

**BLET Editor’s Note: The following is a question and answer session with Grady Cothen, Deputy Associate Administrator for Safety Standards and Program Development at the Federal Railroad Administration. This Q&A is intended to help locomotive engineers understand the new regulations that go into effect June 25 regarding train horns and quiet zones.**

**1. How effective do you think this rule will be in making our communities more livable?**

First and foremost this is a safety rule, but we are optimistic that this rule will also begin to reduce the conflicts that are growing up between railroads and communities over noise from railroad operations. Locomotive engineers regularly get caught up in that conflict, because they have a duty to warn; and many residents simply do not understand the need for the warning. We think three aspects of the rule will help. First, the rule facilitates the establishment of quiet zones in areas of low risk or where the local jurisdiction has taken steps to compensate for the absence of the horn. Second, over the next five years the railroads will need to test their air horns and “turn down” the loudest of them, since the new maximum level will gradually go into effect (110 dbA at 100 feet in front of the locomotive, at horn height). Finally, the rule will replace the old distance-driven sounding pattern with a requirement to sound the horn 15-20 seconds prior to arrival of the train on the crossing. For trains going less than 45 mph, that will reduce the noise load impacting the community. Obviously, a train going faster than 60 mph will just start blowing at the whistle board, since starting earlier would not help given the fall-off of horn intensity over the greater distance.

It was important to address the time vs. distance issue in order to make the rule practical. Our impression that state laws requiring horn sounding for 1/4 mile were not strictly enforced. Locomotive engineers running at 10 or 15 miles per hour at 2:00 a.m. have sometimes exercised judgment and showed mercy on communities — by using a standard pattern, perhaps, but starting well after the whistle post. Once you make something a Federal regulation, you’ve increased the pressure to comply. We wanted to have something that made sense for people using good judgment.

**2. How does FRA expect that locomotive engineers will be informed of the presence of Quiet Zones?**

They will handle them pretty much like they handle whistle ban jurisdictions today. Timetable notations are recommended. Some railroads also place an “R” above the “W” on the post to indicate that use of the horn is restricted.

**3. Has FRA considered including locomotive engineers as participants in a “diagnostic team” used to determine the suitability of crossings for Quiet Zone designation? Would it recommend to State Agencies that we be considered for our expertise on that team?**

I think involving train and engine crews is a good idea, because crew members see motorist behavior every day. In fact, one of the final rule appendices, which discusses diagnostic team considerations, recommends that railroad personnel be included in diagnostic team reviews of proposed quiet zone crossings. The perspective of crew members familiar with the territory would be particularly useful in identifying additional things a community could do address pedestrian behavior — an issue about which the rule does not have much to say.

**4. What will FRA do if they find that accidents increase at a crossing or crossings in a Quiet Zone?**

We are going to see numbers go up and down, depending on the location, special circumstances and random factors. Fortunately when you look at the exposure and number of public crossings, these are relatively rare events. Clearly, if we see that a crossing is turning into a real problem, with collisions and reports of near hits, we will conference with the community and railroad and see if more needs to be done. We retain that discretion under the rule.

**5. Could you describe the circumstances allowing or requiring the locomotive engineer to sound the horn regardless of the restrictions of a Quiet Zone?**

First, the subject matter of the rule is sounding the horn at public highway-rail crossings, so it doesn't affect other uses like warning roadway workers. Second, there will still be a requirement to sound the horn, even within quiet zones, if warning devices are known to be malfunctioning. Third, when warning systems are temporarily out of service, the horn will be used as before.

Finally, the rule states that notwithstanding other restrictions, "a locomotive engineer may sound the locomotive horn to provide a warning to animals, vehicles operators, pedestrians, trespassers or crews of other trains in an emergency situation if, in the locomotive engineer's sole judgment, such action is appropriate in order to prevent imminent injury, death or property damage." So we are not going to second guess the locomotive engineer who makes a good faith call that the horn needs to be used.

In addition, the rule is clear that use in an emergency is not required. The reason for that, again, is that we are not going to second guess the locomotive engineer who can't distinguish the pedestrian in dark clothing against a dark background at dusk, for instance. We are confident that locomotive engineers will do the right thing when the need arises and circumstances permit identification of the potential risk.

**6. The temporal (time interval) requirement of 15 to 20 seconds of warning before reaching the crossing when traveling less than 45 mph will replace the railroads' operating rule and many State laws. What provisions will FRA make to ensure that the railroads give an advance marker for the engineer to determine the location of the crossing?**

We are recommending that railroads retain — and maintain — whistle posts as they have in the past. Most whistle posts have been placed at 1/4 mile out. If the train is going 45 mph, the horn should be sounded at that point or within 5 seconds. If the train is going slower, then the pattern will be started later. Engineers know their territory and how fast they are going, and our belief is that locomotive engineers will find that they adapt to this pretty readily.

Of course, where there is a crossing every city block, this will be pretty academic. The locomotive engineer will do what is necessary to get the requisite minimum warning at each crossing.

**7. Will locomotive engineers be subject to monetary penalties for violations?**

There is always the potential for a civil penalty for a willful act. I'm not expecting that to happen. In our experience, locomotive engineers do a good job alerting the public at grade crossings. Perhaps more than anyone else, train and engine crew members understand the importance of this warning.

If we have to use a penalty to change abusive behavior with respect to horn use at crossings, we will. But, again, I would be very surprised for that to become an issue.

**8. Will the 15 to 20 seconds time interval be enforced should the engineer sound the horn for longer than 20 seconds?**

We needed to specify a range that does two things. First, at the short end we have to provide at least minimum warning. We believe 15 seconds will handle that, but locomotive engineers will need to be sure to provide that minimum warning. Second, we wanted to provide a maximum to emphasize that this is a nuisance when it goes on longer than useful. If we had an engineer who abused use of the horn repeatedly and deliberately and a cautionary discussion did not have the desired effect, we would enforce. I don't think we are going to see many, if any, cases of that kind.

I appreciate that there may be a concern about occasionally sounding for a little more than 20 seconds, particularly where visibility is compromised, etc. That should not be an issue as a practical matter. We try to err on the side of safety, and it would be hard to fault an engineer for doing the same thing.

**9. How does the rule apply to private and pedestrian crossings?**

The rule does not deal with private and pedestrian crossings outside of quiet zones, so whatever use is made of the horn today would continue without change.

The rule does require that the safety of private and pedestrian crossings within quiet zones be considered by the diagnostic team in forming plans for the quiet zone. Taking into consideration comments from railroad industry parties, including your organization, we wanted to make sure that angle was covered.

**10. In the event of an accident, will locomotive engineers be held liable if they fail to sound the horn at a crossing in a Quiet Zone crossing?**

The official answer is that the courts will decide, but I would be shocked if any court held a locomotive engineer liable for failing to sound the horn at a crossing in a quiet zone, and if it ever happened I would expect it to be quickly overturned on appeal. The rule defines the standard of care for the railroad, including the locomotive engineer, and for the community. If the rule says the locomotive engineer will withhold the audible warning within the quiet zone, that's that.

**11. Does this Final Rule bring additional liability to locomotive engineers for failure to sound the horn at non-quiet zone crossings?**

Most States have had laws requiring horn sounding at public crossings, and this just replaces them. Even where there has been no state law, the operating rules have in effect established a standard of care. So, in general, no, I don't think it puts locomotive engineers in a more difficult position.

**12. The Final Rule mentions PTC. Has FRA considered malfunctions of a horn system associated with on-board train control?**

If a railroad elected to tie in sounding the horn into a train control system they would need to treat it as a safety critical function. Certainly in looking at any product safety plan (under the new rule on Performance Standards for Processor-Based Signal and Train Control Systems) we would focus sharply on that.

**13. The rule has two appendices. Appendix A describes the approved Supplementary Safety Measures (SSM) and Appendix B describes the Alternative Safety Measures (ASM). How does FRA know that these measures actually provide the same level of safety as the locomotive horn?**

We picked approaches like medians and four-quadrant gates that seemed to offer obvious advantages, and we have experience with them in demonstration projects as well as in longstanding use at various locations. Then we were somewhat conservative in applying effectiveness estimates. So we have a combination of engineering judgment and data that tells us we are on firm ground. That is not to say there won't be some variability of results from place to place. I'm sure there will be.

**14. The Associate Administrator for Safety determines if a proposed SSM or ASM is adequate to provide this level of safety. What recourse is available to someone who disagrees with a decision to approve a SSM or ASM?**

The issues that will arise will be around modified SSMs and ASMs, and public authority or railroad that disagrees with the initial decision may petition for reconsideration, which may trigger additional proceedings. If one of those parties remains unsatisfied after reconsideration, the party could petition for review before any Federal court of appeals.

**15. How is the public, or in our case, locomotive engineers, provided an opportunity to comment on a proposed Quiet Zone when the Associate Administrator is requested to approve the Quiet Zone after there is agreement among all the other interested parties (railroads, local and State jurisdictions, law enforcement, and private land owners)?**

We can't turn each of these into a full-blown rulemaking or waiver proceeding or we will never get our work done. The system is set up to make things as simple as reasonably possible. Having said that, BLET knows our grade crossing managers in the field and our staff here in headquarters. If there are concerns that working locomotive engineers have about these budding quiet zones, please don't hesitate to step forward.

**16. Wayside horns under sub-section 222.59 and Appendix E require that the engineer be given advance warning that the wayside horn is operating. How will this be accomplished?**

The wayside horn set-up includes a self-monitoring health indication (an orange LED, "X" shape) that tells the engineer that the system is active. If it is not displayed, then the engineer will know to sound the horn.

**17. Will the maximum decibel level decrease the incidence of hearing loss among train crews? Was the hearing loss issue taken into account during the writing of this rule?**

In the past, we had a minimum horn level in the Locomotive Safety regulations, but we did not have a maximum. So where the horn exceeds the new maximum it will have to be turned down. I don't think we are going to see a dramatic reduction in cab noise levels, but both the maximum level and the time-based pattern should help to reduce the noise "dose." BLET is a valued member of the Railroad Safety Advisory Committee effort on Cab Noise, which has provided recommendations for a final rule on Occupational Noise Exposure of Railroad Operating Employees that was adopted by the full RSAC on May 18. FRA is preparing the final rule in accordance with those recommendations, and it should contribute further to hearing conservation in this industry.

**18. Locomotive engineers have experienced trauma following grade crossing accidents. What is FRA doing to address this problem?**

Nearly 1000 fatalities occur annually from trains striking motor vehicles and individuals along the track. These events can be very traumatic to train crew members who are powerless to prevent the collisions. Work-related traumas such as these can cause extreme stress, resulting in Post-Traumatic Stress Disorder (PTSD) or Acute Stress Disorder. It can affect safety as well.

FRA believes that employee exposure to workplace trauma from grade crossing and trespasser incidents may be an important issue affecting railroad workers. Many railroads have already established what are known as Critical Incident Stress Debriefing (CISD) intervention programs. They are varied in their approach, and it is not certain which components of those programs are most effective.

FRA's Human Factors R&D Program has initiated a research project to help understand the magnitude of this concern and to help determine the most effective components of a successful CISD intervention program. This project will help identify "best practices" for CISD programs in the railroad industry. The principal components of this project include: 1) benchmarking rail industry CISD programs; 2) establishing the prevalence of traumatic stress disorders in the rail industry and identify at-risk populations; and 3) evaluating the effectiveness of individual components of CISD programs. FRA has published notices about the study in the Federal Register in compliance with the OMB process.

The overall intent of this project is to ultimately develop the most successful CISD programs possible and to target the highest risk populations. A small CISD Advisory Group has been organized to help steer this effort, consisting of representatives from railroads, unions, and FRA Safety and R&D.

The findings and recommendations from this effort are not intended for use in a rulemaking process. FRA recognizes the railroad industry voluntarily instituted CISD programs to minimize the likelihood of extreme stress among its workforce. Similarly, we are confident that the CISD best practices identified as a result of this study can be implemented most efficiently on a voluntary basis. •