

Speed Analysis

What's New - MTE v3.1x

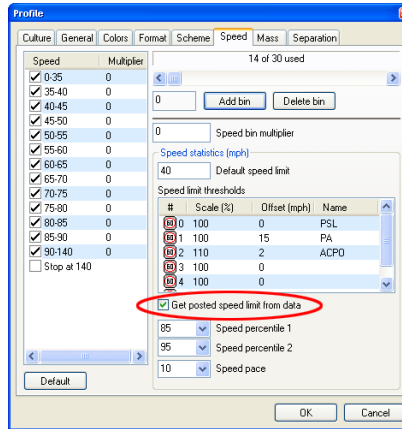
3.16

August 2005

Speed Analysis

Automatic Speed Limit

There is a new option in the Speed page of the Advanced Profile settings - **Get Speed Limit from data**.



Setting the Automatic Speed Limit option.

If this option is checked, MCRReport will look in the site **Description** field for a speed limit in the following form:

- Must be enclosed in angle brackets < >
- Default is km/h. Append an 'm' or 'M' for mph.
- The speed limit can appear anywhere in the description, but other angle brackets cannot be inserted when using this feature.

Example Site Descriptions	
km/h	mph
Hay St <60>	<40 mph> Speed test, Euston Road
<60km/h> Hay Street	ACPO test, Harrow Road <40m>
Hay St, <50 km/h> study	Harrow Road, PSL=<40 MPH>

If this feature is enabled, the following will result in the posted speed limit being set to zero:

- MCRReport does not find a valid speed limit in the description.
- Using multiple files with different speed limits in a single report.

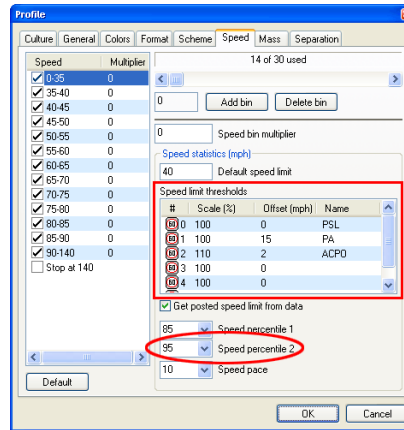


Note: This feature can be applied to your existing data files by editing the site description using the "Transform data file" feature in the File Tree.

Speed Statistics

The speed statistics options in the report Profile have been expanded to include:

- A second percentile.
- 10 extra speed limits.



New speed statistics options

The extra speed limits are based on the Posted Speed Limit (PSL) using the formula $(PSL * \% / 100) + \text{Offset}$. Note also that each limit can be named, which will be displayed on reports. Simply double-click a limit to change. Speed limits that are the same as the PSL (ie. 100%) will be suppressed.

Many of the speed related reports now display a common speed statistics summary as shown below.

Vehicles = 125765 Posted speed limit = 80 km/h, Exceeding = 84352 (67.07%), Mean Exceeding = 86.88 km/h **Limit 1 (PSL+10%)** (80 * 110%) + 0 = 88 km/h, Exceeding = 27223 (21.65%) **Maximum** = 174.7 km/h, **Minimum** = 0.0 km/h, **Mean** = 83.2 km/h **85% Speed** = 90.0 km/h, **95% Speed** = 95.8 km/h, **Median** = 82.4 km/h **20 km/h Pace** = 73 - 93, **Number in Pace** = 107015 (85.09%) **Variance** = 60.72, **Standard Deviation** = 7.79 km/h

Mean Exceeding

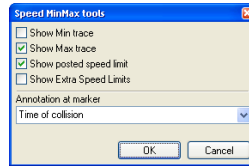
Mean Exceeding is a new calculation in the speed statistics summary. This is the average speed of those vehicles exceeding the posted speed limit.

Mean Exceeding is also an optional field in the Custom List report.

Speed Plot

Tools

The Speed plot includes a number of tools, available in the report's **Properties** menu.



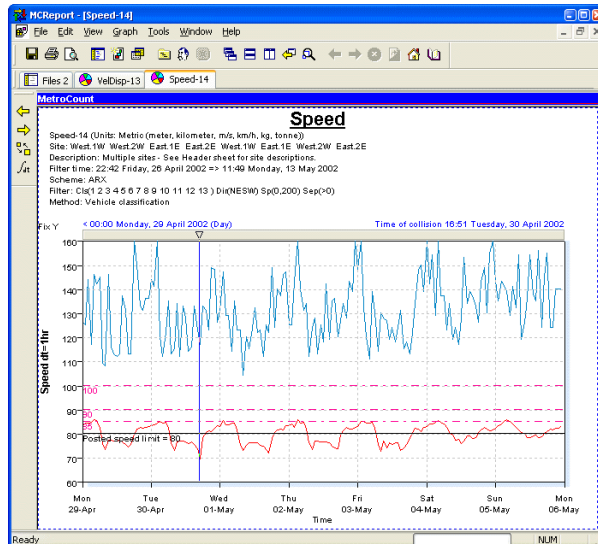
Speed time-based plot options

Show Min / Max trace optionally displays a trace for the minimum and maximum vehicle speed for each integration period. The minimum trace is now off by default.

Show posted speed limit draws a horizontal line at the speed limit set in the report's Profile. This can be set automatically by using the Automatic Speed Limit feature.

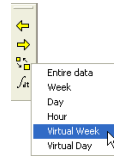
Show Extra Speed Limits draws horizontal lines for each of the user-defined speed thresholds.

Annotation at marker is a string that is displayed next to the time marker date. This is used to highlight a significant event on the report. Holding the **Ctrl** key while moving the marker will give one minute resolution.



Virtual Day / Week Display Span

The Speed plot has additional options in the Display Span menu. **Virtual Day** and **Virtual Week** displays a day or week, averaged over the available data.



Virtual day / week options in the Display Span setting

Speed Bin Multipliers

The weighting value assigned to each speed bin, called the speed bin Factor in MCRreport version 2, is now known as the speed bin Multiplier. The sum of products for all the speed bins in a report is known as the Speed Rating.

MCRreport version 3 also introduces the concept of energy, using the standard formula: $e = \frac{1}{2}mv^2$ where m is the estimated vehicle gross mass from the Advanced Profile mass table. The value is always reported in MegaJoules.

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