Reducing Traffic Safety Deaths: A System Dynamics Perspective

Roderick H. MacDonald
Rockefeller College of Public Affairs and Policy
University at Albany, 100 Milne Hall, Albany New York
E-Mail 73243.432@Compuserve.com

Kenneth Carpenter
Executive Director
Governor's Traffic Safety Committee
Empire State Plaza
Swan Street Building
Albany, New York 12228

Abstract

Traffic safety deaths on American highways have been decreasing since the early 1970's. The decreases in highway fatalities have been attributed to safety improvements in vehicles and advances in highway engineering. With the introduction of dual airbags as standard features on all vehicles in the mid 1990s traffic safety experts believe that future vehicle safety improvements will have a negligible impact on reducing traffic deaths. Furthermore, improvements in highway design will continue, but those areas with higher than normal accidents levels were identified early, funds were allocated, and engineering improvements were made. Thus, the marginal impact of additional spending on highway improvements will not have the same influence on reducing traffic vehicle deaths as dollars spent in earlier years.

While it is believed that the factors that have historically had the largest impact on reducing traffic safety deaths have reached a plateau, it is feared that increases in the number of vehicles on the road, the number of miles driven, and an increase in older drivers are creating pressures that will increase traffic safety deaths. Therefore, in order to reduce traffic safety deaths further, programs and policies aimed at changing driver behavior must be emphasized.

Working with a multi-disciplined group made up of individuals in administrative and policy positions from New York State, the Institute for Traffic Safety Management and Research is developing a system dynamic model to examine the tradeoffs between programs that emphasis education and enforcement. There are two goals for this project. The first goal is to get key traffic safety decision makers in New York State involved in developing and using a system dynamics model to examine new ways of reducing traffic safety deaths in New York State. Second, the model will be used to examine the effect of different resource allocation measures between education and enforcement measures.

The presentation will focus on the findings of the model as well as how the model is being used to influence policy, resource allocation, and thinking about traffic safety in New York State.