

Tractor Safety Demonstration Activity
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TITLE OF ACTIVITY: INVEST SECONDS, SAVE \$

PURPOSE: To demonstrate that the time 'saved' by using a short-cut method vs. a safer practice of doing a task is quite insignificant when compared to the risks of injury/death.

AGE OF AUDIENCE: This activity can be used with youth through adults.

BACKGROUND INFORMATION: People behave according to their perceptions. These perceptions may or may not be based on reality.

When performing a task there is a 'recommended safe way'. Frequently there may also be a way to perform the task that appears to be 'quicker' but is also more hazardous. Frequently people may use the perceived 'short-cut' method since they feel they are saving large amounts of time.

Examples of activities that people may routinely do were 'timed' in order to be able to see that the amount of time saved was relatively insignificant. (NO MACHINES WERE RUNNING FOR THESE MEASUREMENTS).

- stepping over a PTO vs walking around the tractor/PTO = 3 seconds
- jumping down from the combine vs walking down the steps = 7 seconds
- leaning over (on a riding mower) to pick up stuff as you drive by vs getting off the mower to pick it up = 20 seconds
- stepping over an auger vs walking around = 2 seconds

In order to put these times in perspective, the total time saved for 100 repetitions of an activity was determined. In some instances it may take a year or longer for the person to do 100 repetitions. When it was pointed out that they may save 3 minutes over the course of a year, while at the same time exposing them 100 times to possible injury or death, the time saved seemed ludicrous!

DESCRIPTION OF ACTIVITY: This activity was developed by Carol Lehtola, Mark Hanna, and Charles Schwab for use as a demonstration activity at fairs and machinery expos. The concepts of the activity can be adapted for use with other tasks appropriate to available materials, relevant tasks, etc.

Demonstration of Stepping Over a PTO vs Walking Around

Equipment needs: Tractor with a power take-off stub and master shield

Light-beam alarm system (available at electronic stores for approx. \$60)

Stop-watch

In order to demonstrate the time it takes to step over a PTO vs. the time it takes to walk around it, it was necessary to devise a method where people could simulate stepping over a PTO shaft. It was determined that the use of an actual shaft or similar barrier (e.g., rope or tape) could pose a potential tripping hazard. It was also recognized that the intent was not to promote or encourage the 'incorrect' behavior.

It was desired that if the person touched the 'imaginary PTO' there would be some indication that they actually had touched it and thus it could be emphasized that that could have resulted in injury or death.

In order to achieve these criteria, the device selected was a light-beam alarm system. When the beam of light is broken, an audible alarm sounds. These are often used in stores or homes for security purposes. The reflector was mounted on a stake (and anchored in a bucket of sand) and set at the height of the PTO shaft. The transmitting device was set on a stand adjacent to the PTO stub of the tractor.

As people participated in the activity, the concept of short-cut vs safer practice was explained. A stop-watch was used to time them walking over the PTO shaft and also for the time it took them to walk around the tractor. The difference was then shown to them – typically it took them 3-5 seconds longer to walk around the tractor. This was further explained by showing them a poster of time saved for 100 repetitions of this activity. For ex., if they had saved 3 seconds, then over 100 repetitions (and 100 exposures to the risks) they would have saved a total of 5 minutes. This was explained to people in terms of examples relative to their age and experience (e.g., putting this in perspective to a 16 yr. old male that he no doubt spends more time than that each day styling his hair!!!!).

When the alarm was sounded if someone broke the beam (hit the PTO), it tended to attract the attention of passers-by, who then became interested in participating in the activity.

Cards can be made up to be used as a hand-out.

Charts of time savings can be found in the publication "Short-Cuts are Short-Sighted"
<http://edis.ifas.ufl.edu/AE179>.