

2.0 Problem Statement

The problem considered by this rule is highway-rail grade crossing collisions and their resulting casualties at crossings where locomotive horns are not routinely sounded. Motorists at passively marked crossings where horns are not sounded must detect approaching trains based solely on visual information. Unfortunately, hills, structures, vegetation, track curvature, road curvature, as well as sun angle, inclement weather conditions, and darkness often impair motorists' view of a train's approach. Under such circumstances, train horns provide invaluable warning.

Motorists at crossings with active warning devices often rely on the warning provided by locomotive horns as well. Sometimes the "fail safe" characteristics of warning devices may result in extended activation periods that give a false impression to the motorist that they are malfunctioning. In some very rare cases, active devices fail to activate. Sometimes motorists attempt to drive over crossings in an effort to beat trains. In such circumstances, the horn blast may provide the final warning needed to check that impulse. Finally, even a motorist in a stalled vehicle may benefit from the urgent warning that the train's arrival is imminent and it is time to vacate the vehicle.

FRA believes, and studies show, that not sounding locomotive horns at grade crossings increases the potential for highway-rail collisions at those crossings. During the five-year period between 1997 and 2001, 301 collisions that were potentially preventable by sounding locomotive horns occurred at whistle-ban crossings. These collisions resulted in 21 fatalities and 110 non-fatal injuries. This translates into an annual average of 60 collisions, 4 fatalities, and 22 injuries.

FRA has documented both the increase in risk at whistle-ban crossings and the effectiveness of the locomotive horn. Effective July 1, 1984, Florida authorized local governments to ban the nighttime use of locomotive horns by intrastate trains approaching grade crossings equipped with flashing lights, bells, crossings gates, and highway signs warning motorists that train whistles would not be sounded at night. Many local jurisdictions passed whistle ban ordinances. FRA studied the effects of these bans and found that the nighttime collision rate increased at whistle-ban crossings dramatically after the nighttime bans were established, while the daytime collision rates remained virtually unchanged for the same crossings. Collision rates of an interstate railroad at similarly equipped crossings in Florida and along the same route at crossings with no whistle bans did not increase nearly as much. On July 26, 1991, FRA issued an emergency order to end whistle bans in Florida. Once the horns began to sound again, the collision rate returned to its pre-ban level.

A national study using both empirical data and a computer model showed significant increase in the number of collisions at crossings with whistle bans¹. "An analytical comparison of 1,222 crossings subject to whistle bans from 1989 through 1993 against all other 167,000 public grade

¹ US Department of Transportation, Federal Railroad Administration, *Nationwide Study of Train Whistle Bans*, April 1995.

crossings in the national inventory was made. The comparison showed crossings with whistle bans have a significantly higher average accident frequency than the non-ban crossings." "Furthermore, a comparison of the circumstances of accidents indicated that sounding of locomotive horns reduced the frequency of accidents during the hours of darkness and also reduced the frequency of motorists driving around lowered crossing gates." FRA was concerned about the higher risk at whistle-ban crossings disclosed by this nationwide study.

While crossing collisions are generally very infrequent events at individual crossings, the 1995 nationwide study and the experience in Florida showed they were more frequent when locomotive horns were not sounded. Subsequent updates and revisions to the nationwide study continue to indicate that collision rates are significantly higher at grade crossings with whistle bans than at similar crossings where locomotive horns are routinely sounded.

Section 20153 of Title 49 of the United States Code, requires the Secretary of Transportation to issue rules requiring the use of locomotive horns at grade crossings and provides authority to make reasonable exceptions. A 1996 amendment (Public Law 104-264) requires the FRA to take into account the interests of communities that have in effect restrictions on the sounding of a locomotive horn at highway-rail crossings, to work in partnership with affected communities to provide technical assistance, and to provide a reasonable amount of time for local communities to install supplementary safety measures taking into account local safety initiatives.