

## **Tractor Risk Abatement and Control**

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### **Introduction**

Tractors remain the leading agent of death on farms. Despite decades of knowing about this problem and effective solutions to it, the death continues. As of 1998, a report found that 32% of agricultural deaths are tractor-related, averaging 270 fatalities per year. This figure excludes non-occupational deaths. In addition, 264,651 tractor-related restricted workday and 10,939 tractor-related lost-time injuries occur each year. (Donham, et al, 1998)

This paper reviews the progress made in tractor risk abatement and control since the report, *Agriculture at Risk* was published. (Merchant, et al, 1989) It also evaluates the recommendations from the Tractor Risk Abatement and Control (TRAC) policy conference, which met in 1997.

### **1. Agriculture at Risk.**

Based upon 1986 data, the *Agriculture at Risk* report identified the tractor as the principal agent of fatal or disabling injury, accounting for more than three-fourths of the machine-related deaths. The report recommended a Federal mandate for the installation of roll-over protective structures (ROPS) on all tractors sold in the U.S., provide economic incentives to persons to retrofit ROPS on their tractors within five years, and require them on all tractors within 10 years. This did not occur, and assuming that half of all overturn fatalities for that period (1990-2000) would have been prevented, this inaction cost about 1,095 farmer and farmworker lives. (Myers and Panacryan, 2000)

The report observed that even with this epidemic of death and a public duty "to assure as far as possible every working man and woman in the Nation safe and healthful working conditions," action is lacking. The law requires each employer to provide a workplace "free from recognized hazards that are causing or likely to cause physical harm." (U.S. Congress, 1970) Nevertheless, a false perception exists that the farm employer is exempt from this law, and as a result, exempt from the duty to keep their farms free of recognized hazards. The origin of this misperception is that the agricultural community believes that riders to the annual appropriations for OSHA have rendered them exempt. These riders restrict OSHA from "expending" funds to enforce OSHA standards on most farms, but they do not negate the law. (Kelsey, 1994)

The report identified the general public as unaware and therefore unconcerned about farm safety and health. This remains a problem. Tipper Gore's pictures at the 2000 Democratic Convention showed then Vice-president Gore riding an old tractor, one with a child on his knee, which lacked a ROPS. Kenny Chesney's video of his song, "She Thinks My Tractor's Sexy," shows him bouncing to the music on a tractor that lacks a ROPS. Rural road signs across the country warn of tractors on the road with an icon of a tractor and driver, but the tractor has no ROPS. Many advertisements on television use rural settings in which tractors lack a ROPS. As recently as February 13, 2001, *Sesame Street* aired a segment about farm life in which a child stood next to

the adult tractor driver. The young child waved from within the cab at the camera as the tractor rolled by. Society has not recognized the danger to a child as an extra rider on a tractor. This when any responsible program would not air the scene of a child being placed in an automobile without a restraint. The romance of farm life clouds recognized hazards such as these.

## **2. The TRAC Policy Conference**

In 1997, the University of Iowa recognized that little had been accomplished in abating and controlling the major source of agricultural fatalities, the tractor. It convened a policy conference from which 25 recommendations were published in a report. If implemented, 2,000 lives will be saved the year 2015. (Donham, et al, 1998)

The recommendations were responses to four questions:

1. How do we assure that every tractor that needs a ROPS has one?
2. What combination of public and private policies are needed to prevent tractor-related collisions on roads?
3. What combination of public and private policies are needed to prevent injuries from tractor runovers?
4. What combination of public and private policies are needed to eliminate tractor-related injuries among youth?

## **Evaluation Framework**

A theory-oriented approach for evaluating the TRAC recommendations as a coherent strategy will help to assure that better approaches are used than "trial-and-error." (Lipsey, 1993) For this paper, a theoretical model serves as a framework to evaluate the coherence of the strategy. The model-the Theory of Planned Behavior (ToPB) as modified by an A ‡ B ‡ C behavioral model-aims to predict and understand "individual" behavior. (Cole, 2000; Petrea, 1996) The ToPB model contains a complex of antecedent conditions to behavior, which for our purpose is to act on the four questions posed above. In the model, the immediate antecedent condition is "intention," which is preceded by four more conditions as shown in Figure 1:

1. Attitudes are positive or negative evaluations of the behavior.
2. Social pressures are an individual's perceptions of social pressures put on them to perform the behavior.
3. Perceived control is the degree of control the person perceives as having over the behavior.
4. Culture (one of many external variables) is portrayed as the ultimate antecedent and

affects each of the three other conditions as well as intention. (Cole, 2000) It has been defined as traditions, ethics, and other standards that influence the way things are accomplished with others. For this paper, it represents the need for concerted action.