

# **The Mr. Good Egg Farmer Model Tractor Overturn Activity Instructor's Guide and Materials<sup>1</sup>**

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## Overview

During a tractor overturn, a rollover protective structure (ROPS) and seat belt are 98% effective in preventing injury to the operator. A recent study found that one in every nine Kentucky farmers ages 55 years or older overturns a tractor during his or her lifetime. Some farmers survive these overturns. Most are injured, some severely, and sometimes these injuries result in permanent disabilities. During 1994-99, 76 Kentucky farmers died in tractor overturns. An additional 32 farmers died when they fell off moving tractors. All 108 farmers could have survived these events if their tractors had been equipped with ROPS and if the farmers had been wearing seat belts.

This activity demonstrates the effectiveness of ROPS and seat belts. It uses a 1/16-scale model tractor without a ROPS and seat belt, and another identical or similar model tractor fitted with a ROPS and seat belt.<sup>2</sup> The tractor operators are simulated with raw hens' eggs with faces drawn on them. The eggs are called "Mr. Good Egg Farmers."

The demonstration involves three steps.

1. A "Mr. Good Egg Farmer" is placed on the seat of the model tractor without a ROPS and seat belt. The tractor is then run across a raised wood or cardboard platform set on top of a large table. A sideways overturn is created by either dropping the front and rear wheels on one side of the tractor over the edge of the platform as the tractor rolls ahead, or by having part of the platform give way under the tractor. The overturn almost always results in the Mr. Good Egg Farmer being crushed by the tractor.
2. The procedure is repeated with an identical or similar model tractor equipped with a ROPS but no seat belt. A second Mr. Good Egg Farmer is placed on the ROPS-equipped tractor, but without a seat belt. The second model tractor is run across the platform and overturned. The ROPS keeps the tractor from rolling on top of and crushing the second Mr. Good Egg Farmer, but the egg is usually thrown from the tractor and cracks or breaks when it strikes the surface of the table.
3. A third Mr. Good Egg Farmer is then attached to the seat of the ROPS-equipped tractor. Two pieces of Velcro® "Sticky Back Squares" "hook" fasteners are attached to the back and bottom of the tractor seat.<sup>3</sup> Two pieces of the matching Velcro "loop" fasteners are stuck to the back and bottom of the egg. When the egg is pressed into place on the tractor seat, the Velcro hook and loops act like a seat belt. They hold the egg firmly in place on the seat even when the tractor is upside down and shaken. The model tractor with the ROPS is then run across the platform and overturned. During the overturn, the Velcro fasteners (simulating a fastened seat belt) hold the third Mr. Good Egg Farmer snugly on the seat within the frame of safety provided by the ROPS. Even when the tractor rolls completely over, the third Mr. Good Egg Farmer is not injured.

This activity requires a minimum of equipment. The materials are easily available and, once gathered, can be reused many times with a minimum of preparation. The only consumables are the raw eggs. Gathering the materials, constructing the apparatus needed, and carrying out the demonstration is a good project for vocational agriculture students, FFA members, or 4H youth.

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<sup>2</sup> One model tractor can be used first without a ROPS in place, and then with a ROPS installed. However, it is easier and quicker to have two tractors, one with and the other without a ROPS.

<sup>3</sup> Other brands of hook and loop fasteners also work well. Double-sided tape works, but it is difficult to remove the tape and broken eggshell from the tractor seat in order to repeat the overturn with another egg.

## Purpose and Objectives

This activity illustrates that tractor rollover protective structures (ROPS) and seat belts, while not preventing overturns, are extremely effective in minimizing the terrible injury, cost, and social consequences of tractor overturn events. Those who participate in the activity should achieve the following learning outcomes.

1. Observe and describe the damage to the Mr. Good Egg Farmer operator that results when a model tractor overturns
  - without a ROPS
  - with a ROPS but when the operator is unbelted
  - with a ROPS and where the operator is belted in place within “the frame of safety”
2. Describe how the model tractor and Mr. Good Egg Farmer activity illustrate the protective value of ROPS to operators of real tractors.
3. Discuss and develop favorable attitudes toward ROPS and appreciate their value in preventing injuries during tractor overturns.
4. Evaluate and discuss the cost effectiveness of ROPS and seat belts in terms of their potential for
  - saving money by preventing injury and death
  - providing peace of mind to tractor operators and their family members
  - ensuring the continued operation of family farms and a way of life
5. Promote farm family members' increased efforts to acquire ROPS for their tractors.
6. Promote farmers' increased frequency of wearing seat belts when operating ROPS-equipped tractors.
7. Involve farm youth, vocational agriculture students, and 4-H youth in constructing the Mr. Good Egg Farmer apparatus and presenting the activity to farm community groups.

## Intended Audiences

This activity is appropriate for groups ranging in age from upper elementary school children to adults. Because the activity is a simple and concrete demonstration, principles of how and why a ROPS and seat belt protect the tractor operator during an overturn are apparent to both children and adults.

The follow-up questions, discussion, and activities that are provided later in this document can help tailor the activity to the needs and interests of the group. For example, adult farmers who participate in the activity may be stimulated to learn more about how to obtain a ROPS and the costs involved. Children are not usually involved in such decisions, but they may be stimulated to think about and ask their parents to get ROPS on tractors and to wear their seat belts on these tractors. Children may also be more inclined to wear the seat belt when they begin to drive ROPS-equipped tractors

## Instructions for Gathering and Preparing the Materials

All the materials needed for this activity are readily available. Once assembled, they can be used repeatedly with little effort. Allow three or four hours the first time you gather and assemble the materials.

The apparatus and materials needed for the demonstration may be available from your local vocational agriculture program, extension office, and Farm Bureau office. Check with these groups to see if they can assist you.

The instructions that follow are broken into four parts. These include (a) a list of the materials needed, (b) obtaining and preparing the model tractor(s), (c) constructing the platform, and (d) gathering other materials needed for the demonstration.

## List of Materials

This list assumes you can (a) obtain two model tractors (one without a ROPS and one with a ROPS) and (b) obtain or construct an appropriate platform on which to operate the model tractors. Detailed instructions for constructing and installing a ROPS on a model tractor are provided in Appendix A. Instructions for constructing a simple and sturdy plywood ramp and platform with a “breakaway” section, are described in Appendix B. However, you can conduct the activity with only the materials listed in this section.

1. *Two 1/16 scale model tractors, one with and one without a ROPS.* These models are available from farm supply stores and equipment dealers. Models of older tractors don't have ROPS but the models of newer tractors do. Select tractors of the same approximate size and weight. Avoid models with cabs. It is usually impossible to get the egg inside the cab. Select model tractors with enough room between the seat and the steering wheel so that a hen's egg can be seated on the tractor. See Figure 1 below.

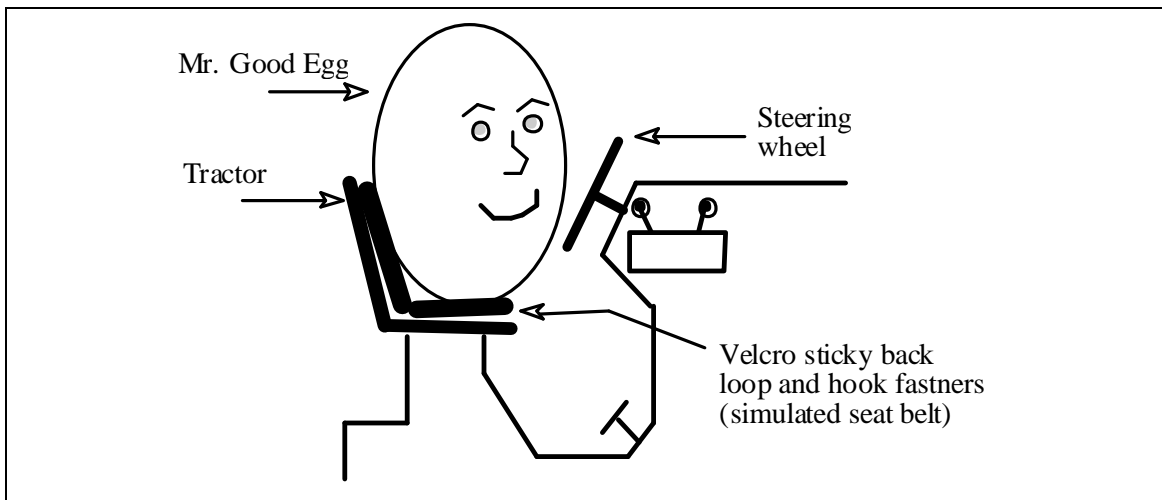


Figure 1: Details of model tractor seat, Velcro fasteners and hen's egg

2. *A wooden or cardboard platform at least 17.5 inches long, 11.5 inches wide, and 3.5 inches high.* The top cover from a box of copy paper works well as a platform (see Figure 2). An alternative is to use a piece of plywood supported by two short pieces of 2 x 4s or 2 x 6s placed at each end of the platform (see Figure 3 on next page). To construct a ramp and platform with a breakaway section, see Appendix C. Extra platform height obtained by using 2 x 6s for supports may be needed for lighter model tractors and those with a large muffler. With the lower platform height, a lightweight model tractor, or one with a large muffler, the egg may not break when the tractor flips. Using 2 x 6s as supports raises the platform height and overcomes these problems.

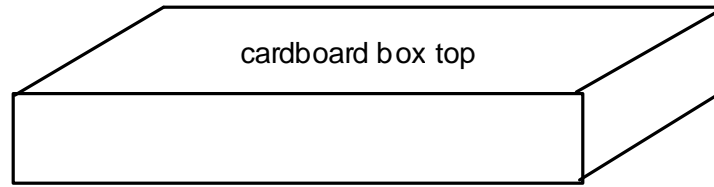


Figure 2: Platform made from cardboard box top

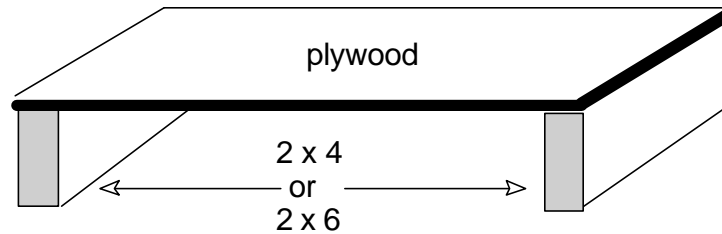


Figure 3: Plywood platform supported on 2 x 4s or 2 x 6s

3. *A package or two of Velcro® (or other brand) “Sticky Back” squares hook and loop fasteners.* These are two-part (hook and loop) 7/8 inch adhesive-backed squares used to hold picture frames or other objects against a wall or other surface. These fasteners can be purchased at a hardware store or general merchandise store. The fasteners simulate the seat belt and are used to hold the “belted” Mr. Good Egg Farmer to the ROPS-equipped model tractor seat as shown in Figure 1. The hook part of the fastener is stuck to the tractor seat. The loop side of the fastener is stuck to the egg.
4. *Five or six different colored fine-tipped felt pens.* The pens are used to draw faces on the Mr. Good Egg Farmers.
5. *A half dozen to a dozen raw, medium-sized hens’ eggs.* The number of eggs needed depends upon how many times the demonstration will be repeated.
6. *Large plastic garbage bag, masking tape, roll of paper towels, and counter-top cleaner.* Use the masking tape to attach the unopened garbage bag to the tabletop to protect it from egg white and yolk. Use the paper towels and cleaner to wipe up the broken eggs when the demonstration is completed.
7. *“Mr. Good Egg Farmer Exercise Evaluation Questionnaire.”* Duplicate a copy of this one-page form for each person who will observe or participate in the demonstration. The evaluation form is found on the next page.

**Mr. Good Egg Farmer Exercise Evaluation Questionnaire**

(Participants should complete this questionnaire after the demonstration and discussion.)

- 1. Name of exercise: Mr. Good Egg Farmer
- 2. What year were you born? 19 \_\_\_\_\_
- 3. Your sex? (check one)  M  F
- 4. Do you work on a farm?  Yes  No
- 5. Years experience in farming? \_\_\_\_\_
- 6. Acres you farm at present? \_\_\_\_\_
- 7. Do you drive a tractor?  Yes  No
- 8. If "Yes," how many days a month? \_\_\_\_\_
- 9. How many tractors are used on the farm where you live or work? \_\_\_\_\_
- 10. How many of these tractors have ROPS? \_\_\_\_\_

Think about the Mr. Good Egg activity you just finished. Circle the number that tells how much you agree or disagree with the following statements.

| Statements  | Strongly disagree |   | Strongly Agree |   |
|---|-------------------|---|----------------|---|
| 11. This activity shows what happens during real-life tractor overturns.                                | 1                 | 2 | 3              | 4 |
| 12. This activity has convinced me that ROPS save lives.  | 1                 | 2 | 3              | 4 |
| 13. During an overturn, a seat belt holds the operator on the seat and within the ROPS frame of safety. | 1                 | 2 | 3              | 4 |
| 14. This activity convinced me to wear the seat belt when driving a ROPS equipped tractor.              | 1                 | 2 | 3              | 4 |
| 15. This activity convinced me ROPS and seat belts prevent injuries.                                    | 1                 | 2 | 3              | 4 |
| 16. ROPS and seat belts on tractors can save farmers lots of money.                                     | 1                 | 2 | 3              | 4 |
| 17. Because of this activity I will <u>think about</u> getting ROPS on our tractors.                    | 1                 | 2 | 3              | 4 |
| 16. Because of this activity I will <u>try to get</u> ROPS on our tractors.                             | 1                 | 2 | 3              | 4 |
| 18. ROPS are not worth the time and cost it takes to get them.  | 1                 | 2 | 3              | 4 |
| 19. I had a chance to discuss and share my ideas during this activity.                                  | 1                 | 2 | 3              | 4 |
| 20. The demonstration of the tractor rollovers was interesting.   | 1                 | 2 | 3              | 4 |
| 21. I will tell others about the importance of ROPS because of this activity.                           | 1                 | 2 | 3              | 4 |
| 22. I didn't learn anything from this activity.   | 1                 | 2 | 3              | 4 |
| 23. There is plenty of time to jump clear from an overturning tractor.                                  | 1                 | 2 | 3              | 4 |

If you have other comments, please write them on the back of this page. Thanks for your help!

## Conducting the Mr. Good Egg Farmer Activity

These instructions explain what to do before, during, and after the demonstration.

### Before the Demonstration

1. Read through this instructor's copy. Decide which way you will conduct the activity (with one or two tractors, with a cardboard or wood platform, etc.).
2. Gather the materials, assemble the platform, and get your model ROPS-equipped and non ROPS-equipped tractors ready. (See Appendices A, B, and C.)
3. Make copies of the evaluation form on the previous page so that each participant can evaluate the activity.
4. Look through the follow-up notes in the next section. Note the questions, activities, and materials you may want to use during the discussion after the demonstration. Examine the charts in Appendix A. Duplicate or place on overhead transparencies the pages you wish to use. (It is a good idea to have most of these materials available. Participants' questions may arise for which various materials in the follow-up notes are effective at "teachable moments.")
5. Decide where and when you will conduct the activity. Plan to have a place large enough and open enough so that all participants can see and participate in the demonstration.
6. Practice the demonstration a few times in advance to make sure everything works properly. If necessary, make adjustments until everything works as it should.

### During the Demonstration

7. Appoint a helper or two from each group to assist you with each part of the demonstration. This includes someone to push the tractor slowly across the platform, a second person to pull out the support block, and a third to clean up the mess (after first letting everyone get a good look at it). You may also want to appoint a photographer or two to make close-up color prints of the tractors, the Mr. Good Egg Farmer eggs and their conditions after the overturns. The photos can be blown up to 8 x 10 prints and used with poster displays and demonstrations for school and community projects.
8. Involve the participants when you conduct the activity. Begin by placing the larger group of participants into smaller groups of three or four people. Give each one of the small groups a felt tipped marker and a raw hen's egg. Ask each group to draw a face on their Mr. Good Egg Farmer, and to name their egg (Mr. Good Egg Farmer Sam, or Joe, or Burt, Jane, Brenda, etc.). If they wish, they can also add small paper hats to the eggs by using bits of colored paper and tape.
9. After the participants have finished drawing faces on their Mr. Good Egg Farmers, have one person from each small group draw straws. One straw should be short, one long, and one in-between. When a short straw is drawn, that group's Mr. Good Egg Farmer has to ride a tractor without a ROPS. A middle-length straw gets the Mr. Good Egg Farmer a ROPS-equipped tractor, but with no seat belt. The long straw gets the Mr. Good Egg Farmer a ROPS-equipped tractor and a seat belt. If you have more than three groups, use the same three straws to redraw after one set of three groups completes drawing their straws.
10. Conduct the steps of the activity in the following order.



- First, place a Mr. Good Egg Farmer who drew a short straw on the seat of a model tractor without a ROPS and seat belt. (Make a small loop of masking tape or duct tape and stick it on the bottom of the tractor seat. Then set the egg on top of the tape. The tape keeps the egg on the seat when the tractor overturns, just as a person would reflexively hang on. But the tape does not restrain the egg as securely as the simulated Velcro seat belt.) Then have one of the participants run the tractor lengthwise across the box top or plywood bridge placed on the top of a large table. Push the tractor slowly ahead and close to one side of the platform so that both the front and rear wheels on one side of the tractor drop over the edge of the platform. The overturn almost always results in the Mr. Good Egg Farmer being crushed. Repeat the procedure for any other groups who drew a short straw. (If you decide to use the platform with the breakaway section shown in Appendix C, have a second participant pull the supporting block out from under the breakaway section. The block should be pulled out just as the front and rear wheels on one side of the tractor run onto the breakaway section.)
- Then, use a second similar model tractor equipped with a ROPS (or retrofit the first tractor with a ROPS). The Mr. Good Egg Farmers who drew a medium-length straw are placed on this tractor, but are not belted in place on the seat. Run the tractor across the platform, repeating the procedure exactly as outlined in the previous item. When the tractor overturns, the ROPS keeps it from rolling on top of and crushing the Mr. Good Egg Farmer. However, during the overturn, the egg usually falls from the tractor seat and cracks or breaks during its impact with the surface of the table. (Sometimes the egg rolls off the table top, so be prepared.)
- The Mr. Good Egg Farmers who drew the long straw get to ride the ROPS-equipped tractor and wear a simulated seat belt. Two squares of sticky-backed hook fasteners are first attached to the tractor seat bottom and back (see Figure 1). Two matching squares of sticky-backed loop fasteners are then stuck to the Mr. Good Egg Farmer's bottom and back. When the egg is pressed into place on the tractor seat, the fasteners act like a seat belt. They hold the egg firmly in place on the tractor seat. Turn the tractor upside down and shake it. If the egg is properly secured, it won't fall out. Next, run the tractor over and off the side of the platform just as was done in the previous demonstrations. This time when the tractor overturns, the Mr. Good Egg Farmer is undamaged because it stays in the tractor seat and within the frame of safety provided by the ROPS. Be sure to ask the participants to examine closely the ROPS and egg. Make sure they see that the egg is not in contact with the tabletop when the tractor is overturned. Allow the participants to roll the tractor over and upside down on the tabletop a number of times so they can see how the ROPS and seat belt hold the egg in the frame of safety provided by the ROPS.

### After the Demonstration

11. It is important to allow the participants to discuss the activity. The questions and activities that are included in the follow-up notes can assist this process. There is more information in the notes than can be used in one session. Select and use those portions of the notes that you feel are most appropriate to the group with whom you are working. Consider using some of the other activities and materials in the notes at other sessions. Don't read the notes to the participants. Rather, use the materials in the notes for group activities and discussion. You can involve the participants by having them read or explain short sections of the notes that you select beforehand.
12. When you have completed the entire activity, give each participant a copy of the one-page evaluation form. Ask each participant to complete all the items on the form and return the completed form to you. Inspect the forms to assess the participants' evaluation of the activity.

It is also interesting to summarize and discuss with the group the information they provided on the evaluation questionnaire.

## Follow-up Notes, Questions, and Activities

When the participants have completed the Mr. Good Egg activity, use these questions and notes to provide additional information about ROPS and seat belts. Also examine and consider using some of the other materials found in the notebook (see the notebook table of contents). Having these additional resources available is an effective way to provide information to participants at “teachable” moments when they raise questions and want information. It is important to allow time for the participants to talk to one another and collaborate as they discuss these topics and activities.

More follow-up activities than can be used in one session are included here. There are enough materials and activities to conduct a series of programs with a group of participants over a period of several weeks. It is more effective to conduct a series of related shorter activities and presentations over several meetings than it is to cram too much into one long session.

Each of these 12 questions and discussion points has two parts. The first part is the question. The second part is a brief answer, printed in italic. Farmers and farm family members often raise these questions during the Mr. Good Egg Farmer activity.

1. Are real farmers hurt and killed in tractor overturns?

*Each year nearly 400 farmers die in tractor overturns in the United States. Every year about 14 or 15 Kentucky farmers die in tractor overturns. For example, in the five-year period from 1994-98, 71 Kentucky farmers died in tractor overturns. Another 30 died when the fell off moving tractors. Investigations suggest that all 101 would have survived if they had been on ROPS-equipped tractors and had been wearing a seat belt. (See Charts 6 - 12 in Appendix A.)*

2. Are ROPS and seat belts on real tractors really that helpful?

*A ROPS and seat belt can't keep a tractor from overturning, but they do protect a person from being hurt or killed. Used together, ROPS and seat belts are 98% effective in preventing injuries and fatalities during tractor overturns. Why do you think this is? What does it mean to say that a ROPS and a fastened seat belt are 98% effective? (It means that out of every 100 people who overturn a ROPS-equipped tractor, and who are wearing the seat belt, that only two of these persons are seriously injured.)*

3. What is the moral of the Mr. Good Egg Farmer activity?

*Ask five participants to volunteer to read the following short passages to the whole group or to each other in their small groups. Assign one person to each of the four roles. Then ask the participants to discuss and evaluate the moral of the Mr. Good Egg Farmer activity. The scripted story starts on the next page. Be sure to have one copy for each narrator and each reader.*

### A Different Version of the Three Little Piggies Story

Narrator: You may have noticed that the Mr. Good Egg Farmer activity has a lot in common with the story of the three little piggies and the wolf. You know the story? Remember?

First Reader: The first little piggy was a good guy. He worked hard, was always in a hurry, and didn't want to spend money if he didn't need to. He saved money and time by building his house out of straw. You know what happened to him when the wolf came calling!

Second Reader: The second little piggy was a good guy too who worked hard and tried to save his money. He also was in a hurry and saved time and money by building his house out of sticks. He thought he would be safe when the wolf came calling, but you know what happened to him, too.

Third Reader: The third little piggy also worked hard and also had much to do and was careful with his money. But the experiences of the other two little piggies made him think about his situation, his family, and his future. So he spent the extra time and money to build his house out of bricks. When the wolf came calling, he was ready. He lived a long and happy life.

Narrator: A farmer can be careful, but he can't keep the "wolf" of a tractor overturn away from his farm, especially in Kentucky with all its overturn hazards. But a farmer can spend a little of his precious time and money to get a ROPS and seat belt on his tractor. And then he can see to it that he and anyone else who drives the tractor wears the seat belt! While a ROPS and seat belt can't keep the wolf of an overturn away from the farm, it can prevent the wolf from biting and hurting the farmer and his loved ones. Be like the smart little piggy who learned from others and who thought about the future. Play it safe! Get a ROPS on your tractor and buckle up!

4. Doesn't it cost too much to get a ROPS on a tractor? "Most farmers don't have enough money to buy a ROPS!"

*Most tractors manufactured after 1970 can be fitted with a ROPS for about \$800 to \$1,000. This sounds like a lot of money, but just think of the economic and health risks a farmer takes by not having a ROPS on a tractor. A recent study at the University of Kentucky estimated that a serious injury from a tractor overturn could cost \$140,000 in medical bills alone, plus lost production and other non-medical costs. In one-third of the cases when a farm has this type of expensive injury (or a fatality) from a tractor overturn, the family farm is lost. (Show the graph on the next page.) The graph shows the cost of a ROPS compared to the medical costs that can result from a serious overturn injury. Doesn't it make sense to view a ROPS and seat belt as a good investment for saving lives, money, and a way of life for the farmer?*

## Dollar Cost of a ROPS Compared to the Medical Costs of an Overturn

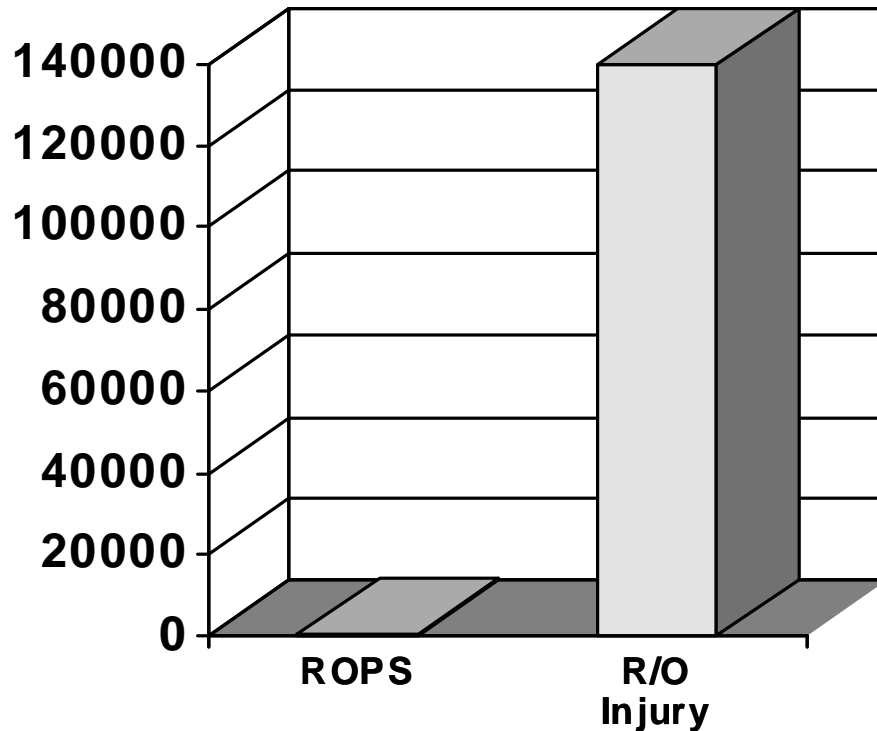


Figure 4

5. How many Kentucky farmers are protected by ROPS and seat belts?

*This is a good time to show overhead transparencies of three charts titled, “100 Kentucky farmers who drive tractors” (charts 17, 18, and 19 in Appendix A). These drawings show that for every 100 farmers, only six are fully protected by a ROPS and seat belts. Another 24 farmers are partially protected by a ROPS, but don’t wear the seat belt. The bad news is that 70 other farmers are completely unprotected by either a ROPS or a seat belt. This information came from a study of Kentucky farmers and farms in two Central Kentucky counties and a more recent study of a random sample of 1,648 Kentucky farmers in four other Central Kentucky counties.*

*The more recent four-county study found that 721 farmers had tractors with ROPS, but about 75% of these farmers said they never wore the seat belt. (See the figure on the next page.)*

### Kentucky Farmers' Seat Belt Wearing Behavior on ROPS Tractors (n = 721)

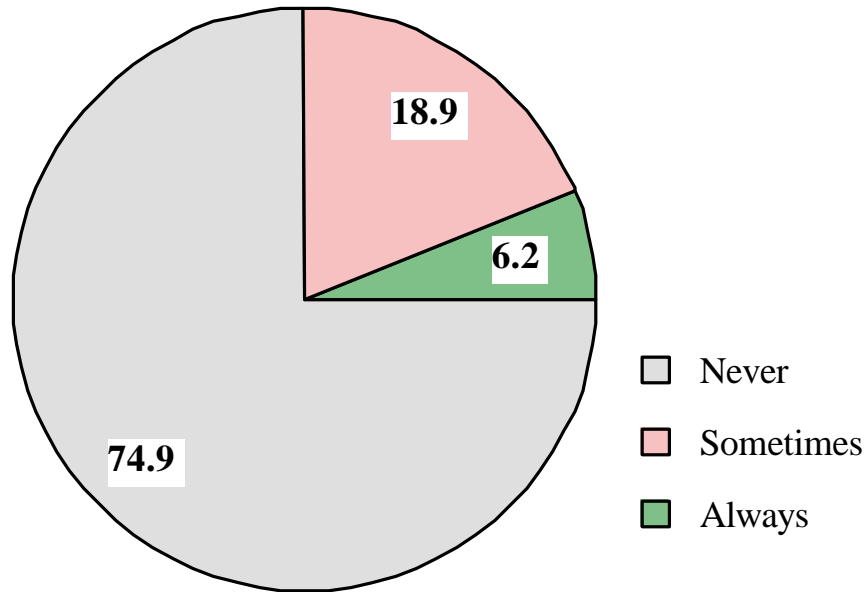


Figure 5

*The same four-county study also asked 1,448 farmers how much protection they thought a ROPS and fastened seat belt provided during a tractor overturn. Nearly 54% said that a ROPS and seat belt provide great protection and keep the operator from being hurt. But about 10% said that the ROPS and seat belt provided no protection. (See the graph on the next page.) Now that you have seen the Mr. Good Egg Farmer demonstration, how would you answer this question? Why?*

## Kentucky Farmers' Judgment of the Protective Value of a ROPS and Seat Belt (n = 1,515)

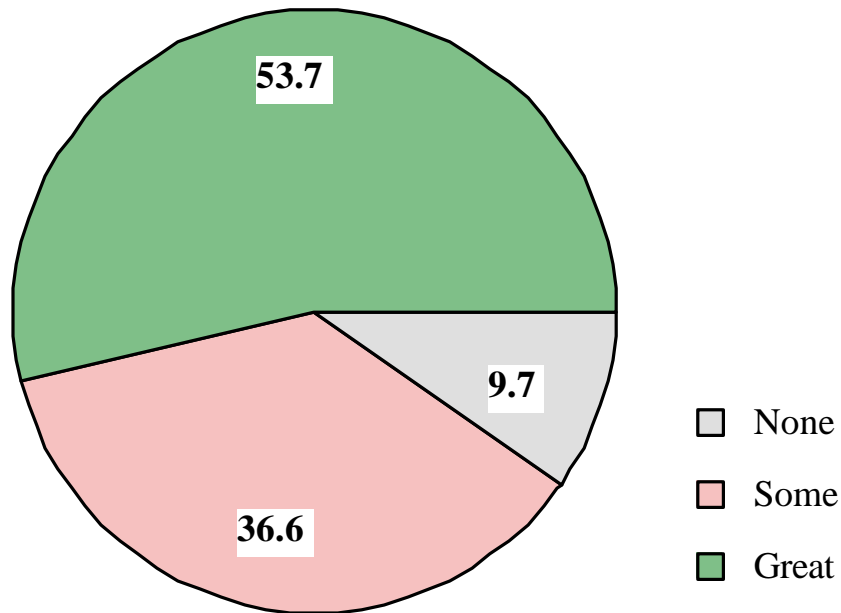


Figure 6

6. How can you tell which tractors and tasks are the most likely to result in a tractor overturn, and which tractors are most in need of ROPS protection?

*You can use the TRAC-SAFE “Tractor Risk Identification Factors” (TRIF) survey form. One form can be completed for each tractor on your farm. That way you can decide which tractors you want to retrofit with a ROPS first, although it is always a good idea to have ROPS and seat belts on all tractors. (Then the instructor can demonstrate how to use the TRIF sheet.)*

7. Won't a ROPS be a problem because it won't allow the tractor to fit into barns and sheds?

*This can sometimes be a problem but usually is not. Fold-down ROPS are available for many tractors. These allow the ROPS to be folded down below the height of the tractor muffler and exhaust pipe so that the machine can be placed in a building with low clearance.*

*Many farmers also have the misconception that a ROPS is larger than its actual size and that a tractor with a ROPS won't fit into their barn. This is usually not the case and can be shown by measuring the height of the barn doors and the height of the ROPS on the tractor. (This is a good place to demonstrate and distribute the TRAC-SAFE “Will ROPS interfere with tractor usage?” an activity concerned with measuring and comparing the actual dimensions of barn doorways and tractors*

*with and without ROPS. In most cases, adding a ROPS does not prevent the tractor from fitting in a barn or shed.)*

8. How can I go about getting a ROPS?

*This is a good time to handout and discuss the "How to Get a ROPS and Seat Belt" brochure developed by the KY CPHF ROPS project. The brochure outlines six things to know and do to get a ROPS on a tractor. It also lists the names and phone numbers of local equipment dealers who sell ROPS for various makes of tractors. It explains why ROPS and seat belts are a good investment and provides information about low interest loans for the purchase of ROPS. (Note: The names, addresses and telephone numbers of equipment dealers in your region must replace the dealer names listed in the sample: How to Get a ROPS and Seat Belt" found in this notebook.)*

9. What are some other reasons for getting ROPS and seat belts?

*This is a good time to use some of the Public Service Announcements (PSAs) and Skits. (See the notebook table of contents.) The stories in the PSAs and skits are interesting, touching, and memorable because they are about real events and real people. Select PSA messages and skits that are relevant to the group and the questions that have been raised during the discussion. Ask three or four people to stand and read aloud selected PSA messages. For example, six different participants can read orally the Jim and Lisa Barnes series of six PSAs in 30 seconds each for a total time of three minutes. Participants enjoy reading and discussing the PSAs. Select another four to six people to read the parts for two or three skits. The skits are always a hit with any group. Each skit presents an important message that tends to be remembered.*

10. Can a farmer make a ROPS for his or her tractor and save time and money?

*A single bolt from a set of 12 used to install a ROPS can cost \$26! The steel in the ROPS structure and in its bolts is made especially for this purpose. The steel is extra strong and without flaws, and not too brittle so that it is somewhat flexible. Commercially manufactured ROPS are constructed to strict specifications and tested for strength and durability. It would cost the farmer far more to construct a homemade ROPS from the proper materials than it would to purchase a ready-made ROPS from the dealer. A farmer cannot easily obtain the expensive materials needed to construct a sound homemade ROPS. It would also take many hours for the farmer to construct the ROPS, require good precision metal cutting, drilling, and welding equipment, as well as considerable skill in using this equipment. In addition, homemade ROPS can fail, leaving someone hurt or dead. The only way to make sure a ROPS is strong and safe is to test it with the large impact forces that take place during an overturn. All ROPS available from manufacturers are tested and certified safe. They won't fail during an overturn. (This is a good place to use the "Should Farmers Use Homemade ROPS?" materials found in the notebook (see table of contents).)*

11. How many Kentucky farmers overturn a tractor in their lifetime?

*A University of Kentucky study of approximately 1,000 farmers from 60 Central Kentucky counties found that one out of every nine farmers age 55 or older had overturned a tractor once in his or her lifetime and survived. Some of these farmers were not injured, some received minor injuries, others received severe injuries, and some suffered permanent disabilities. During this same period of 50 years or so, it is estimated that approximately 800 to 1,000 farmers died in tractor overturns. If ROPS and seat belts had been available and used, nearly all of these farmers would not have been injured or killed. (ROPS and seat belts on tractors did not become standard equipment until 1986.)*

12. Do you have a story you would like to share about a tractor overturn close call or injury event?

*This would be a good time to use the “My Experiences with Tractor Overturns” and the “My Story” activities found in the notebook (see the table of contents). Note that you might use these other materials to conduct a second follow-up session.*

## **Appendix A: Charts for Teaching the Value of ROPS**

A set of 19 charts is provided in this section. The first 16 charts summarize the key messages in the Mr. Good Egg Farmer activity. These 16 charts are taken from the larger set of charts included in the “What’s the problem? Facts about Kentucky Farm Tractor Overturn Deaths and Their Prevention” found in the project notebook.

Charts 17, 18, and 19 at the end of Appendix A present in simple visual images the large number of Kentucky tractor operators who are unprotected by ROPS and at risk of injury or death during tractor overturns or collisions with other vehicles or objects. Chart 17 shows that a ROPS and a fastened seat belt protect only 6 out of every 100 Kentucky farm tractor drivers. Chart 18 shows that 24 out of every 100 Kentucky farmers are protected by a ROPS, but don’t wear the seat belt. Chart 19 shows that 70 of every 100 Kentucky farmers are unprotected from overturn injuries because their tractors do not have ROPS or seat belts.

To facilitate their use as overhead transparencies and poster displays, each chart is printed in large type in landscape format. These materials are useful for follow-up discussions for the Mr. Good Egg Farmer activity, for farm safety presentations, and for poster displays.

Farmers with whom we have interacted find the information presented in the charts to be of great interest. Select graphs and charts from Appendix A that are useful for the group with which you are working. The charts also may be used for presentations or poster displays.