UN-Safety Belt: An IMMI H2 Buckle Case Study

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This article will briefly discuss a significant case which my firm recently handled involving a defective seatbelt buckle design that is utilized in numerous heavy trucks in the United States. The defect is such that the buckle may sound and feel as though it were properly latched. However, an internal design defect prevents the buckle from properly latching and the wearer may not notice until it is too late.

Although the seatbelt buckle manufacturer began selling redesigned buckles in 2004, heavy trucks built from 2002 to 2004 may have used the older defective design. The case facts and discovery information from our case is set forth below, but the implications of this defect are clear: you cannot assume that an ejected driver of a heavy truck was unbelted.

On October 12, 2005, our client "Joe" was employed by a forest products company as a truck driver. His job was to transport wood chips from a lumber mill in Chapman, Alabama to a paper mill in Prattville, Alabama. He typically worked a 12 hour shift beginning around 3:00 am. During his 12 hour shift he would transport three loads of chips from Chapman to Prattville.

Around 6:30 am on the morning of October 12, 2005, Joe was driving a 2004 forest products truck and was pulling a trailer loaded with wood chips about five miles north of the lumber mill. At the same time and place, a 1990 Nissan pickup truck was traveling south along the same two lane highway. Based on extensive eyewitness testimony from the drivers of vehicles following the two trucks, as well as physical evidence and accident reconstruction, both vehicles were traveling below the speed limit of 55 miles per hour. For an unknown reason, the Nissan crossed the centerline of the Highway into Joe's northbound lane.

It is clear that Joe steered his vehicle off the side of the road in an attempt to avoid the collision, but the vehicles collided at the edge of the northbound lane. The Nissan truck was effectively destroyed on impact and its driver was killed instantly. However, due to the large mass and momentum of the much larger wood chip truck, Joe was unhurt in the collision

with the Nissan and continued beyond the impact. It is clear from eyewitness testimony, physical evidence, and accident reconstruction that Joe was attempting to steer his truck to a stop after the impact. However, as he steered his truck back into the northbound lane the weight of his fully loaded trailer caused the truck and trailer to roll onto its passenger side and slide to rest in the roadway. Although he was wearing his seatbelt, Joe was ejected through the windshield of his truck onto the pavement and killed.

When the subject line of heavy trucks was introduced, they were equipped with a seatbelt system manufactured by a leading restraint manufacturer—Autoliv, Inc. During the early years of the truck line, between 2000 and 2001, the manufacturer had no complaints regarding the operation of the Autoliv seatbelt buckles in its trucks. However, in 2002 the truck manufacturer switched from Autoliv to a smaller and relatively unknown seatbelt manufacturer, IMMI, as the supplier of seatbelts for its trucks. The switch became effective in mid-2002, and almost immediately the truck manufacturer began to report complaints from drivers that the IMMI seatbelt buckles would not latch properly and



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would not stay latched while in operation. We discovered the complaints as part of IMMI's warranty documentation program. The subject IMMI buckle is known as the H2.

In the summer of 2003 (about a year after the H2 was introduced), two IMMI engineers discussed the failure-tolatch problem and undertook to redesign

the H2 buckle to prevent such a failure. As part of their work, the two found a Failure Modes and Effects (FMEA) study created when the H2 buckle was developed. The FMEA identified, in two separate places, a potential failure mode of the H2 buckle that would prevent the buckle from latching. The FMEA assigned a severity value of "10" to the failure (apparently the highest value on IMMI's scale), and attributed the defect to "improper design." Although the failure was identified and documented in the FMEA in 2000—two years before the truck manufacturer began using the H2 buckle—the problem was not corrected before the H2 buckle went into production.

In only two weeks after they began trying to "fix" the H2, the IMMI engineers redesigned the plastic buckle button and completely eliminated the defect.

Immediately thereafter, IMMI produced samples of the new design and tested them to ensure proper operation and that the defect was cured. By the end of 2003, the redesign and testing was complete. Although the defect was discovered, documented, researched, evaluated, and corrected by the end of 2003, the truck

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assigned to Joe was built in January 2004 using an older defective buckle. In fact, Joe's truck was purchased by the forest products company in February 2004 as part of a fleet of 18 identical trucks, and the entire fleet of trucks was built using the older defective buckles.

During the preparation of this case we documented the failure of Joe's seatbelt through photo, video, and x-rays, we deposed drivers who nearly unanimously confirmed that the buckles in the other trucks suffered the same defect, and the parties inspected and disassembled the

buckles to confirm that they were all of the older design. During the preparation of the case, the IMMI corporate Risk Manager drove from Indiana to Alabama to remove all of the buckles in the fleet and replace them with redesigned H2 buckles. All parties agreed that the older H2 buckle was redesigned to prevent the failure-to-latch problem and that the corrective action was taken by the end of 2003.

Our case against the trucking manufacturer was resolved after mediation and the claims against IMMI were settled as we were striking a jury. Because we were able to uncover the defect in the H2 buckle, we

were able to achieve a satisfactory result for the family. Further, because our trial judge ordered IMMI's documents unsealed, we can publish this information and make this defect known to the public. Many of the defective buckles are potentially still on the road in various heavy trucks; you should never assume that an ejected driver of a heavy truck was unbelted.

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