

## ODI RESUME

INVESTIGATION: EA95-013  
 SUBJECT : Air Bag Wiring Failure  
 PROMPTED BY : PE94-088

DATE OPENED: 31-MAR-95  
 DATE CLOSED: 15-JUL-96

PRINCIPAL ENGINEER: Michael Lee  
 MANUFACTURER : BMW  
 MODELS/MODEL YEARS: 1991-93 5, 7, and 8-series; and  
 1992-93 3-series  
 VEHICLE POPULATION: 163,721

SYNOPSIS: Owner complaints and dealer reports indicate that the vehicle's air bag indicator light illuminated. In most cases, this was caused by a fatigue failure of a locking tab leading to breakage of an external wiring of the air bag contact ring (a/k/a clock spring). The contact ring is attached to the steering wheel and steering column and allows rotary motion of the wheel while maintaining electrical connection between the air bag inflator and a steering column wiring connector. The sole function of the locking tab is to center the contact ring to the steering wheel. A broken locking tab which becomes loose and seized inside the steering wheel assembly (results in clicking sound when turning the steering wheel and slight increase in steering effort), causes the entire contact ring to turn together, thereby breaking the steering column-side contact ring wiring/connector. The final result is a nonfunctional driver-side air bag (i.e., non-deployment potential due to open circuit) and/or potential for inadvertent deployment of the air bag due to shorting of a broken contact ring wiring.

### FAILURE REPORT SUMMARY

BASIS:	ODI	MANUFACTURER	TOTAL
COMPLAINTS:	2	63	65*
ACCIDENTS:	0	0	0
INJ ACCID:	0	0	0
# INJURIES:	0	2	2**
FAT ACCID:	0	0	0
# FATALS:	0	0	0

\* Reports of air bag indicator light illuminating.

\*\* Injuries sustained from inadvertent air bag deployment.

ACTION: Close this Engineering Analysis (Safety Recall 96V-110).

ENGINEER <u>Michael Lee</u> DATE <u>7/15/96</u>	BRCH CHF <u>Thomas Lopez</u> DATE <u>7/15/96</u>	OFC DIR <u>[Signature]</u> DATE <u>7/15/96</u>
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REASON FOR CLOSING: See page 2.

*JUL 15 1996*

In its letter dated June 24, 1996, BMW states that approximately 75,000 subject vehicles (MY 1991 5, 7, and 8-series and early MY 1992 3, 5, 7, and 8-series) will be recalled (NHTSA Recall No. 96V-110). These vehicles were installed with locking tabs prone to fatigue failure. In March 1992, BMW strengthened the locking tab by changing its material and adding a reinforcement rib. The recall population of 75,000 vehicles includes those subject vehicles built before the changes in March 1992. To date, there have been no broken locking tab complaints for vehicles built after March 1992. A small percentage of the 65 complaints did not indicate a locking tab failure. At this time, no defect or defect trend has been identified by BMW or ODI concerning these relatively few complaints.

The action taken by BMW is sufficient to resolve the issues raised by this investigation. The closing of this investigation does not constitute a finding by NHTSA that no safety-related defect exists. The agency reserves the right to take future action if warranted by the circumstances.

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