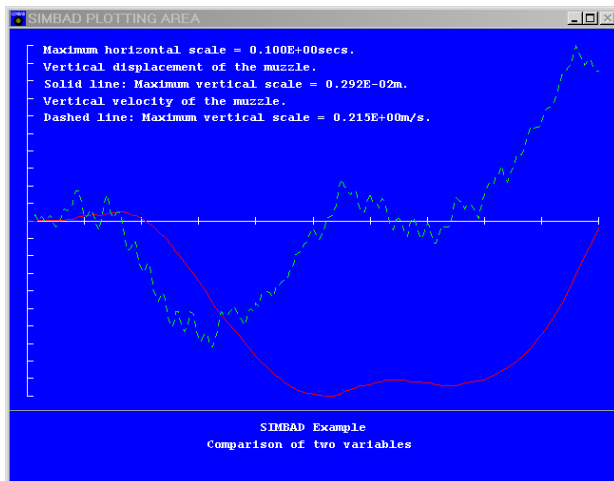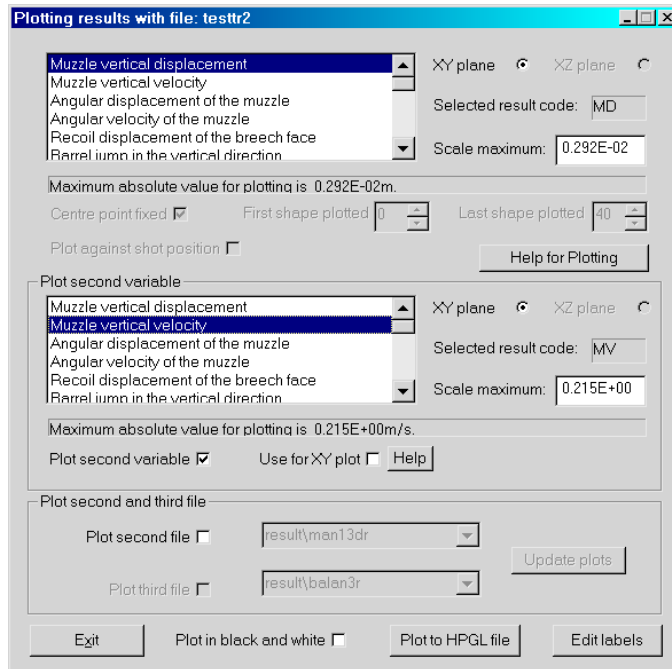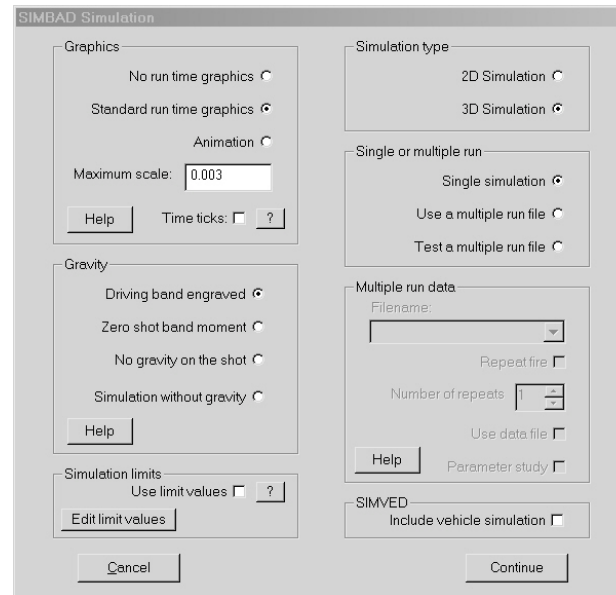# SIMBAD + SIMBIB + SIMVED

All three programs have an extensive results plotting facility which enables comparison of different variables and simulations.
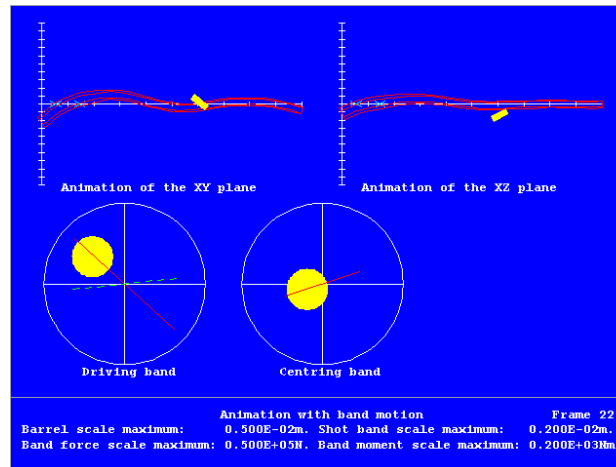

SIMBAD Example
Comparison of two variables

EASY TO USE INTERFACE

Simulations are controlled from clearly labelled menus in all three programs.

The results from **SIMBAD** or **SIMVED** simulations can be animated and frames saved to produce an AVI file.

SIMULATION
THE COST EFFECTIVE SOLUTION

Analyse weapon and vehicle performance before manufacture, purchase or future development, and determine those parameters which enable performance to be improved and optimised.


SIMBAD
SIMulation of BArrel Dynamics
SIMBIB
SIMulation of Barrel Internal Ballistics
SIMVED
SIMulation of VEhicle Dynamics

Already used in 14 countries around the world, and under constant development since 1984. The programs provide a cost effective method to assist in design, development and assessment. They can be licensed for individual or combined use, and for an additional consideration, source code may also be licensed. The programs are designed to run under Windows 95/98/ME/NT4/2000/XP.

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SIMBAD is designed to simulate the motion of the barrel, its support, and the shot, and predict shot launch conditions. The program has been extensively developed since 1984, and is now used in 14 countries around the world by government research establishments and private companies. It is normally used on conventional guns from small to large calibres, with smooth and rifled bores, together with projectiles ranging from simple rigid lumped masses to flexible long rod penetrators and sabots. It can also be used with rocket-assisted projectiles, and has the ability to be tailored to specialised systems such as electromagnetic launchers and multiple launch rocket systems.

Non-linearities can be simulated with ease, and a special facility enables parameter studies to be automated. The basic model is shown below.
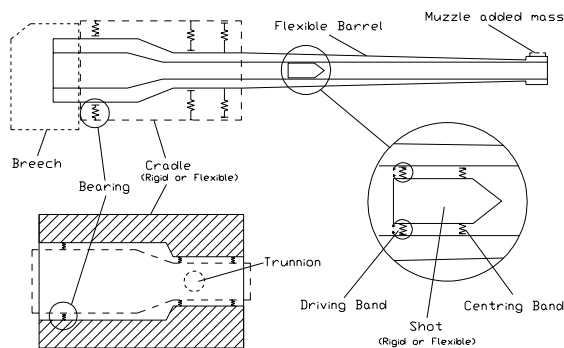
SIMBIB is an internal ballistics program designed to calculate the pressure, shot velocity, shot travel, and propellant burnt when a gun is fired. The simulation is based on well established laws that form the basis of most internal ballistic codes which use 'lumped parameter' or 'zero dimensional' models.

The program can be used as an independent aid to propellant design, or combined with a SIMBAD simulation.

SIMBAD + SIMBIB + SIMVED

Individual files are used to describe the separate components such as the cradle, the barrel, the shot, the primer, the charge, the vehicle body, the turret, etc. Full editing facilities are provided, and data entry is simplified with clearly defined labels. Where possible data can also be checked with the built in plotting routines.

SIMBAD and **SIMVED** each have a user defined area which includes integration routines, user defined results, access to look up tables, and the ability to monitor and change variables during the solution. External routines may also be linked to the simulation.

The three programs can be licensed individually, or as a combined and comprehensive simulation tool.

SIMVED is designed to predict the pitch, roll and bounce motion of a multiple wheeled vehicle when subject to ground inputs. If a gun is mounted on the vehicle, it can also be used with **SIMBAD** to predict the vehicle, barrel and shot motion when the gun is fired. The turret is included and enables different azimuth and elevation angles to be set.

User defined areas of the program enable non-standard suspension systems to be simulated, additional body forces to be included, and, as with SIMBAD, the users own routines can be called.