calculate local sunrise and sunset which are used in these assessments.

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