been avoided is performed manually by examining each data run file and 'observing' when this event occurs. Automating it would quicken data analysis and virtually eliminate any possible inaccuracies manual observations could cause.

The following general recommendations can be made upon the outcome of this work. The model is only as good as the system it defines; basically certain parameters must be validated using real subjects. Second, analysts must be discerning with the model and not read more from the databases than what the model was designed to deliver. Finally, increasing the model's ease of use will be essential if industry finds value in the simulation approach presented in this paper as a research tool.
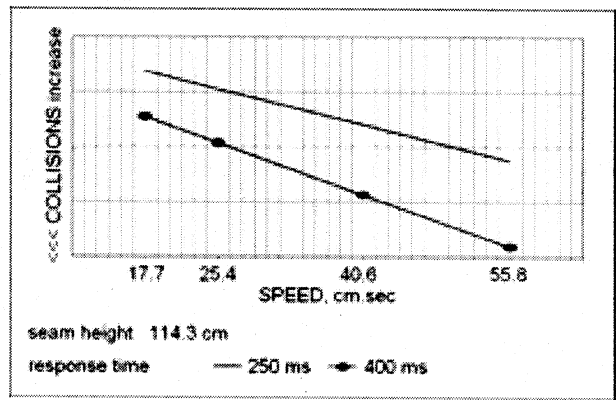

Figure 4a. Collisions vs. machine boom arm speed and operator response time in a 114.3 cm seam.
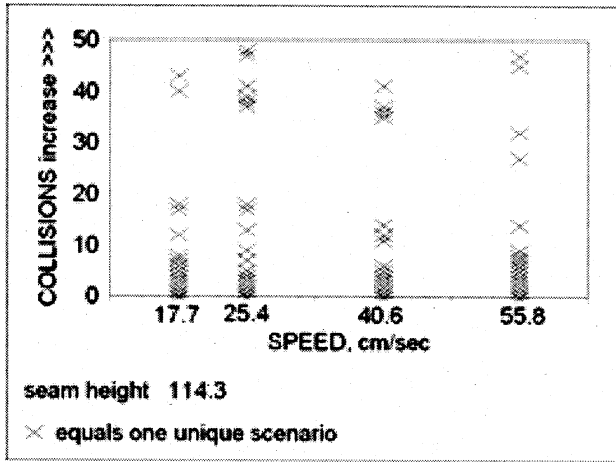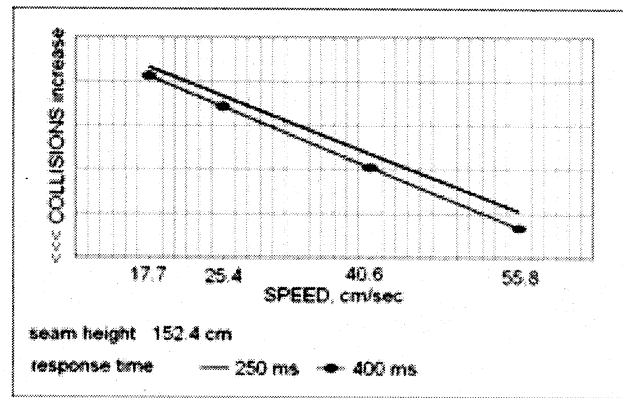

Figure 4b. Collisions vs. machine boom arm speed and operator response time in a 152.4 cm deam.

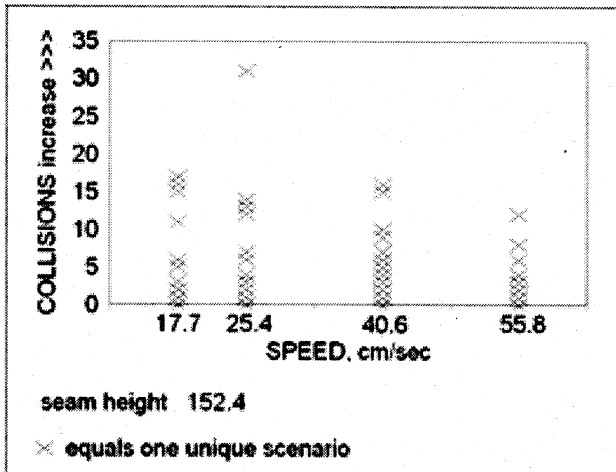Figure 3a. Collision totals of scenarios vs. machine boom arm speed in a 114.3 cm seam.

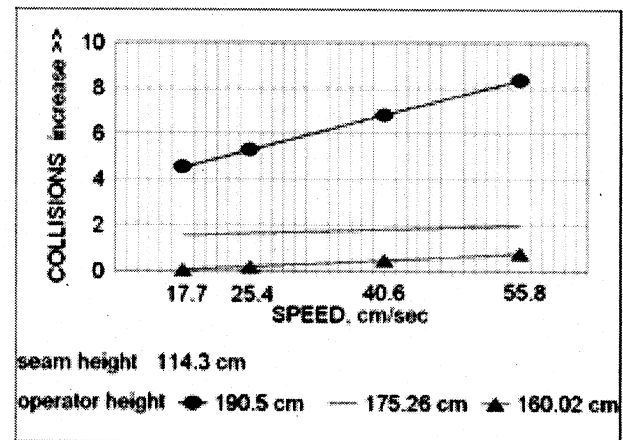Figure 3b. Collision totals of scenarios vs. machine boom arm speed in a 152.4 cm seam.

Figure 5a. Collisions vs. machine boom arm speed and operator at risk behavior {0,0} in a 114.3 cm seam.