

**STATEMENT OF THE
MANUFACTURERS OF EMISSION CONTROLS ASSOCIATION
TO THE OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD'S SECOND
PROPOSED 15-DAY MODIFICATIONS TO THE STATE STANDARD TITLE 8,
DIVISION 1, CHAPTER 4, REGARDING VEHICLE EXHAUST RETROFITS**

July 20, 2011

MECA would like to provide the following comments to the Occupational Safety and Health Standards Board's second 15-day notice of modifications to Title 8, Division 1, Chapter 4, Sections 1504, 1591 and 1597 regarding Vehicle Exhaust Retrofits. We want to thank OSHSB staff for their consideration of comments received thus far and believe that the most recent proposal has made several positive changes towards a more performance based safety requirement for diesel exhaust retrofits installed on haulage and earth moving vehicles. The return of a revised and simplified Appendix A is a positive step towards providing guidance and a method that vehicle owners may use to determine compliance with the proposed visibility requirements. The treatment of under hood retrofit installations with respect to thermal hazards has been positively clarified and the treatment of retrofit installations to the rear of equipment that can pivot allowing clear visibility in the direction of travel, such as excavators, has been logically addressed. MECA is committed to safe installation of exhaust retrofits. We believe that an overarching goal of insuring the safety of construction workers must begin with a consistent set of safety regulations rather than establishing different standards for modifications based on their perceived benefit to the functionality of equipment. In the interest of safety, regulations must serve to ensure that modifying construction equipment with a retrofit, or any other add-on accessory is done with consideration to the safe operation of the vehicle, the operators and workers on construction sites.

MECA is a non-profit association of the world's leading manufacturers of emission control technology for motor vehicles. Our members have over 30 years of experience, and a proven track record, in developing and manufacturing emission control technology for a wide variety of new diesel and gasoline on-road and off-road vehicles and equipment. A number of our members have extensive experience in the development, manufacture, and application of PM and NOx control retrofit technologies including most of the devices on ARB's Verified Diesel Emission Control System (VDECS) list. MECA members are committed to insuring that retrofit devices on construction vehicles are installed in a safe and responsible manner. Our recommendations below focus on the failure to demonstrate necessity and consistency in the proposal with regard to the treatment of visibility impacts associated with all modifications to haulage and construction equipment.

I. In response to MECA comments dated April 25, 2011, as well as in previous rulemaking correspondence, OSHSB staff has failed to make a compelling public policy argument for the necessity of a separate set of visibility standards for exhaust retrofit devices, beyond those that already exist for any modification of construction equipment as covered by Section 1591(b).

OSHSB staff has repeatedly failed to consistently treat the visibility impacts caused by all modifications to construction equipment such as the installation of third-party, aftermarket accessories and rather provided weak, hand waiving arguments why exhaust retrofits should be singled out. Since the very beginning, when Petition 507 was approved, MECA has supported the petitioners request for consistent treatment for all modifications as defined by Section 1591(b). In response JK4 of the Summary and Responses to Comments, staff stated that “MECA objected to the petitioner’s language that 1591(b) should be amended to include visibility impacts to the rear of the vehicle and in turn sought an exemption for exhaust retrofits to allow a limited amount of visibility masking”. A careful examination of our comments dated November 20, 2008 reveals that VDECS manufacturers objected to the petitioner’s language requiring OEM approval of modifications to vehicles because it established a conflict of interest in cases where OEM’s were selling their own exhaust retrofit products. MECA recognized that visibility masking was already being allowed for hundreds of third-party accessories installed on construction equipment in the absence of a visibility guideline, and therefore any different treatment of exhaust retrofits would be inconsistent with the current regulation. Visibility and safety should not be weighed against the functional benefit of the modification.

At the time the petition was filed (August 7, 2008), CARB had established regulations that required exhaust retrofits on approximately 100,000 in-use, off-road construction vehicles. The petitioners were concerned that thousands of exhaust retrofits would have to be installed on off-road vehicles and this would result in a significant increase in the number of workplace accidents due to potential blocked visibility. On December 17, 2010, The California Air Resources Board amended their regulation to no longer require the installation of exhaust retrofits to comply with their off-road regulation but rather allowing retrofits to be used as a voluntary compliance option at the discretion of fleet owners. These changes have resulted in very few off-road retrofit installations since the ARB regulations have been changed and it is no longer true that thousands of retrofits will be installed as claimed by OSHSB staff. On the other hand, hundreds of third-party add-on accessories are installed on off-road vehicles each year for which the vehicle was not originally designed. These accessories were developed by third-party suppliers to increase the functionality of the equipment above and beyond its original intended application (see examples provided by Charles Call dated 2/17/11). Since the elimination of a retrofit mandate to CARB’s off-road regulation, the choice made by owners to modify off-road vehicles by installing retrofits or any other aftermarket part is strictly voluntary. In their response to JK4, staff argues that expanding the scope of the proposal to include all equipment and accessories would require more work and delay the adoption of an effective standard or possibly require multiple standards to be developed. In fact OSHSB staff fails to recognize that an effective and non-biased standard (ISO 5006) already exists which is the basis for the use of a 40 inch perimeter as in the proposed Appendix A. A safe visibility limit should not be any different for one modification versus another. In fact ISO 5006 makes no such distinction and we continue to assert that consistency and necessity have been overlooked in the proposed regulation.

To our knowledge, no accidents have ever been attributed to the presence of exhaust retrofit devices on construction vehicles and therefore the necessity to establish a separate regulation (1591(m)) for exhaust retrofits, beyond what is already covered by Section 1591(b)

has not been justified. OSHSB has not provided any data or evidence that would suggest that diesel retrofits have been found to increase the number of accidents due to visibility impairment.

MECA agrees that any modification of an OEM vehicle design must incorporate safety as the overarching goal. Our industry takes the safe operation and installation of emission control devices very seriously and recognizes that accidents on worksites that are attributed to blocked operator visibility occur every year. We also believe that if a regulation is truly motivated by a desire to address the root cause of visibility based workplace accidents, than it must be consistent in its approach toward addressing the root cause and not discriminate between add-on devices. In their most recent response to the first 15 day comments, staff has failed to justify the necessity of a visibility standard specific to exhaust retrofits or why the installation of exhaust retrofits should be treated differently from the installation of other aftermarket parts on off-road equipment. Since the removal of a retrofit mandate in CARB's off-road regulation the threat of thousands of installed retrofits no longer exists and in fact are not being sold in greater numbers than any other aftermarket parts.

II. MECA requests that Appendix A be modified to combine the originally proposed 5 foot high perimeter, 40 inches from the vehicle together with the camera positioned at the operators seated position as this would represent the best real world and simple procedure for determining the view that an operator would have while operating the vehicle.

We support the concept of simplifying Appendix A to use a camera rather than the LED apparatus of the February 17th proposal. We believe this approach is much easier to follow and achieves the overall objective of depicting the view of the operator. In the original (February 17th) proposed Appendix A, staff relied on a 5 foot high perimeter line, 40 inches away from the vehicle to represent the chest height of a worker on the ground as recommended in ISO 5006. In their latest proposal, the 40 inch perimeter line was dropped to ground level which is a height where no worker would ever be positioned. We believe that a five foot high perimeter represents a more realistic position of a site worker. In their response to comments, staff argues that a height of 5 feet would not protect workers kneeling on the ground. In this case a height of 3.5 feet may be more suitable and certainly more realistic than at ground level.

III. MECA requests that the camera lens position allow for a horizontal 8 inch range of motion from the seat reference point to represent the operator's ability to move his or her head and torso.

In the original (February 17, 2011) proposed Appendix A, the 8 inch spacing of the two light sources was incorporated to "simulate the operator's ability to move his or her head and torso, which increases the horizontal range of eye positions". An operator is not fixed in a rigid seat position and the above provision would be a more realistic representation of the operator's field of view. This was included in the original measurement procedure in Appendix A. The simplified procedure, using the camera, would be maintained by taking photographs positioned 4 inches to the right and left of the seat reference point in the direction of the retrofit.

IV. MECA requests that staff clarify the handling of certain equipment like scrapers or graders where the entire side of the vehicle is blocked from view even beyond a 40 inch perimeter by the hood of the vehicle itself.

This scenario creates an inconsistency in regulatory law where a piece of equipment that failed the visibility test would be allowed to operate in a workplace as long as it does not have a retrofit installed. In some vehicles like scrapers, graders and haulage vehicles, an operator must rely on the OEM installed parabolic mirror to insure that a worker is not at risk of being injured next to the vehicle. A retrofit positioned to the side of a scraper or grader would not block any more of the 40” boundary than the original vehicle itself. **Since these vehicles are not designed to travel sideways, some limited masking equal to or less than the OEM muffler that is replaced should be allowed. This would be similar to the provision allowed for retrofits installed to the rear of excavators.** MECA provides the attached example of a scraper where the retrofit (Figure 1) clearly improves the visibility over the OEM designed muffler (Figure 2). The current language would not allow this retrofit installation because it may block a portion of the 40” perimeter line. **Similar to the treatment of exhaust stacks, we request that the regulation allow retrofit installations that result in equal or less masking than OEM components that they replace.** Figures 1 and 2 also demonstrate that on some equipment, like this scraper, the visibility to the entire side of the vehicle is blocked by the hood unless the driver relies on the OEM mirrors that are provided for that purpose. In staff’s response to JK5, they argue that “Mr. Kubsh provided no evidence that vehicles with mirrors and an obstructed view to the rear are as safe as vehicles with mirrors and an unobstructed view to the rear”. MECA provides this example, (Figures 1 & 2), to show how the use of an OEM mirror makes the vehicle safer whether the view is obstructed or unobstructed. In fact a completely unobstructed view provides no visibility within 40 inches of the sides of the vehicle without the use of the mirror.

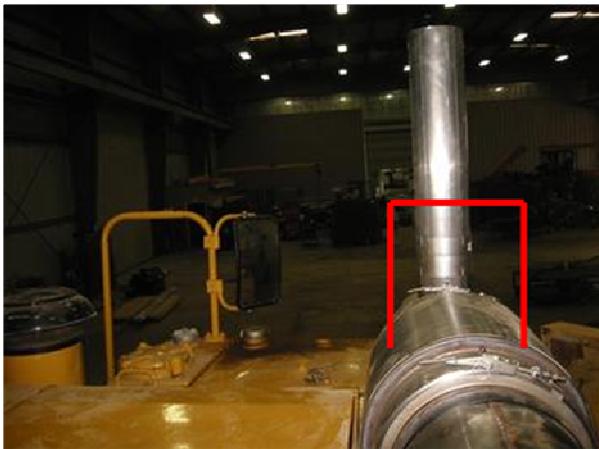


Figure 1: Retrofit reduces masking caused by muffler OEM muffler outlined in red.



Figure 2: Masking caused by OEM

V. MECA continues to believe that mirrors are essential visibility aids and therefore the use of OEM installed mirrors should be allowed when assessing visibility around a vehicle or equipment.

In their response to JK5, staff referenced a NIOSH study (NIOSH Publication 2001-128, www.cdc.gov/niosh/topics/highwayworkzones) and claim that OEM mirrors are not reliable for improving visibility around haulage and earthmoving vehicles. We were unable to find any such claim in the report but rather we found the recommendation to policy makers at the end of the study suggesting that the use of parabolic mirrors, transmitters, video cameras and sensing devices be further evaluated as a way to improve safety. The work that the NIOSH study was based on “Building Safer Highway Work Zones: Measures to Prevent Worker Injuries from Vehicles and Equipment”, Pratt et al. 2001 recommends the use of RFID (Radiofrequency Identification) as a way to reduce worker injuries. Furthermore, staff claims that mirrors are not effective in eliminating large blind spots behind haulage and earthmoving vehicles. There are hundreds of visibility diagrams for different pieces of construction equipment published by the Center for Disease Control and Prevention and NIOSH that calculate the blind spots around equipment with and without the use of OEM mirrors. (“Construction Vehicle and Equipment Blind Area Diagrams” Contract 200-2002-00563, <http://www.cdc.gov/niosh/topics/highwayworkzones/BAD/imagelookup.html>) **Although on some vehicles, blind spots cannot be completely eliminated by the use of mirrors, there are no examples of where mirrors have not effectively reduced blind spots.**

VI. For the sake of clarification of Figure 1 in Appendix A, the position of the 40’ perimeter line used to determine failure should be shown. Depending on where that line is positioned in the figure with respect to the top edge of the retrofit would determine an actual failure condition as described in the procedure.

In closing we believe that in their comments OSHSB staff has failed to articulate the necessity for Section 1591(m)5 specifically addressing visibility impacts of diesel exhaust retrofits above and beyond Section 1591(b) governing impaired visibility caused by equipment and accessories installed on construction vehicles. The changes to CARB’s off-road fleet regulations have made the installation of exhaust retrofits a voluntary option and similar in occurrence to the installation of any aftermarket accessory. We agree with the comments of the petitioners that in order to be faithful to the interests of employee safety, there remains a need to consistently apply visibility impairment criteria to all aftermarket accessories and not single out one subset of accessories. We ask the Board for their further consideration of our comments in evaluating the safety implication of the proposed modifications. We thank the OSHSB staff for their hard work and dedication in striving to develop a fair and balanced set of guidelines for the safe modification of construction vehicles and equipment. Our industry is committed to do its part to insure the safe installation of diesel exhaust retrofit systems on all vehicles.

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