



FIX-N-FAX

Number 13

Equipment Standard

Mandatory Compliance

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Back-up Alarm Requirements

For Vehicles Owned or Operated by CAL FIRE

California Code of Regulations - Title 8 requires that when a vehicle is equipped with an automatic back-up alarm, the alarm must sound immediately upon backing. That means the alarm must sound either prior to the start of the back up or simultaneously with the start of the back up.

Wheel-mounted or driveline-mounted bell type back-up alarms are no longer approved for use on CAL FIRE or local government equipment operated by CAL FIRE. Electronic back-up warning devices comply with CAL-OSHA requirements and is the department's minimum standard. Electronic warning devices begin to sound as soon as the vehicle is put into reverse. This gives the additional advantage of warning of the drivers' intent to back up giving personnel on the ground additional time to move out of the way.

All alarms must turn on automatically when the shift lever is placed in the reverse position -- no exceptions.

Back-up alarms are required on all CAL FIRE highway vehicles beginning with 9,000 lbs GVWR and larger and **all** off-road self-propelled equipment, e.g., forklifts, graders, dozers, loaders, and other types of equipment including highway vehicles under one ton, where operator's vision is obstructed to the rear of the vehicle or where backward movement would constitute a hazard to employees working in the area on foot. The alarm must be inspected for satisfactory operation during each "B" service as described in the 6805.

BACK-UP ALARMS – HIGHWAY VEHICLES

Non-Fire Apparatus Shall meet or exceed [Society of Automotive Engineers, \(SAE\) standard J994](#) Type C. reference: "ECCO" brand, model 510 97 dB(A) or equal

Fire Apparatus Shall meet or exceed [Society of Automotive Engineers, \(SAE\) standard J994](#) and NFPA 1901 section 13.12. The alarm shall automatically adjust its sound output,

maintaining a minimum of 5 dB(A) above noise level, up to maximum 112 dB(A) reference: "ECCO" brand model SA917 or equal.

Note: The term "Fire apparatus" includes; fire engines, dozer transports, emergency crew transports, helitenders, dozer service units, and mobile command center vehicles.

BACK-UP ALARMS – OFF ROAD EQUIPMENT

Off road equipment shall be equipped with a warning device meeting the following [CAL/OSHA Construction Safety Order, Section 1592](#) and [SAE J994](#)

- (b) Those vehicles not subject to 1592(a) and operating in areas where their backward movement would constitute a hazard to employees working in the area on foot, and where the operator's vision is obstructed to the rear of the vehicle shall be equipped with an effective device or method to safeguard employees such as:
- 1) An automatic back-up audible alarm which would sound immediately on backing, or
 - 2) Where feasible, a visual warning device visible from the rear of the vehicle such as a rotating or oscillating-type light which would activate immediately on backing, or
 - 3) An automatic braking device at the rear of the vehicle that will apply the service brake immediately on contact with any obstruction to the rear, or
 - 4) In lieu of 1, 2, or 3 above, administrative controls shall be established such as:
 - a) a spotter or signalman in clear view of the operator who shall direct the backing operation, or
 - b) other procedures which will require the operator to dismount and circle the vehicle immediately prior to starting a back-up operation, or
 - c) Prohibiting all foot traffic in the work area.

Electronic back-up alarms shall meet or exceed SAE J994 Type B 107 dB(A) and shall be installed on all off-road equipment including but not limited to: bulldozers used in fire control, dump trucks, insect control vehicles and stakesides. Reference: "ECCO" brand model 630 or "ECCO" brand model SA917 or equal.

Reference Procedures Handbook 6786 for vehicle backing policy and procedures including hand signals exhibits. <http://cdfweb/Pubs/Issuance/6700/6786.pdf>

(see FIX-N-FAX INDEX)