

# INFORMATION BULLETIN



May 30, 2003

## **CARPENTER SCHOOL BUSES (POTENTIAL CRACKED, BROKEN OR MISSING WELDS)**

The California Highway Patrol (CHP) has received information from the School Bus Information Council (SBIC) concerning a potential safety defect regarding Carpenter Manufacturing, Inc. (Carpenter) school buses. Inspection of some Carpenter school buses built at its Mitchell, Indiana plant between 1986 and 1996 has revealed cracked, broken or missing welds in the roof structure.

This information was developed through a recent collision in Florida involving a 1991 Carpenter Type 1 (transit style) school bus which rolled over, causing the roof to collapse down to the seat level. Fortunately, there were no children aboard at the time of the collision. Subsequent inspection of the bus discovered failure of a large percentage of structural welds in the roof. Additionally, inspections of Carpenter school buses in various parts of the country have revealed cracked and broken welds in the roof structures. This problem is clearly not confined to Florida, where it was first discovered.

The National Highway Traffic Safety Administration (NHTSA) is investigating the collision and discovery of failed welds in other Carpenter school buses. Normally, if a safety defect is determined, the manufacturer is required to conduct a recall to remedy the situation at no cost to the owner. However, Carpenter is no longer in business, and owners of the affected buses will be responsible for any repairs deemed necessary to correct the problem. Efforts by SBIC and NHTSA are underway to develop guidelines or best practices which owners of affected school buses can use to repair any buses that are found to have cracked, broken or missing welds in the roof structure.

Federal Motor Vehicle Safety Standard (FMVSS) No. 220, *School Bus Rollover Protection*, specifies minimum strength requirements for school bus roofs to reduce the likelihood of a roof collapse in a rollover collision, and requires that emergency exits (except roof exits) be operable after the roof is subjected to a force equal to 1.5 times the unloaded weight of the school bus.

Each Carpenter school bus includes a 6-digit body number that appears on the Carpenter body data plate. If the 6-digit body number starts with the number 4, the bus was built in the Richmond, Indiana, plant and utilizes full-length body bows. This design does not need to be inspected. However, if the 6-digit body number that appears on the Carpenter body data plate starts with any number other than the number 4, the bus was manufactured in Mitchell, Indiana, and should be inspected for cracked, broken or missing welds in the roof structure.

The welds in question are located at the junction of the vertical side posts (between the windows) and the horizontal structural member (the "Carlin" rail) above the windows. Figure 1 illustrates the general location of potential defects (note: this figure shows damage done to the bus in Florida). Figure 2 illustrates the location of the panel that should be removed for inspection of possible cracked or broken welds. Both the left and right side panels should be removed.



Fig. 1. General Location of Potential Defect (shown on Florida bus)



Fig. 2. Location of Interior Roof Panel Removed for Inspection Purposes

Figure 3 shows the locations of the components which include the Roof Bow, Roof Carlin Rail, Side Post and Side Wall Carlin Rail which are welded together to form the roof structure.

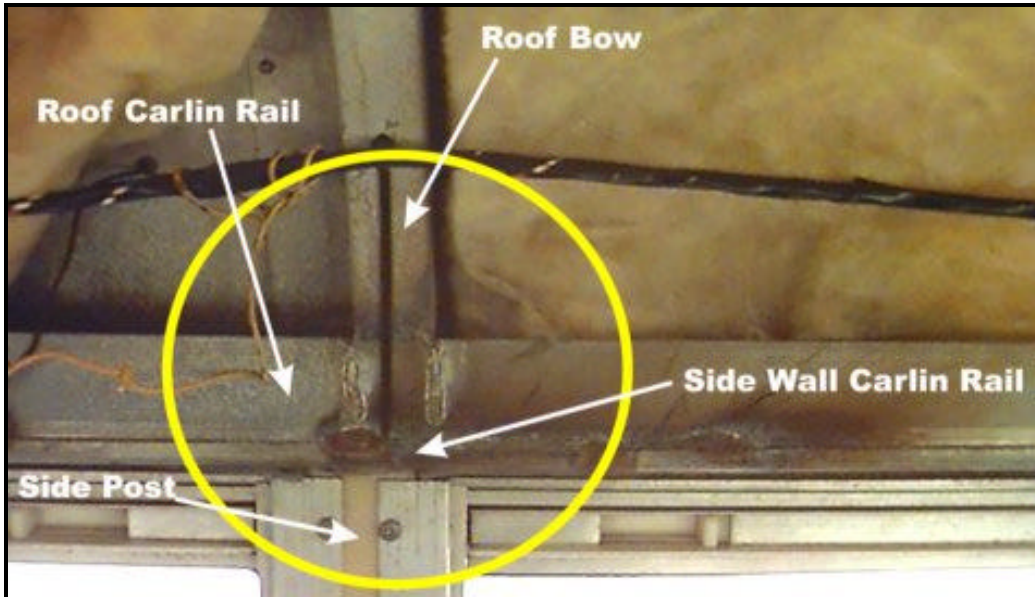


Fig. 3. Locations of Roof and Window Components which are Welded Together

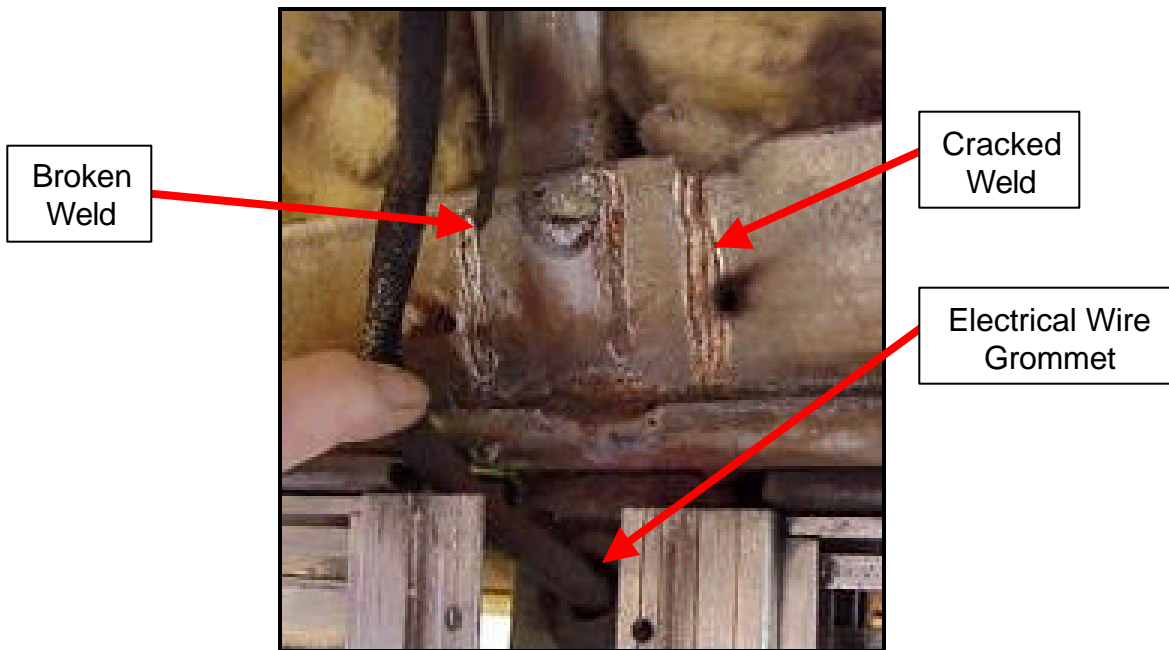


Fig. 4. Location of Broken Welds Approx. 1/2-inch Above Wire Grommet

Figure 5 illustrates the location of welds between Roof Bow and Roof Carlin Rail and the location of welds and Stitch Welds between Side Post and Roof Carlin Rail where inspection personnel should look for cracked, broken or missing welds. Figure 6 shows the location of the Post-to-Floor Joint where the Post is seam-welded to the Floor Section.

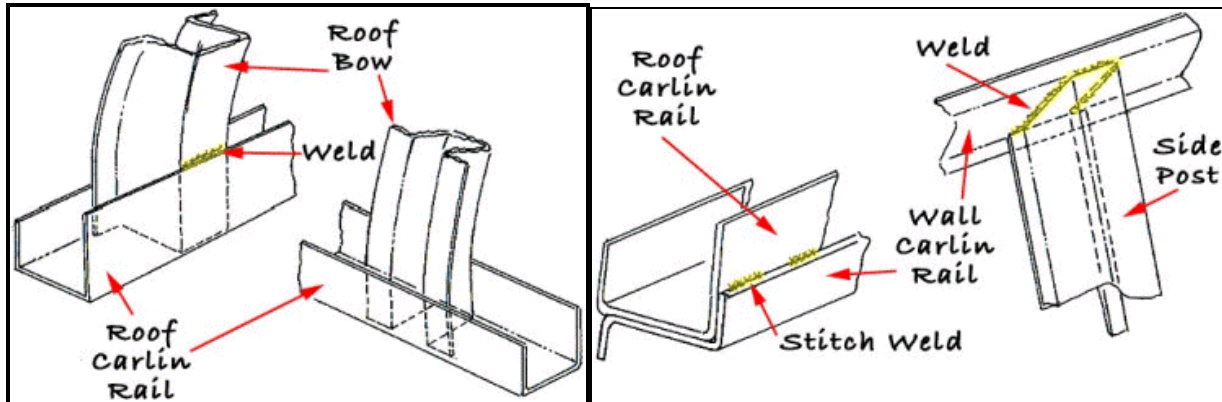


Fig. 5. Location of Weld between Roof Bow and Roof Carlin Rail and Location of Weld and Stitch Weld between Side Post and Roof Carlin Rail

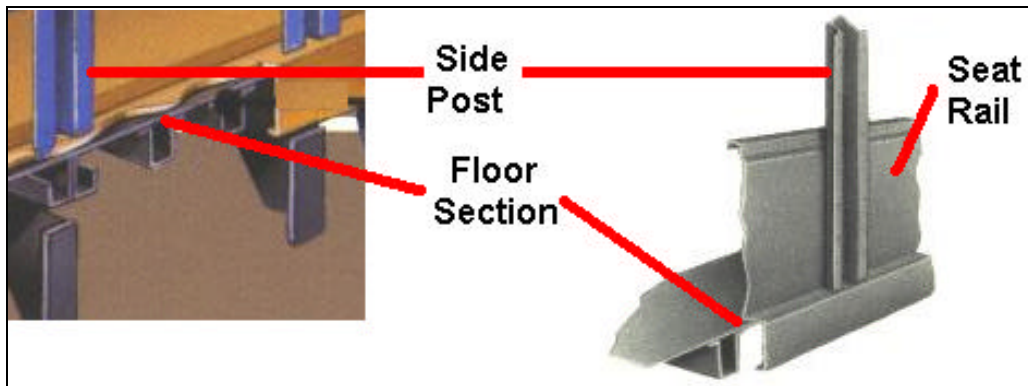


Fig. 6. Location of Weld between Post and Floor Section

Inspection reports have been received from various states and school districts around the country. Some reports reveal significant numbers of Carpenter school buses with cracked, broken or missing welds, while other reports reveal few, if any, cracked, broken or missing welds. Additionally, the CHP has received information some Carpenter school buses have cracked or broken welds located at the bottom of the Post Rail where it joins the Floor Section of the bus. At this time, there does not appear to be any pattern to explain the different results.

**The CHP recommends that carriers operating Carpenter school buses manufactured in the Mitchell, IN plant during the years of 1986 to 1996 immediately inspect each vehicle for defects in the areas previously mentioned in this Information Bulletin.**

The CHP does not recommend any specific repairs to correct deficiencies for any vehicle; nor do we believe any recommendations or certifications can be obtained from the manufacturer, or its successors.

Since Carpenter Manufacturing is no longer in business, and no Carpenter dealer exists, owners of affected vehicles may wish to contact A-Z Bus Sales Inc., a former dealer for Carpenter Manufacturing Inc., for information and assistance. Contacts for A-Z Bus Sales, Inc. in California are:

- Sacramento area: Mr. Mike Hargrove or Mr. Peter Tuckerman 1-800-458-6363 x130.
- Colton area: Rick Eckert at 1-800-843-1287 x111.
- Orange County area: Mr. Bob Fry at 1-800-764-8222 x232.

Any questions regarding this Information Bulletin should be directed to Mike Ellis, Commercial Vehicle Section at (916) 445-1865.

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