

ON THE ROAD

By Norm Bowers, Local Road Engineer

GRAVEL ROAD MANAGEMENT



The KAC Annual Conference in Overland Park was a nice opportunity to talk with commissioners and other county officials. I was approached a number of times by commissioners

that weren't satisfied with how their gravel roads were being maintained. This article is a high level look at gravel road management.

First I should mention that gravel roads are trouble because the condition changes daily, and they do need regular maintenance. Many seem to think that the poor practices are the fault of the grader operator. If you are a commissioner, road supervisor, or a blade foreman, look in the mirror; the person looking back at you may be just as much a problem as the blade operator. How could that be if you don't run the grader? Well, if the county is not providing the grader operator training, direction, and the right equipment how can the grader operator do a good job?

Proper Supervision: Recently I was touring a county where one grader operator had a lot better roads than the other operators. He bladed the roads different, and had more crown. But the supervisor didn't have the time to work with the other operators to get them to change their procedures. In this case a lack of a foreman was resulting in poor roads. In most counties the Road Supervisor does not have the time to oversee the grader operators. If you have more than 600 miles of gravel road you should consider a foreman for the grader operators. This foreman can also coordinate culvert replacements and gravel surfacing priorities.

Training for Foreman and Operators: Grader operator training is available from Kansas LTAP. But don't just send your

operators--the foreman needs to go too. If you just send operators, it is likely they will come back and just keep on doing what they have been doing. The foreman needs to go and hear what the instructor is suggesting to the operators. Then on the way home after class the foreman and operators talk about what they heard. They talk about what is applicable to their county, what they are doing right and what they can improve on.

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FIGURE 1: One-way disc for recovery of gravel and to break up sod. (Pleasant Twp in Butler County)



FIGURE 2: Tractor mounted one-way disc. (Gravel Roads Construction & Maintenance Guide)

Written Instructions: All grader operators should have written instructions on standard procedures. The instructions include such things as crown, windrows, how to blade, when to blade, when not to blade, high shoulder repair, how to handle complaints, etc. Without written instructions you hear many times “nobody told me.” Sample instructions are available on the KCHA website, these instructions need to be modified for the situation in your county. The best way to handle this is for the foreman to discuss each item with the grader operators and get buy-in before finalizing the instructions.

Mowing: The shoulder of the road needs to be mowed at least once a year so the operator can cut off any developing high shoulder and perhaps recover gravel at the shoulder line. Just a 4 ft. swath is wide enough. The cost of mowing is offset by improved maintenance. Consider having your grader operator mow his zone during dry weather when blading does little good.

Aggregate: You need to know the composition of the material that is spread on the road. Whether you purchase the gravel or rock or you produce it from your own pit or quarry, it is important to know the gradation, especially the top size and the amount of fines. Bad material makes bad roads. The gradation may explain some of the problems you may be having. A few counties switched to 2” rock because the smaller rock is said to just disappear in a few months. Maybe the problem was not the top size but the amount of fines. If you don’t know the composition of your gravel and rock, you can make some poor decisions.

Equipment: It takes more than a motorgrader to take care of gravel roads. I am amazed that people will spend \$250,000 for a motorgrader, and then not provide the other equipment needed. The most important secondary piece of equipment is a mower. You don’t need a mower for each grader zone, but if you are not mowing at least one pass once or twice a year, it is hard to have a good gravel road. Another essential piece of equipment is a

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FIGURE 3: Farm disc can work for breaking up sod in windrow. (Gravel Roads Construction & Maintenance Guide)



FIGURE 4: Tiller for breaking up sod in a windrow. (Gravel Roads Construction and Maintenance Guide)



FIGURE 5: Roller mounted on grader. (Pleasant Twp. in Butler County)

shouldering disc, which is just a one-way disc to retrieve material from the shoulder and break up sod in the windrow. See Figures 1 & 2. If recovering material is not an issue, just consider a small farm disc to break up the sod on the shoulder and windrow when pulling shoulders. See Figure 3. A grader-mounted roller can help compaction when moisture is present. The rollers can be used in routine maintenance and reshaping operations, and help when placing new gravel. See examples in Figures 5 & 6. A scarifier with bullet teeth is helpful to rough up an area with washboards. A traditional scarifier will typically dig too deep and makes it difficult to compact the material when reshaping. See Figure 7. A towed blading device might be an alternative to blading in dry weather, or to fill in potholes and loose material in depressions right before an expected rain. The towed blade does not replace a motorgrader, but is a supplement when you need to cover a lot of miles in a short time. See Figure 8. ■

If you like roads, and who doesn't, you may be interested in my twice monthly email on current road issues and road items of statewide interest. If you would like to receive these emails just send me an email request with position, and county or company at bowers@kansascountries.org .



FIGURE 6: Roller on grader. (Pawnee County)



FIGURE 7: Scarifier with bullet teeth. (Pawnee County)



FIGURE 8: Tractor pulled grading device by Road Groom



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