



CEMOF Monitoring Committee

Caltrain Horns Frequently Asked Questions

1. Why did Caltrain decide to move the horns?

During the most recent routine safety inspection it was discovered that Caltrain's horns were not producing the distinct, separate, sequential blasts required by federal regulations. Since the horns are powered by air pressure, it was determined that the length of the air lines required to supply pressure to the horns could not be properly regulated. The horns were operating in a long, slowly-dissipating sound, which is not in compliance. In order to remain in compliance the horns were restored on top of the trains, shortening the air pipe and allowing greater control of the horns.

2. How loud are the horns?

Federal law allows a range between 96 - 110 decibels (dB), measured 100 feet in front of the equipment, four feet above the ground. Caltrain sets the horns at 98+2 dB. The horns are powered by air, meaning that they are not easily fine-tuned and air pressure can vary. In order to maintain a safe operating environment, Caltrain does not set the horns at the absolute minimum of 96 dB in case air pressure, and the resultant dB level, drops. Setting the horns at 98+2 dB provides a buffer that prevents the horns from dropping below the legal level.

3. Why are the horns louder than before?

When the horns were first restored to the top of the trains, they were louder than the setting of 98+2 dB. Staff immediately noticed the increased volume of the horns and acted quickly to identify methods of reducing the volume back to the 98+2 dB standard. As a result, a regulator valve has been installed and the volume lowered in all of the locomotives and forward cab cars as of August 26, 2009.

The horns are deployed on top of the trains approximately 16 feet in the air. As a result, the sound disperses over a wider area, giving the impression that the horns are louder.



4. When do the horns have to be sounded, and why does it seem that we only hear long blasts, sometimes non-stop?

According to federal regulations, train engineers are required to sound the horn one-quarter mile before every automotive or pedestrian crossing, whenever they approach a station platform on which a person is standing, and whenever they see a trespasser near the tracks. There are 55 vehicle and pedestrian crossings between San Francisco and San Jose, all of which require the horn to be sounded. Engineers are allowed to use their discretion when determining when and for how long the horns need to be sounded in order to ensure safe operation of the rail line. Given the number of trains that Caltrain operates, there are also times when two trains may be passing the same crossing in opposite directions and sounding their horns simultaneously, giving the impression of one continuous blast by a single train.

5. If several crossings are within a quarter-mile each other, why does the train have to sound its horn at every crossing?

State and federal regulations require the trains to sound the horns at every crossing.

6. Why is all of the horn testing taking place at CEMOF?

CEMOF is the only Caltrain maintenance facility where this kind of testing can take place. Due to the need to test for horn function and sound intensity in accordance with federal regulations, it is not possible to test the horns indoors. This is due to the inability to perform the test 100 feet in front of the equipment, as well as the reverberating effects of the walls and equipment inside the maintenance building.

In addition to the horn testing, there are times when maintenance and construction crews are working in close proximity to the tracks. Whenever this occurs, a flagman is required to be present to protect the work that is going on. Any train that approaches an area protected by a flagman must sound its horn. This type of work was performed by Caltrain and Union Pacific Railroad (UP) at two separate locations during the weeks of August 10th and August 17th, accounting for the horn noise that was reported to Caltrain. Caltrain was working on a tower near the south end of the CEMOF facility, while UP was performing work north of Stockton Avenue near the cement plant.



7. How much longer will the testing at CEMOF take place?

The restoration of the horns to the top of the trains has been completed, and the additional horn testing pertaining to this work has also ceased. However, Caltrain has found a way to restore the horns to the bottom of the equipment and still have them comply with the federal regulations for the distinct, separate, sequential blasts. As these horns are moved, they will have retested to get them to the appropriate sound levels.

Please note that horn testing will always be required for repairs and for preventive maintenance inspections, which occur at 92-day intervals on every locomotive and cab car, in accordance with Federal regulations.

8. What times during the day is testing allowed?

Caltrain has asked its contracted Amtrak staff to conduct the horn relocations and testing between 8:00 am and 8:00 pm. This allowed the work to be done as expeditiously as possible and get Caltrain back into compliance with the FRA regulations while minimizing the impact on the community to the greatest extent possible. Caltrain tries hard to ensure that most work is performed during daytime hours. The amount of testing conducted has been due to the unusual set of circumstances for this project.

9. With this horn testing, Caltrain is violating the Shared Objectives that were developed with the community to govern the operations of the facility. The specific objective is A-17, which states that Caltrain shall establish and implement a policy to utilize muffling devices when performing any horn tests.

Caltrain recognizes the importance of the shared objectives and its interface with the community. However, the purpose of the horn testing, whether it pertains to the current relocation work or to the normal 92-day preventive maintenance schedule, is to test the sound levels emitted from the horns, not just whether they work or not. The federal regulations require the decibel readings on the horns to take place 100 feet in front of the equipment, four feet above the ground. As a result, there is no product on the market that can muffle the horns and allow them to be tested for compliance with the federal regulations.