

Energy – Crush (Motorcycle)

Overview: Computes Speed from Motorcycle Crush Analysis.

Entry into Module:

This module of the program is normally entered by clicking on the **REC-TEC** block in the upper left of the **REC-TEC Window** causing the drop-down menu to appear. Place the cursor on the **Energy** block and click on **Crush (Motorcycle)** on the sub-menu to initiate this module.

Under certain circumstances, the user may choose to use the **Files** block instead of the drop-down menu approach. Selecting any file with a **.MCC** extension in the **Dialog box** accessed from either the **Open Single File** or **Open Multiple Files** block opens this module.

Selecting **AutoLoad [ON]** from either the **Setup Menu** or the **AutoLoad Icon** on the upper right side (third line) of the **REC-TEC Window** automatically loads the scenario that was on the screen when the module was closed, either individually, or when the program was closed. With **AutoLoad [OFF]** on the main **REC-TEC Window**, modules will start without loading a file.

Data Entry:

This module contains the following data entry blocks within the leftmost frame:

- **WB Len Change (L) – required** (Wheelbase Length Change of Motorcycle)
- **Car Crush Distance (C) – required** (Crush Distance of Car)
- **M/C Weight (W) – required** (Weight of Motorcycle)

Entry of required information in the data boxes is sufficient to generate a solution and causes output information to appear in the **Output** frame. As the input data is changed, the output data is automatically updated without the need to tell the program to update the output.

Output:

The output from this module consists of the repeated input variables plus the speeds for all of the included formulae expressed in the primary and secondary configurations.

- **Speed:** Motorcycle Speed from Crush Analysis (Primary)
- **Speed:** Motorcycle Speed from Crush Analysis (Secondary)

Options:

Several **Command Buttons** appear in a frame located at the lower right corner of the module Window. The **Command Buttons** allow the user to engage options including the option to **Open** and **Save** the data required to generate the scenario shown on the screen at the time the file was saved.

- **Open .MCC File** – Calls up a **Dialog box**, which **Opens** any pre-existing **.MCC** file and displays the output results.
- **Save .MCC File** – Calls up a **Dialog box**, which **Saves** data on the screen to files with any user-selectable filenames. This is independent of the automatic saving as “**LastFile.MCC**” of the data at the close of this module or the program.
- **Help** – Opens an Adobe document which is a reprint of an article titled “**Motorcycle Crush Analysis**” by **Wade Bartlett, PE** published in Volume 19, No. 2 of **Accident Reconstruction Journal** dated March/April 2009.
- **Formulae Comparison*** - Toggles a frame displaying the formulae for computing the unknowns in this module. In addition to the basic formulae, the frame shows intermediate steps with the actual input data shown in the computation.
- **Graphics** –The display shows the comparison speeds for the formulae included in the module.
- **N** – This button toggles a graphical number pad on the screen that can be used to enter data into the input boxes without using your keyboard number pad. This may be useful for presentations as data entry can be accomplished using a wired/wireless mouse.
- **Iteration / FD Analysis** – Calls up a frame that permits the user to input the minimum and maximum values for selected input variables along with the interval for **Iteration**. If **Finite Difference Analysis (FDA)** is selected, the resulting analysis computes the uncertainty level for the specified range of the input variables.
- **Range – Monte Carlo Analysis** – Transfers all of the computed speeds (Primary) to the **Statistical Range – Monte Carlo** module.

For a more in-depth description of **Finite Difference Analysis**, see the Finite Difference Analysis Section of this Manual – Press **[F2]** from any Active module of the program.