Standard Interpretations

09/27/2004 - Alternatives to common back-up alarms on construction motor vehicles; use of other effective technology or observers/signal persons.


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- Standard Number: 1926.601; 1926.601(b); 1926.601(b)(4); 1926.601(b)(4)(i); 1926.601(b)(4)(ii); 1926.602; 1926.602(a); 1926.602(a)(9); 1926.602(a)(9)(ii)

OSHA requirements are set by statute, standards and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at http://www.osha.gov.

September 27, 2004

[Name and address withheld]

Re: §§1926.601(b)(4) and 1926.602(a)(9)

Dear [Name withheld]:

Thank you for your letter of April 30, 2004, regarding noise emanating from excavating equipment and the Occupational Safety and Health Administration (OSHA) requirements for back-up alarms on construction equipment. We apologize for the delay in responding.

We have paraphrased your question as follows:

Question: The repetitive, piercing beeping noise emitted from back-up alarms on excavating equipment at a construction site is stressful to residents who live nearby. Other methods of alerting or warning employees have become available in recent years. Do OSHA back-up alarm requirements allow for the use of methods that would be less noise-intrusive to nearby residents?

Answer: Yes. Two OSHA requirements, 29 CFR 1926.601(b)(4) and 1926.602(a)(9), relate to back-up alarms in construction. Those provisions were promulgated in 1971 and were derived from Army Corps of Engineers standards.

Title 29 CFR 1926.601(b)(4) states:

§1926.601 Motor vehicles.

* * *

(b) General requirements.

* * *

(4) No employer shall use any motor vehicle equipment having an obstructed view to the rear unless:

(i) The vehicle has a reverse signal alarm audible above the surrounding noise level or:

(ii) The vehicle is backed up only when an observer signals that it is safe to do so.

Section 1926.602(a)(9)(ii) states:

**§1926.602 Material handling equipment.**

* * *

(a) Earthmoving equipment; General.

* * *

(9) Audible alarms.

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(ii) No employer shall permit earthmoving or compacting equipment which has an obstructed view to the rear to be used in reverse gear unless the equipment has in operation a reverse signal alarm distinguishable from the surrounding noise level or an employee signals that it is safe to do so.

These standards were established because of the pervasive construction hazard of being struck by construction vehicles. Recent OSHA data underlines the importance of protecting against this hazard. In the period 2001-2004, OSHA investigated eight fatal accidents in which a worker was struck by a construction vehicle that was backing up without an operable alarm.

However, as we explained in a [November 3, 1998 interpretation letter to Ms. Sue Nunn](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATION&p_id=101169), who expressed concerns similar to yours, §§1926.601(b)(4) and 1926.602(a)(9) by their terms give employers flexibility beyond the use of alarms—both provisions permit the use of an observer/signal person instead.

In addition, in a [May 27, 2004 interpretation letter to Mr. Richard Holmes](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATION&p_id=101169), we acknowledged that the standard may be met through the use of more technically advanced devices than the common single (high-pitch) tone alarm. Mr. Holmes asked if a reverse alarm manufactured in the United Kingdom that uses "white noise" instead of a single-tone alarm could be used to meet these requirements. We stated that §§1926.601(b)(4) and 1926.602(a)(9) allow for the use of such devices if they are shown to be effective.

These provisions, by their terms, do not specify that a reverse signal alarm be of the single-tone type. However, we have neither the data nor the resources to evaluate whether this particular device would be "audible above the surrounding noise level" as required by the standard. **If it does meet this test—that is, provides adequate warning to workers in the path of the vehicle, and to workers walking towards the path of the vehicle in time to avoid contact—it would comply with §1926.601(b)(4).** [Emphasis added.]

In sum, we appreciate your concern about unintended, adverse consequences to those living near construction sites from the use of the common type of alarm. We reiterate that the standard does provide flexibility to construction employers, both in terms of using other technology that is effective and in using observers/signal persons.

If you need additional information, please do not hesitate to contact us by fax at: U.S. Department of Labor, OSHA, Directorate of Construction, Office of Construction Standards and Guidance, fax # 202-693-1689. You can also contact us by mail at the above office, Room N3468, 200 Constitution Avenue, N.W., Washington, D.C. 20210, although there will be a delay in our receiving correspondence by mail.

Sincerely,

Russell B. Swanson, Director
Directorate of Construction

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1 OSHA paraphrased the concerns stated in Ms. Nunn's as follows: "Your letter expressed concern that electronic high-pitched alarm sounds can irritate the nervous system, which you assert can affect construction workers physically and emotionally. You also note that the noise can affect others who are near construction sites, and you ask that the Agency ensure that there is a balance between the safety merits of back-up alarms with the detrimental effects from the sounds they make. You explain that over the past 15 years, mechanical bell
alarms have been replaced by high-pitched electronic sound-producing devices and request that OSHA study the effects of the noise made by this type alarm.” [back to text]

[Corrected 6/12/07]