

In August 1990, FRA issued a study of the effect of the Florida train whistle ban up to the end of 1989. The study compared the number of collisions at crossings subject to bans with four control groups. FRA was trying to determine the impact of the whistle bans and to eliminate other possible causes for any increase or decrease in collisions.

Using the first control group, FRA compared collision records for time periods before and during the bans. FRA found there were almost three times more collisions after the whistle bans were established, a 195 percent increase. If collisions continued to occur at the same rate as before the bans began taking effect, it was estimated that 49 post-ban collisions would have been expected. However, 115 post-ban collisions occurred, leaving 66 crossing collisions statistically unexplained. Nineteen people died and 59 people were injured in the 115 crossing collisions. Proportionally, 11 of the fatalities and 34 of the injuries could be attributed to the 66 unexplained collisions.

In the second control group, FRA found that the *daytime* collision rates remained virtually unchanged for the same highway-rail crossings where the whistle bans were in effect during nighttime hours.

The third control group showed that nighttime collisions increased only 23 percent along the same rail line at crossings with no whistle ban.

Finally, FRA compared the 1984 through 1989 accident record of the Florida East Coast Railway Company (FEC), which, because it was considered an "intrastate" carrier under Florida law, was required to comply with local whistle bans, with that of the parallel rail line of interstate carrier, CSX Transportation Company (CSX), which was not subject to the whistle ban law. By December 31, 1989, 511 of the FEC's 600 gate-equipped crossings were affected by whistle bans. Collision data from the same period were available for 224 similarly equipped CSX crossings in the six counties in which both railroads operate. As noted above, FRA found that FEC's nighttime collision rate increased 195 percent after whistle bans were imposed. At similarly equipped CSX crossings, the number of collisions increased 67 percent.

On July 26, 1991, FRA issued an emergency order to end whistle bans in Florida. Notice of that emergency order (Emergency Order No. 15) was published in the **Federal Register** at 56 FR 36190. FRA is authorized to issue emergency orders where an unsafe condition or practice creates "an

emergency situation involving a hazard of death or injury." 49 U.S.C. 20104. FRA acted after updating its study with 1990 and initial 1991 collision records and finding that another twelve people had died and thirteen were injured in nighttime collisions at whistle ban crossings. During this time, a smaller study, conducted by the Public Utility Commission of Oregon, corroborated FRA's findings and led to the cessation of State efforts to initiate a whistle ban in Oregon.

FRA's emergency order required that trains operated by the FEC sound their whistles when approaching public highway-rail grade crossings. This order preempted State and local laws that permitted the nighttime ban on the use of locomotive horns.

Twenty communities in Florida petitioned for a review of the emergency order. During this review, FRA studied other potential causes for the collision increase. FRA's closer look at the issue strengthened the conclusion that whistle bans were the likely cause of the increase.

For example, FRA subtracted collisions that whistles probably would not have prevented from the collision totals. Thirty-five collisions where the motor vehicle was stopped or stalled on the crossing were removed from the totals. Eighteen of these collisions occurred before and 17 were recorded during the bans. When these figures were excluded, the number of collisions in the pre-ban period changed from 39 to 21, and the number of collisions in the post-ban period decreased from 115 to 98. Collisions which whistles could have prevented, therefore, totaled 98 collisions as compared to 21 collisions in the pre-ban period; this represents a 367 percent increase, compared to the 195 percent increase initially calculated.

Similarly, if collisions where the motor vehicle hit the side of the train were also excluded (nine in the pre-ban period and 26 in the post-ban period) as being unlikely to have been prevented by train whistles, the pre-ban collision count became 12 versus 72 in the whistle ban period. The increase in collisions caused by the lack of whistles then became 500 percent.

FRA's data, however, showed that, before the ban, highway vehicles on average, struck the sides of trains at the 37th train car behind the locomotive. After the ban took effect, 26 vehicles struck trains, and on average, struck the twelfth train car behind the locomotive. This indicated that motor vehicles are more cautious at crossings if a locomotive horn is sounding nearby. Before the whistle bans, highway vehicles tended to hit the side of the

train after the whistling locomotive had long passed through the crossing. After the ban took effect, highway traffic hit the train much closer to the now silent locomotive—at the 12th car. The number of motor vehicles hitting the sides of trains also increased nearly threefold after the ban was established.

FRA also considered collisions involving double-tracked grade crossings where two trains might approach at the same time. Since a driver's view of the second train might be blocked, hearing the second train's whistle could be the only warning available to an impatient driver. FRA's Florida study found the number of second train collisions for the pre-ban period was zero, while four were reported for the period the bans were in effect.

Several Florida communities asked whether train speed increased collisions. FRA research has well established, as discussed below, that train speed is not a factor in determining the likelihood of a traffic collision at highway-rail crossings equipped with active warning devices that include gates and flashing lights. Speed, however, is a factor in determining the severity of a collision.

FRA also considered population growth in Florida, but found it was not a factor. Daytime collision rates were not increasing at the very same crossings that had whistle bans at night. If population was a factor, then the daytime numbers should have increased dramatically as well. FRA also reviewed the number of fatal highway collisions, and registered drivers and motor vehicles and found no increases that either paralleled or explained the rise in nighttime crossing collisions.

In the first two years after July 1991, when FRA issued its emergency order prohibiting whistle bans in Florida, collision rates dropped dramatically to pre-ban levels. In the two years before the emergency order, there were 51 nighttime collisions. In the two years after, there were only 16. Daytime collisions dropped slightly from 34 collisions in the two years before the emergency order, to 31 in the following two years.

4. FRA's Nationwide Study of Train Whistle Bans

FRA's Florida study raised the concern that whistle bans could be increasing collisions in other locations. Given the wide difference between grade crossing conditions from one community to another, FRA did not assume that the Florida results would be true at every whistle ban crossing. FRA began a nationwide effort to locate grade