WINROC: 32-bit Rocketry Software for Windows

Winroc is a suite of rocketry programs for use with Microsoft Windows 95, 98, or NT4. Available for over 5 years now, the package has grown from a single floppy disk to a CDROM with over 50 megabytes of rocketry articles, photos, and in-flight videos. Hundreds of rocketeers on 5 continents use Winroc for everything from 1/4A flights to huge Level 3 projects.

The programs included are:
Alticalc, a rocket altitude and performance simulator.
Winroc Graph, which works closely with Alticalc for displaying graphs.
Thrust Curve Manager, which manages and allows you to add or alter motor data.
Motor Wizard, which walks you through creating a motor record.
CPCalc, a virtual blueprint for calculating center of pressure.

Unlike rocketry CAD programs, which are intended for "design-time" use, Winroc is a field or "run-time" package, to be used to figure the performance of rockets that are already built. If you quickly need to know the consequences of changing a motor or adding weight, Winroc will do the job for you.
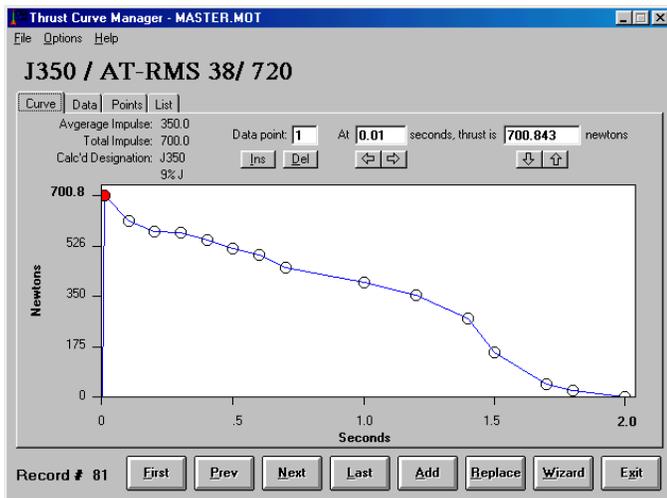
ALTICALC:
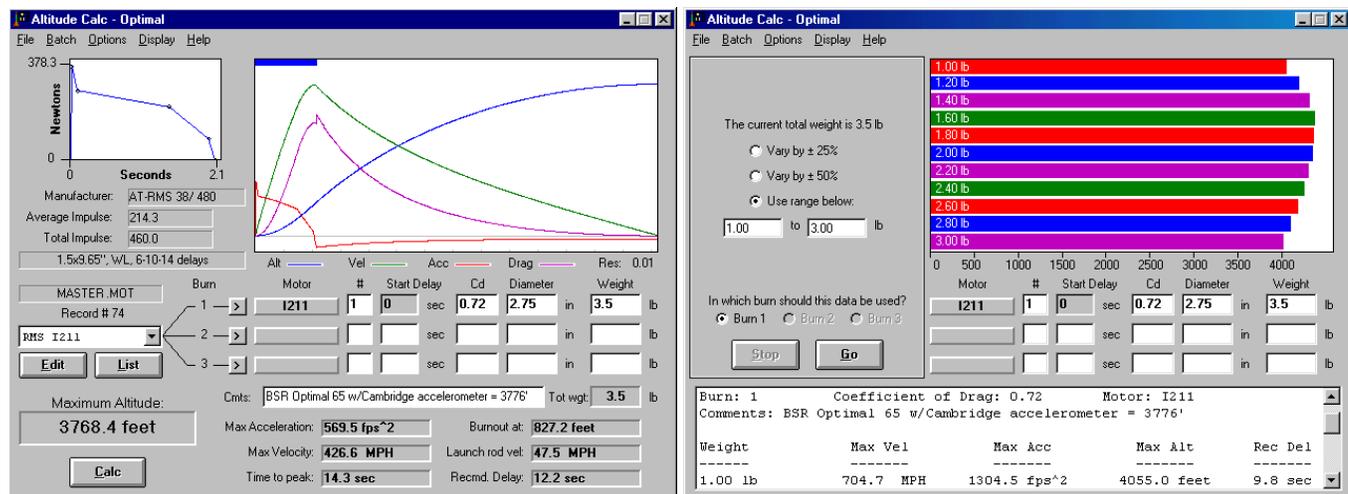
The flagship program of Winroc, Alticalc allows you to simulate the flight of a rocket and model it's performance. Features are almost too numerous to mention; you can use up to 3 different motor types in any combination of staged, clustered, clustered-staged, drop-staged and drag separated vehicles. Mach transition and air pressure changes are simulated for altering drag. Launch site altitude and base drag values can be entered. Metric-English conversions are just one click away. The batch mode lets you run multiple simulations while varying the motor, weight, or Cd. Results of any sim can be printed as text, graphics, or sent to Winroc Graph for a bigger display.
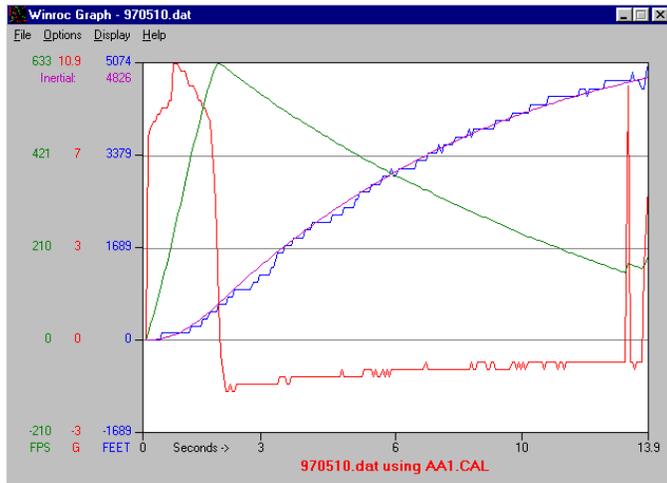
Winroc Graph:
Used for displaying the output of Alticalc in a larger, more flexible format. You can choose the colors of the lines and background. Multiple graphs can be overlayed. Also is capable of downloading and displaying the data from the BSR AltAcc recording accelerometer. Cambridge and Adept data can be displayed but not downloaded. You can easily overlay a simulation with actual data to see how closely they match.

Thrust Curve Manager:
A database manager for motor data, which includes nearly 400 thrust curves for use with Alticalc. New records can be added or automatically imported from other popular rocketry programs. Actual test data from the Tripoli test stand can be converted to thrust curves for use in Alticalc sims. Individual data points can be altered by typing, clicking a button, or by dragging with a mouse. A grid-type list of motors can be sorted by any column.
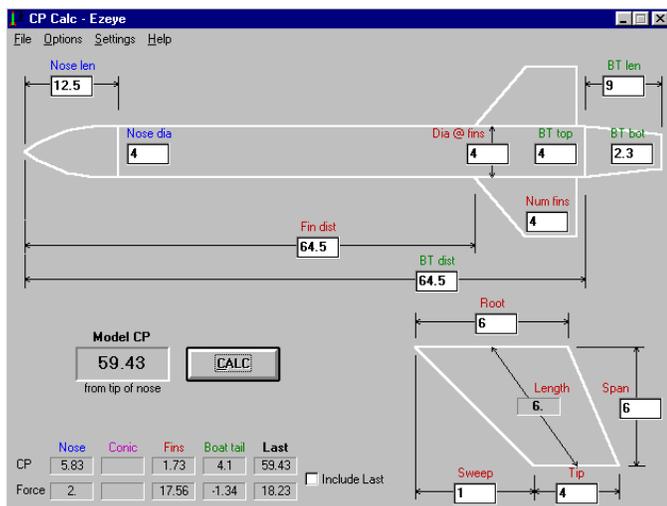
CPCalc:
A deceptively simple blueprint allows you to enter the dimensions of your rocket and figure out the center of pressure using the famed Barrowman equations. You can change the shape of the nose cone, add a boat tail or conic reducer, or figure out vehicles with multiple sets of fins. The results can be saved to disk or printed.

Winroc 4.5 is still available at the original price of $20 a copy. A review in the Jan/Feb 2000 issue of Sport Rocketry called it "useful software" and a "real bargain". The author, Steve Roberson, is a life-long rocketeer who has written many magazine and web articles. You can contact him at P. O. Box 8128, Phoenix, AZ 85066, via email at steve.roberson@winroc.org or check the Winroc web site at www.winroc.org