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TRANSPORTATION

Rodeos Follow-up



Roadeos Again Prove to be Ineffective and Should be Discontinued

MoDOT's Winter Skills Roadeo (roadeo) is a series of events in which participants engage in various activities, including competitive events involving the driving or handling of state road equipment. MoDOT held roadeos until 2001 when the department discontinued them to evaluate their effectiveness. However, MoDOT re-instituted the roadeo in 2007 without formally evaluating the effectiveness of the training program. In addition, according to MoDOT officials, the roadeo will continue in future years even though MoDOT did not solicit feedback from participants about the effectiveness of the training program.

Each participant spent about six hours traveling to and one hour participating in district-wide roadeo events, including about 10 minutes actually operating equipment. Our analysis of the 2007 roadeos indicates although improvements were made, MoDOT should again discontinue the roadeos.

Most respondents say roadeos were not effective training and do not boost morale

Most participants responding to our survey considered the roadeos to be ineffective training for maintenance workers. In addition, 190 respondents added comments saying the roadeo was a waste of time and/or money. Respondents also said the roadeos did not boost employee morale. (See page 7)

Feedback not provided to or solicited from participants

Participants have not received performance feedback to determine areas where improvements are needed nor has management determined how these individuals will be provided additional training. One respondent said "Instead of taking the people who finished the poorest and showing those people some attention to make them better operators, we take the best ones, give them another "day off"....Meanwhile, those with low scores who are usually the new employees, simply get to go back to work and have to learn on the go." (See page 11)

MoDOT also did not solicit formal feedback from the participants about the effectiveness of the roadeo. Best practices suggest feedback be requested at the end of a training course to evaluate whether the program (1) meets the established objectives (2) is valuable or (3) requires improvements. (See page 11)

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Abbreviations

MoDOT Missouri Department of Transportation
SAO State Auditor's Office



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Honorable Matt Blunt, Governor
and
Pete K. Rahn, Director
Department of Transportation
Jefferson City, MO

This report is a follow-up of our 2001 report titled *Rodeos* (Report No. 2001-110), and related issues. We assessed the status of our recommendation to the Missouri Department of Transportation (MoDOT) to discontinue the Rodeo program. As part of this audit, we again assessed the benefits and associated costs of the current Winter Skills Rodeo Events (rodeo) to determine whether these activities are justified.

MoDOT discontinued the rodeo in 2001 to evaluate the effectiveness of the rodeo. However, MoDOT re-instituted the rodeo in 2007 without formally evaluating the effectiveness of the training program. In addition, according to MoDOT officials, the rodeo will continue in future years even though MoDOT did not solicit feedback from most participants about the effectiveness of the rodeo.

Our analysis indicates although improvements were made to the 2007 rodeo, MoDOT should again discontinue the rodeos. Participants responding to our survey considered the rodeos to be ineffective training for maintenance workers. Respondents also said the rodeos did not boost employee morale.

We conducted our audit in accordance with applicable standards contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, and included such procedures as we considered necessary in the circumstances. This report was prepared under the direction of John Blattel. Key contributors to this report were John Luetkemeyer, Amanda Locke, Edward Morgan and Josh Bryant.

A handwritten signature in black ink that reads "Susan Montee".

Susan Montee, CPA
State Auditor

Introduction

Background

The Missouri Department of Transportation (MoDOT) is responsible for developing, building, and maintaining the existing roads and bridges of the state highway system. The department's maintenance division is the operating unit of MoDOT responsible for removing snow from these roads and bridges during the winter months. MoDOT estimates the division spends an average of about \$30 million annually to remove snow and ice from the state's roadways.

During our previous review of the roadeos,¹ we concluded the program was not necessary to accomplish training for staff and recommended MoDOT discontinue the program. However, in 2007, MoDOT re-instituted the Winter Skills Rodeo to (1) increase safety of the public and MoDOT's employees, (2) refresh skills and improve the snow removal operations, and (3) increase efficiency of the workforce. Each of the ten MoDOT districts held a district rodeo between April and September 2007 with the top two district winners advancing to a state competition held in Sedalia in October 2007. Each district competition, except district two, was held in a central location within the district. Based on our inquiry with other state transportation officials or staff, we identified the number of roadeos held in each state for the last 5 years:

- Tennessee – five roadeos
- Arkansas – five roadeos
- Nebraska – five roadeos
- Kentucky – two roadeos beginning in 2006
- Oklahoma – two roadeos held in one district beginning in 2006
- Iowa – two roadeos ending in 2005
- Kansas – no roadeos
- Illinois – no roadeos

Description of Roadeos

MoDOT roadeos are a series of events in which participants engage in various activities, including competitive events involving the driving or handling of state road equipment. MoDOT required all maintenance employees in grades six through ten with the following titles (1) Maintenance Worker, (2) Intermediate Maintenance Worker, (3) Senior Maintenance Worker, and (4) Maintenance Crew Leader to participate in the district rodeo. The participation of other department personnel responsible for removing snow was left to the discretion of each district.

The district-wide rodeo participants are required to complete the following events (1) written exam, (2) pre-trip inspections, (3) snow plow truck course

¹ *Roadeos*, SAO, October 26, 2001 (Report No. 2001-110).

event, and (4) loader course event. Each event or each stage of an event is graded by the judges or supervisors from each district and an overall score is calculated. Participants at the state event are required to compete in the snow plow truck and loader competitions. The various events are further described below.

Written exam

A non-timed written exam consisting of a combination of 25 multiple choice and true/false questions was completed by the participants. To ensure the exam questions and answers were not shared, MoDOT created four separate versions of the exam. Tests were given at random, so participants could receive any of the four versions. Training material was not allowed to be used during the written exam.

Pre-trip inspections

Pre-trip inspections of both the loader and snow plow truck were each required to be completed within 10 minutes. Each participant was provided a list of 30 possible defects. Participants inspected both the loader and snow plow truck to identify five safety or mechanical defects present on each vehicle. A MoDOT official said pre-trip vehicle inspections are to be performed by vehicle operators every morning before a vehicle is used, as required by the operator's Commercial Driver's License.

Snow plow truck course event

The snow plow truck course event was required to be completed within approximately 4 minutes, depending on the district. Participants were required to complete ten simulations of a real life scenario, including (1) entering the vehicle safely using appropriate handles and fastening the seat belt, (2) driving forward and backward through a serpentine or a series of barrels representing fixed objects, (3) demonstrating straight line control by driving between 10 tennis balls on either side of the vehicle's wheel without hitting any, (4) plowing by a mailbox on the vehicle's passenger side while knocking down a telspar simulating snow, (5) backing into an alley dock to simulate loading the spreader, (6) plowing by a mailbox on the vehicle's driver side while knocking down a telspar simulating snow, (7) turning right to simulate turning in a tight radius, (8) driving around a stalled car, (9) changing the snow plow position to simulate plowing by a shoulder, and (10) plowing between objects with a diminishing clearance to simulate narrow bridge cleaning.

Loader course event

The loader course event was required to be completed within approximately 4 minutes, depending on the district. Participants were required to complete eight simulations of a real life scenario, including (1) entering the vehicle safely and fastening the seat belt, (2) driving forward and backward through a serpentine or a series of barrels representing fixed objects, (3) demonstrating straight line control by driving between 10 tennis balls on either side of the vehicle's wheel without hitting any, (4) simulating loading

salt from the salt bay by moving a piece of timber, (5) simulating unloading salt from the loader by lifting the loader shovel above a cross bar, (6) moving a pallet without touching a post, (7) turning right to simulate turning in a tight radius, and (8) driving between a series of cones staggered at different angles while turning the loader without hitting any cone.

Estimated roadeo costs

Table 1.1 shows the estimate of the costs incurred for the 2007 events as provided by MoDOT officials.

Table 1.1: Estimated Costs of the Roadeo

Type of Cost	District Competition Costs	State Competition Costs	Total Estimated Costs
Personal Service	\$ 770,414	17,725	788,139
Equipment	76,241	2,003	78,244
Hats ¹	20,552	0	20,552
Awards ²	895	159	1,054
Food	32,780	520	33,300
Expense Accounts	0	1,978	1,978
Miscellaneous	3,000	0	3,000
Total	\$ 903,882	22,385	926,267

¹ All participants were provided a high visibility hat designed specifically for the 2007 MoDOT roadeo. MoDOT officials said the hats can be used on the job.

² The top two winners of the district competitions were awarded a high visibility jacket. MoDOT officials said the jackets can be used on the job. The winner of the state competition was awarded a \$40 gift certificate and a trophy and the runner up was awarded a \$20 gift certificate and a plaque. District 4 awarded three employees an "Above and Beyond" award totaling approximately \$5 each for their hard work and dedication to the roadeo.

Source: MoDOT

The costs related to administrative time incurred to research, develop, implement and administer the program, time for participants that did not complete all events in the roadeo, personnel overtime and respective office supply expenses were not included in the estimate.

Scope and Methodology

To gain an understanding of the Winter Skills Roadeo Events (roadeos), we observed the District 5 (Sedalia) event in September 2007, interviewed maintenance division and other appropriate MoDOT staff at both the headquarters and district levels and reviewed available records related to the activities and costs of district and state roadeo events held during calendar year 2007. We requested MoDOT estimate the costs of the events because MoDOT did not accumulate complete cost information.

To determine whether the roadeos are an effective training event, we prepared a survey to send to participants. After MoDOT officials reviewed the survey, we sent surveys on October 10, 2007 to the 2,482 MoDOT

employees who participated in the rodeo. We compiled responses from 677 of the 2,482 (27 percent) participants that completed and returned surveys by November 26, 2007 (See Appendix I).

To evaluate Missouri's rodeo in comparison to other states, we contacted 8 surrounding states transportation officials and/or staff (Arkansas, Illinois, Iowa, Kansas, Kentucky, Nebraska, Oklahoma, and Tennessee) to determine their rodeo processes and procedures.

We requested comments on a draft of our report from the Director of the Department of Transportation. We conducted our work between September and November 2007.

Roaddeos Again Prove to be Ineffective and Should be Discontinued

MoDOT discontinued the rodeo in 2001 to evaluate the effectiveness of the rodeo. However, MoDOT re-instituted the Winter Skills Rodeo Events (rodeo) in 2007 without formally evaluating the effectiveness of the training program. In addition, according to MoDOT officials, the rodeo will continue in future years even though MoDOT did not solicit feedback from most participants about the effectiveness of the rodeo.

Our analysis indicates although improvements were made to the 2007 rodeo, MoDOT should again discontinue the rodeos. Participants responding to our survey considered the rodeos to be ineffective training for maintenance workers. Approximately 190 respondents added comments saying the rodeo was a waste of time and/or money. Respondents also said the rodeos did not boost employee morale.

Rodeos Re-instituted Without Formal Analysis

In response to our prior report recommendation in October 2001, MoDOT stated the rodeos were suspended as a cost savings measure, to evaluate the effectiveness of the program, and to formally set and document guidelines. However, MoDOT re-instituted the 2007 rodeos without a formal analysis of the program's effectiveness. A MoDOT official said the MoDOT Director suggested the maintenance division consider re-implementing the rodeos and the division focused efforts on improving the rodeos. MoDOT officials also stated the rodeos will be conducted annually in the future.

MoDOT made efforts to improve rodeos

After deciding to re-implement the rodeo, MoDOT officials took steps to improve aspects of the rodeo including (1) requiring most maintenance employees to participate in the training, (2) discontinuing participation in national and regional events, (3) conducting several events simultaneously to reduce employee time, (4) eliminating most awards, (5) reducing the total miscellaneous costs, (6) discontinuing the ineffective back hoe event, and (7) requiring participants to execute more detailed driving skills in the snow plow truck and loader courses.

Most Respondents Consider Rodeos to be Ineffective Training

The rodeos are not an effective use of resources. Fifty-three percent of the participants responding to our survey did not believe rodeos are an effective way to train maintenance workers for snow and ice removal, while only 31 percent thought the rodeos to be effective training. Additionally, only 29 percent of the respondents agreed the rodeo should continue in its present format. Approximately 190 (27 percent) respondents added comments saying the rodeo was a waste of time and/or taxpayers' money. Many participants indicated the rodeo costs could have been used more effectively by maintaining or improving state roads and highways.

Snow plow truck and loader competitions received lowest ratings

Survey results indicated the snow plow truck and loader course competition events were ineffective. Fifty-three percent and 52 percent of the respondents believed the snow plow truck and the loader competitions to not be effective while only 31 percent and 32 percent, respectively, believed those competitions to be effective. The following are some of the respondents' comments to explain why the snow plow truck and loader competitions were ineffective:

- Approximately 90 respondents were concerned because the course events were timed and did not consider safety. According to MoDOT training information, maintenance operators are instructed to operate equipment at a safe speed.
- Approximately 50 respondents said the roдео focused on the competition rather than ensuring employees were adequately trained.
- Some participants were allowed to practice before driving the competitive course.
- Driver's did not receive training on how to operate the equipment at the roдео. Each maintenance shed maintains different types of equipment and the drivers may not be familiar with the equipment used at the roдео.
- Employees who have been responsible for plowing snow for many years said the training was not effective. Approximately 50 respondents said the roдео should be primarily for new employees. Some respondents also said the competition was "humiliating and belittling" to certain operators, especially ones that do not operate the loader or snow plow trucks regularly.
- The courses covered a limited range of activities for a snow plow truck operator. For example, in a snow storm an operator may be required to plow highway interchanges, bridges, and railroad tracks, or install the snow plow.
- Some respondents expressed concern that additional training specific to MoDOT's GL-400 salt spreader was not provided. According to MoDOT training material, the salt spreader is one of MoDOT's newer tools to assist in spreading salt on the roads and highways. The GL-400 controller regulates the salt application rate based on the vehicle's ground speed.

Written exam also considered ineffective

Survey results indicated the written exam was ineffective. Only 33 percent of the respondents agreed, while 43 percent disagreed, the written exam is an effective training event. The following are some of the respondents' comments to explain why the written exam was ineffective:

- A written exam does not provide the same knowledge as hands on experience.
- The written exam was not administered consistently. Some participants were able to use the course handbook during the exam, others worked as a group to complete the exam, and some were able to take the exam home.

We observed some participants using the course handbook to complete the exam during the district 5 observation.

Some questions were not well developed

Some questions on the written exam were not adequately developed. Some of the questions were obvious, some were not questions relevant to an operator's duties, some had more than one correct answer, and many of the answers were bolded in the course manual. The following are examples of questions that were poorly developed:

1. While driving, looking ahead for hazards is important for safety; what are two main things to look for?
 - A. Traffic
 - B. Road conditions
 - C. Scenery
 - D. A and B
2. When performing a pre-trip inspection, why is it necessary to put the vehicle key in your pocket?
 - A. So you don't lose the key
 - B. To ensure you get to drive that truck for the day
 - C. Safety – To keep someone from moving the vehicle while inspecting it
 - D. To make sure you have the right key
3. October 15th is a good target date to do-
 - A. Plow snow
 - B. Post storm assessment
 - C. Pre-season preparations
 - D. Take a day off

-
4. When refueling, it is ok to leave the truck running during cold weather.
 - A. True
 - B. False

 5. When in a busy congested area with a loader it is best to take it slow and easy and to:
 - A. Disregard all equipment and traffic
 - B. Honk your horn a lot
 - C. Flash your work lights
 - D. Maintain a safe distance from other machines

Pre-trip inspections are effective

Survey results indicated the pre-trip inspections were effective. Only 32 percent and 34 percent of the respondents disagreed, while 52 percent and 48 percent agreed, the snow plow truck and the loader pre-inspections, respectively, were an effective training event. One of the respondents indicated "I didn't realize how easy it is to overlook defects" and another indicated it was a good reminder that pre-trip inspections are to occur.

Respondents say training at local maintenance areas would be better

The majority of respondents told us performing training exercises at local maintenance areas would be better than holding district-wide roadeos. Sixty percent of the respondents agreed (versus only 20 percent that disagreed). The following are some of the respondents comments to explain why the district-wide roadeo was ineffective:

- Training at a local maintenance shed provides more one on one time with an instructor than a district-wide event.

- Local maintenance area training would allow an operator to train using the equipment being used during the snow storm.

Based on our analysis, each participant spent approximately an hour actually participating in the five events, and only about 10 minutes actually operating equipment. The rest of the MoDOT's estimated six hours (4 hours participating in the roadeo and 2 hours for estimated travel time) per participant was spent waiting for their turn at the various events. According to MoDOT officials, participants also benefited from watching and conversations with other participants while waiting their turn. Additionally, the winners of the each district were estimated to have spent 16 hours and incurred lodging at the state-wide roadeo for participation in two events where each participant again spent about 10 minutes competing in either the snow plow truck or loader course.

More respondents say roadeos do not boost employee morale

Survey results indicate the roadeo was not effective in boosting employee morale. Only 28 percent agreed, while 49 percent disagreed, the roadeo competition helps boost employee morale. The following are some of the respondents comments to explain why the district-wide roadeo was ineffective:

Approximately 20 of the respondents said the roadeo made the participants nervous as they were required to compete against co-workers, perform in front of higher level supervisors, or because some participants do not test well. Some respondents indicated this impacted participant's performance.

- Adequate communication about the purpose of the roadeo may not have been performed. Rumors regarding employment termination and/or effects on future promotions for those who did not pass the roadeo were cited. Some also mentioned the scores being tracked in MoDOT's Accountability and Performance System that is used to plan and review an employee's expectations and performance. A MoDOT official said the system was only required to be used to indicate the employee had completed the roadeo training. This official said the objective of the roadeo was not for the participant's scores to be entered into the system nor were officials aware of any of the participant's scores being entered into the system by the districts. Another official said management is not aware of any disciplinary action being taken against any roadeo participant.
- "Who wants to hear I am better than you"

Feedback Not Provided to Participants

All participants have not received performance feedback to determine areas where improvements are needed nor has management determined how these individuals will be provided additional training. Some survey respondents were concerned because they had not been provided feedback to determine how well they performed or areas needing improvement. One respondent said "Instead of taking the people who finished the poorest and showing those people some attention to make them better operators, we take the best ones, give them another "day off"...Meanwhile, those with low scores who are usually the new employees, simply get to go back to work and have to learn on the go."

A MoDOT official has performed analysis of some of the participant's scores to determine (1) participants with scores less than 70 percent and (2) most common questions or obstacles missed by participants. However, the official said the analysis has not been completed due to timing and another official said the additional training to be provided has not been determined since the analysis is not complete.

Feedback not solicited from participants

Only District 2 solicited formal feedback from the participants about the effectiveness of the roadeo. Best practices suggest feedback be requested at the end of a training course to evaluate whether the program (1) meets the established objectives (2) is valuable or (3) requires improvements. A MoDOT official said feedback was not requested from the participants because the current training evaluation form is being revised.

Conclusions

MoDOT discontinued the roadeo in 2001 to evaluate the effectiveness of the roadeo. However, MoDOT re-instituted the roadeo in 2007 without evaluating the effectiveness of the training program. In addition, according to MoDOT officials, the roadeo will continue in future years even though MoDOT did not solicit feedback from participants about the effectiveness of the 2007 roadeo.

Our analysis indicates although improvements were made to the 2007 roadeo, MoDOT should again discontinue the roadeos. Participants responding to our survey considered the roadeos to be ineffective training for maintenance workers. Respondents also said the roadeos did not boost employee morale.

Recommendations

We recommend the Director of the Department of Transportation:

- 2.1 Discontinue the roadeos.
- 2.2 Determine whether training related to pre-trip inspections should continue at local maintenance areas.

Agency Comments

The purpose of the Winter Skills Roadeo is to ensure that MoDOT's winter operations staff possess the knowledge and skills necessary to perform snow removal tasks safely, effectively, and efficiently.

The Winter Skills Roadeo training program benefits the department and the citizens of Missouri by providing a knowledge and skills based training program for the department's winter operations staff. MoDOT invests nearly \$30 million dollars annually removing snow and ice from Missouri's roadways. For that investment MoDOT wants to ensure that its work force is properly trained and prepared to remove snow and ice each winter.

In 2004-05 the MoDOT Director conducted employee visits around the state. A reoccurring question had to do with the possibility of reinstating the Roadeos. After discussing the 2001 SAO report and MoDOT's decision to discontinue the Roadeo with executive leadership, MoDOT made the decision to reinstitute the Roadeo. A Statewide Winter Skills Roadeo Team

was convened and led by MoDOT's Maintenance and Training offices to develop guidelines and plans to improve MoDOT's Roadeos.

The Statewide Winter Skills Roadeo Team was comprised of individuals from each of MoDOT's ten (10) districts and personnel from MoDOT's central office including: Risk Management, Audits and Investigations, Human Resources, and Maintenance.

The Winter Skills Roadeo Team incorporated several key findings from the 2001 SAO Roadeo report into the implementation plan. These findings include:

- (1) Require training for the department's snow operations staff,*
- (2) Maximize training time by holding employee training activities simultaneously,*
- (3) Improve the effectiveness of training by designing events that simulate actual conditions, and*
- (4) Reduce costs by eliminating participation in national events.*

Benefits of a Winter Skills Roadeo are difficult to quantify due to many variables such as changes in weather and severity of winter seasons. However, a reduction in department costs is expected to result from a well-trained workforce. Benefits anticipated from the training include improved snow removal operations as well as a reduction in winter storm related accidents and personal injuries.

In summary, MoDOT plans to hold a Winter Skills Roadeo training annually to prepare its staff for winter operations. MoDOT will review the SAO report and incorporate appropriate findings into future Roadeo planning. Winter operations is a significant investment of Missouri taxpayer funds. MoDOT is committed to ensuring staff are highly skilled, knowledgeable, and able to operate equipment safely while providing best value for every dollar spent and ensuring a safe transportation system.

Survey Results

Table I.1 represents the responses received from 677 of the 2,482 (27 percent) participants that completed and returned the surveys.

Table I.1: Survey Results (Number of Responses)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The written test is an effective training event and will help me perform ice and snow removal in a better and safer manner.	44	178	161	169	119
The roadeo inspection of the snow plow truck is an effective training event and will help me detect equipment defects before I begin plowing snow this winter.	103	244	111	124	90
The roadeo inspection of the loader is an effective training event and will help me detect equipment defects before I begin loading trucks this winter.	91	233	122	136	89
The snow plow truck competition is an effective training event and will enable me to better operate the snow plow truck this winter.	65	141	108	192	163
The loader competition is an effective training event and will enable me to better operate the loader this winter.	65	147	107	192	156
Overall, the winter skills roadeo competitions are an effective way to train maintenance workers for snow and ice removal.	66	142	103	180	175
A district-wide roadeo event is a better way to provide training to maintenance workers than performing training exercises at local maintenance areas.	44	90	131	186	218
The winter skills roadeo competitions help boost employee morale.	68	119	151	125	205
The winter skills roadeo competitions should continue in its present format in future years.	73	119	137	107	229

Note: Certain respondents did not provide a response to one or more questions on the survey.

Source: Returned participant surveys.