Automobile Insurance Losses Collision Coverage Experience of GM Air Bag Equipped Cars 1974, 1975, 1976 Models

May 1978

Insurance Institute for Highway Safety Washington, D.C. 20037

This report presents the results of an investigation of the collision coverage loss experience of General Motors (GM) air bag-equipped vehicles. The purpose was to investigate the information in insurance claim files to determine whether there was evidence to suggest that previously unknown air bag deployment crashes had occurred or that frontal crashes of sufficient severity had occurred in which the air bags should have deployed but did not.

This report is based on the collision coverage experience of seven insurers—Allstate, Kemper, Liberty Mutual, Nationwide, Prudential, State Farm and Travelers.

GM provided the Highway Loss Data Institute (HLDI) with 10,281

Vehicle Identification Numbers (VINs) for 1974 through 1976 passenger cars that were equipped with air bags. Records for 2,080 (approximately 20 percent of the total) of these vehicles were in the HLDI collision coverage data files. Since significant numbers of GM air bag-equipped cars were sold to fleets and the HLDI data files do not include information on fleet policies, the 20 percent representation in the HLDI files is about what would be expected, even though the seven insurers whose data were used represent more than 20 percent of the insured passenger cars in the U.S.

This report summarizes the loss experience of the 1974 models in the HLDI files from the time of their initial sales until the end of September 1976, and for the 1975 and 1976 models in the files until the end of September, 1977.

The air bag cars in the HLDI files were involved in a total of 317 collision coverage insurance claims. Table 1 summarizes these results by model year.

 $\underline{ \mbox{Table 1}}$ Numbers of Air Bag Equipped Cars in HLDI Files

	Model Year			Total	
	1974	1975	1976		
Total no. of VINs for air bag equipped cars supplied by GM	5630	4006	645	10281	
No. in HLDI files	1148	846	86	2080	
% in HLDI files	20%	21%	13%	20%	
Total no. of collision coverage claims	165	143	9	317	

Table 2 summarizes the reported crashes which resulted in the 317 collision coverage claims for the air bag-equipped vehicles. In order to provide this information, the detailed material for each of the claims in the HLDI files, and summarized in Table 1, was gathered by the seven participating insurers and searched manually by Insurance Institute for Highway Safety staff. Of the 317 claims, 162 (51 percent) reportedly involved, in each case, a crash between the air bag-equipped car and at least one other vehicle, 42 (13 percent) of the claims were reported as single vehicle crashes, and 69 (22 percent) of the claims were reported to be hit-and-run impacts in which another vehicle hit a parked air bagequipped car. For 44 (14 percent) of the claims, the claim files could not be located or there was insufficient information in the files to determine the type of crash involved. When interpreting insurance claim information of this type, it should be recognized that it is primarily based on self reports from the crash-involved drivers and that, consequently, it is not likely to be as reliable as data obtained from more independent crash investigations, such as those conducted under the legal authority of the police, or by the National Highway Traffic Safety Administration (NHTSA).

Table 3 summarizes the principal damage locations for the 204 collision coverage claims remaining after excluding the claims involving hitand run crashes into parked air bag-equipped cars and the claims that could not be located or for which there was insufficient information. Of these claims, 97 (48 percent) involved predominantly front end damage to the

<u>Table 2</u>

<u>Summary of Collision Coverage Claims for Air Bag Equipped Cars</u>

	Model Year			Total	
	1974	1975	1976	No.	%
No. claims involving crashes of 2 or more vehicles	80	75	7	162	51%
No. claims involving crashes of a single vehicle	26	15	1	42	13%
No. claims involving hit and run damage to a parked car	37	31	1	69 .	22%
No. claims with insufficient or no information	22	22	0	44	14%
Total no. of claims	165	143	9 .	317	100%

Summary of Principal Damage Locations for Collision Coverage

Claims for Air Bag Equipped Cars*

	Model Year			Total	
	1974	1975	1976	No.	%
No. with front-end damage	50	43	4	97	48%
No. with side damage	19	11	1	31	15%
No. with rear-end damage	. 25	28	3	56	27%
No. with undercarriage damage	3	1	0	4	2%
No. with multiple areas of damage	9	7	0	16	8%
Total no. of claims	106	90	. 8	204	100%

^{*} Excluding hit and run damage to parked cars, claims for which files could not be located and those in which there was insufficient information.

air bag-equipped cars, 31 (15 percent) side damage, 56 (27 percent) rear end damage, 4 (2 percent) damage to the undercarriage, and 16 (8 percent) multiple areas of damage.

Table 4 summarizes the repair cost estimates for the 97 collision coverage claims in which the principal damage area was the front end of the vehicle. Of these claims, 44 (45 percent) had less than \$500 damage, 24 (25 percent) had between \$500 and \$999 damage and 23 (24 percent) of these claims had damage costing \$1,000 or more to repair. This distribution of damage amounts is entirely consistent with the claims experience of comparable non-air bag-equipped cars, the low speed crashes of which commonly produce damage in excess of \$1,000. For 6 (6 percent) of the claims the amount of damage could not be determined. It was not possible from the available information in most cases to reliably determine whether or not the vehicle was towed from the scene of the crash.

Nine crashes in which the forces were sufficient to deploy the air bags were identified among the 97 claims involving predominantly front end damage. Five of these deployments were in 1974 models, three were in 1975 models, and one in a 1976 model. All of these had been previously reported to NHTSA and were in its air bag deployment log. For two of these crashes the amount of damage to the automobile was not available in the claim files examined. The other seven had damage amounts ranging from \$2,343 to \$5,845.

Two crashes in which the crash forces were not sufficient to deploy the air bags that had also been reported to NHTSA were also identified. These had estimated repair costs of \$1,119 and \$3,207. Of the remaining

Summary of Collision Coverage Claims for Air Bag

Equipped Cars with Front End Damage*

	Model Year			Total	
	1974	1975	1976	No.	%
No. of claims with damage less than \$500	24	19	1	44	45%
No. of claims with damage greater than or equal to \$500 and less than \$1,000	13	10	1	24	25%
No. claims with damage greater than or equal to \$1,000	10	11	2	23	24%
No. claims with unknown damage	3	. 3	0	6	6%
Total no. of claims	50	43	4	97	100%

^{*} Excluding hit and run damage to parked cars, claims for which files could not be located and those in which there was insufficient information.

10 claims with damage of \$1,000 or more each, only four had more than \$2,000 worth of damage (\$2,161 and \$3,441 for two 1974 models and \$2,700 and \$2,561 for 1975 models). For the highest of these four claims, although the estimated repair cost was more than \$3,000, a photograph of the damaged car showed that the actual visible deformation was not major, suggesting that the crash forces were below the air bag deployment threshold level. For the other two claims, there was insufficient information in the files to even roughly estimate the crash severity. In none of these four crashes with damages over \$2,000 were any occupant injuries reported.

The results of this investigation indicate that NHTSA surveillance for air bag deployment crashes is very effective. In the 204 reported moving crashes involving air bag-equipped cars, nine crashes in which the crash forces were sufficient to deploy the air bags were found and all of them had been previously identified by NHTSA.