

Tommy's Troubles

Answer Key

Instructions

Compare your answers to the answers and ideas listed in this key.

Discuss the answers and any differences in ideas with your friends and the instructor.

Your ideas are important and can help improve this exercise for other people. Your answers will be studied along with many other people's answers to improve the exercise.

Question A

- A 1. Because of the weeds, Tommy can't see the ground.
- D 2. Unlikely. Modern tractors are designed to prevent setting fires. Older utility tractors with belly exhausts pose a greater danger.
- A 3. Wasps and bees nest in weeds. Stings can cause injury or death.
- A 4. Striking such objects can flip the tractor or throw the driver.
- A 5. Dead branches can fall and injure or kill the driver if the tractor or mower bumps into a tree.

Question B

- v 6. Tommy probably wouldn't wear the belt. Studies in Kentucky suggest that only 20% of persons who have ROPS and seat belts on their tractors actually wear the seat belts.
- ? 7. Tommy would be more likely to wear the belt if (a) his dad wore the belt and (b) if the belt were clean. Studies suggest equipment operators don't like to wear dirty seat belts.

Question C

- D** 8. He can't react this fast. His reflexes will cause him to hang on.
- D** 9. This won't help. The log has transferred the forward motion of the tractor to a rolling-over motion.
- D** 10. Tommy's mass is so small that shifting his weight won't help.
- D** 11. The tractor is flipping. Too little time to react and too late to be effective.
- A** 12. Things to prevent the rollover and injury had to be done before this instant. These include (a) Tommy wearing the seat belt, (b) Tommy's father setting a good example by always wearing his seat belt, (c) Tommy's parents supervising his work, especially for a new and difficult task, and (d) removing or marking hazardous objects in pastures and fields.

Question D

- D** 13. With the seat belt properly fastened he won't be thrown.
- D** 14. The seat belt will hold him in the frame of safety provided by the ROPS, and the tractor won't crush him.
- D** 15. Studies show that wearing a seat belt during a crash keeps people from being injured. If there is a fire, they have a better chance to escape than does an unbelted person, who is more likely to be injured, disabled, or unconscious.
- A** 16. Bruising is likely, serious injury much less likely. The fastened seat belt and ROPS keep the driver in a frame of safety.
- D** 17. The seat belt will hold him in the frame of safety provided by the ROPS, and he won't be cut or crushed by the bushhog.
- A** 18. Overturning a tractor is a serious situation. Even if Tommy isn't hurt, he will probably miss the ball game.

Question E

- A** 19. Without the seat belt fastened, he is likely to be thrown from

the tractor.

- A** 20. Without the seat belt to hold him in the frame of safety provided by the ROPS, he could be thrown and crushed by the tractor.
- A** 21. During an overturn without a seat belt, he may bump his head, be pinned, or be disabled and unable to escape if there were a fire.
- A** 22. Because of the heavy equipment and large forces, Tommy could be seriously injured. Without a fastened seat belt, he may not stay in the frame of safety provided by the ROPS.
- A** 23. Without the belt, he could be thrown off when the tractor wheel hits the log. Being thrown off a tractor and being run over by the trailing bushhog is a type of fatality that occurs regularly in Kentucky. (See the official fatality report summary in the box below.)

KY Fatality Assessment and Control Evaluation (FACE)

Report #95KY01701

Date: May 2, 1995

Subject: Farmer Killed when Run Over by Bushhog

Summary

A 64-year-old male part-time farmer was killed when he fell from his tractor and was run over by the edge of the bushhog attachment. The victim had been repairing a tractor tire earlier in the day. He was apparently trying to drive the tractor into a garage when he lost control and fell or was knocked from the tractor seat to the ground, falling between the tractor and the bushhog.

- A** 24. Overturning a tractor is a serious problem, especially if the operator is not wearing a seat belt. Tommy would probably miss this game and perhaps many other games; he might never get to another game.

Question F

- v 27. Correct! This 33% statistic reported by Murphy (1992, p. 65) is based on a study of farm fatalities in 31 states. This study

based on a study of farm fatalities in 31 states. This study included all ages of persons killed in farm accidents. Males age 14 to 19 and over 65 are at higher risk of fatal injuries from tractors. (See Figure 1 on page 5.)

The proportion of tractor-related fatalities in Kentucky is nearly two times higher than the national average. Kentucky FACE investigations of farming deaths found that 94 (61%) of the 153 total farm fatalities from 1994-97 were tractor-related. (See Figure 2 on page 5.)

Question G

- v 33. Correct! This 48% statistic is based on a national study done by McKnight & Hetzel in 1985 and reported in Murphy (1992, p. 61).

Farm Bureau news clippings from the state of Kentucky from 1983 to 1992 suggest that 71.8% of all farm-tractor fatalities were from overturns.

Kentucky FACE investigations found that tractor overturns accounted for 59% of all farm-tractor fatalities during the 1994-97 four-year period

Question H

- v 35. Correct! This statistic is based on a study by Bechanan in 1993. Only 30% of the farm tractors in two central Kentucky counties were equipped with ROPS. Only 20% of drivers of ROPS-equipped tractors used the seat belts ($0.20 \times 0.30 = 0.06$ or 6%). In 1997 University of Kentucky researchers again found these same percentages when a random sample of 1,648 farmers from four additional Kentucky counties were interviewed. (See Figure 3 on page 6 for a graph of these data.)

Farm Deaths in 31 US States

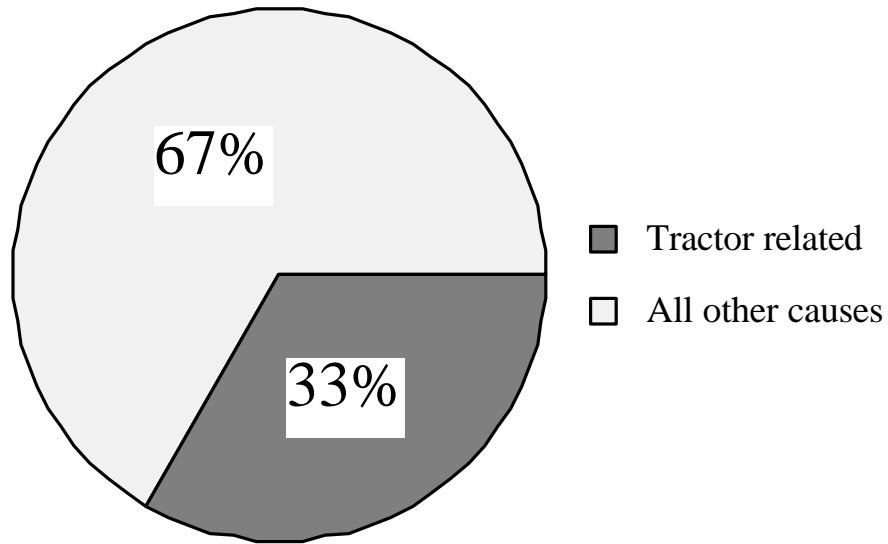


Figure 1: Percent of farm fatalities related to tractors and all other causes in 31 US states (Murphy, 1992, p. 65)

Kentucky Farm Deaths 1994-97

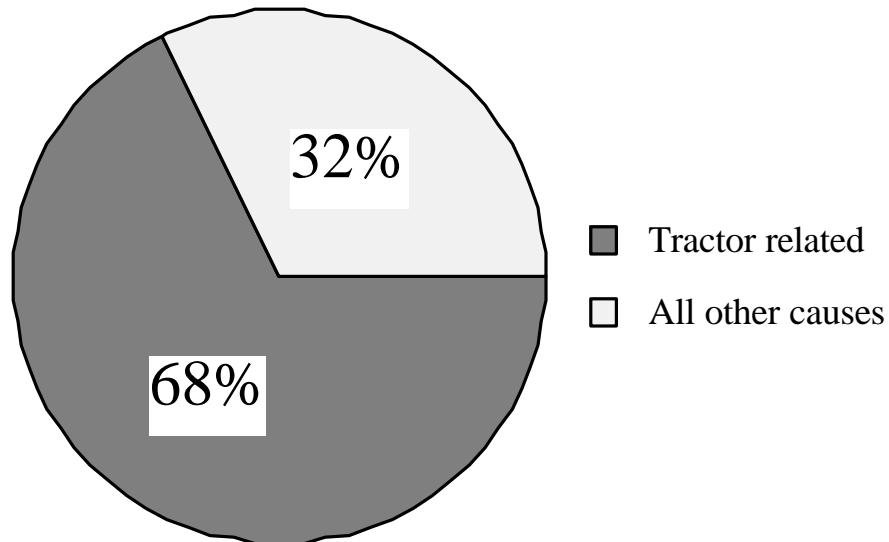


Figure 2: Percent of farm fatalities related to tractors and all other causes in Kentucky, 1994-97 (Unpublished KY FACE data, 1998)

Kentucky Tractor Operators Unprotected and Protected by ROPS and Seat Belts

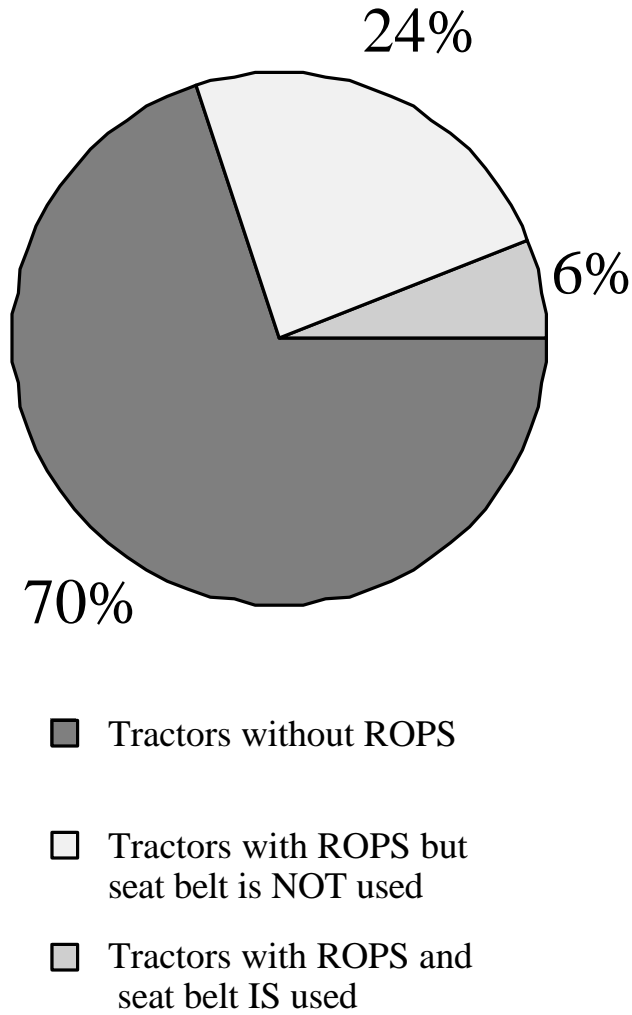


Figure 3: Percent of Kentucky farm tractor operators unprotected and protected by ROPS and seat belts

References

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- Kentucky Fatality Assessment and Control Evaluation (FACE) Project (1994-1998).
University of Kentucky, Kentucky Injury Prevention and Research Center, 333 Waller Avenue, Suite 200, Lexington, KY 40504-2915. Telephone (859) 257-4955. See the Center web page for Kentucky farm fatality investigation reports.
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