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# CENTER FOR AUTO SAFETY

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April 7, 2014

The Honorable David J. Friedman  
Acting Administrator  
National Highway Traffic Safety Administration (NHTSA)  
1200 New Jersey Avenue SE, West Building  
Washington, D.C. 20590

Dear Administrator Friedman:

On about November 15, 2013, Don Friedman of Xprts LLC filed a defect petition (DP) with NHTSA on a defective algorithm in 2003-10 General Motors that can suppress airbag deployment by erroneously classifying the occupant weight as being too low to deploy the airbag. The Center for Auto Safety (CAS) is greatly concerned that there is no listing of a Defect Petition on the Agency's Website. Under Section 124(d) of the National Traffic and Motor Vehicle Safety Act (recodified at 49 USC § 30162(d), hereinafter Safety Act), NHTSA must grant or deny the petition within 120 days. Well over 120 days have passed since NHTSA received the petition so the Agency is in continuing violation of the Safety Act. (Attachment A shows no DP listed on NHTSA's investigation page.)

Mr. Friedman is not your average petitioner. He designed the guidance system for the Sidewinder missile, the Lunar Rover, and was the chief contractor for NHTSA's Minicars Safety Research Vehicle which provided 50-mph barrier equivalent crash protection. Mr Friedman has likely directed more dynamic vehicle crash tests than anyone outside the auto industry. In addition, he has been involved in evaluation of many hundreds of real world crashes. Like Mark Hood who uncovered the defective GM ignition switch in the Chevrolet Cobalt and its role in airbag non-deployment before NHTSA did, Mr. Friedman is an independent engineer who appears to have discovered a defective algorithm in GM advanced airbag vehicles before NHTSA did.<sup>1</sup>

The defect in the algorithm is fairly simple as discovered by Mr. Friedman. "The algorithm for the weight of the passenger used the instantaneous weight to determine whether to inhibit the airbag deployment. [A vehicle] lift and bounce [can] momentarily reduce[d] the weight of the passenger to that of a small adult. Using a weight averaged over a few tens of seconds would have avoided suppressing the airbag and the resulting serious injury and fatality. Since the control module is field reprogrammable a simple recall and modifying a few lines of code can avoid repeat occurrences."

This is a design defect in every GM vehicle with the flawed algorithm. Even though the defect cases litigated by NHTSA under the Safety Act in the 1970's (see [NHTSA Chief Counsel Frank Berndt memo](#)) do not require a so-called "defect trend" as contrived by NHTSA today, existence of a design defect means every vehicle has the flaw.

In its analysis of airbags failing to deploy in crashes, NHTSA pointed to FARS as a good starting point to find crashes which may point to a defect. While FARS cannot pinpoint the precise failure mode in a crash such as a flawed algorithm, FARS can pinpoint cases to examine to find such failure

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<sup>1</sup> Under 49 CFR 571.208 S14, advanced airbags were required beginning September 1, 2003, but could have been introduced as early as June 12, 2000 for advanced credit in meeting the advanced airbag phase-in regulation.

modes.<sup>2</sup> From Calendar Year 2000 when GM could have introduced advanced airbag vehicles with the flawed algorithm just through 2010, there were 143 frontal impact fatalities in model year 2000 to 2010 Chevrolet Impalas where the airbags failed to deploy with 98 of the fatalities being occupants who were lap/shoulder belted. (Attachment B.) We call on NHTSA to examine each of the fatal non-deployment crashes to determine whether the airbag should have deployed and why it didn't.

The Center is deeply troubled that NHTSA once again may have missed an advanced airbag like it did with the Cobalt. The Center is even more troubled that once again NHTSA has kept whatever it is doing secret behind closed doors even though there is a specific legal requirement for NHTSA to make its activities public.

The Center requests NHTSA to immediately grant or deny the defect petition filed by Mr. Friedman and Xprts as required by the Safety Act.

Sincerely,

A handwritten signature in black ink that reads "Clarence Ditlow". The signature is written in a cursive, flowing style.


Clarence Ditlow  
Executive Director

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<sup>2</sup> NHTSA, "[Fatalities in Frontal Crashes without Airbag Deployment](#)," p.5.

## Search Safety Issues: Recalls, Investigations & Complaints

**NHTSA's databases** provide an in-depth record of Safety Issues for Vehicles, Child Restraints, Tires, and Equipment. Safety Issues include all safety recalls for your product as well as safety complaints other users have filed. You may also find any relevant service bulletins or NHTSA investigation documents. Click here to learn more about [investigations and safety recalls](#).

<b>Vehicles</b>	<b>Safety Issues by NHTSA ID</b>
<b>Child Restraints</b>	Select one or more areas to search, then enter up to 25 NHTSA IDs separated by comma, space or new line. 
<b>Tires</b>	<input type="checkbox"/> <b>Recalls</b> <input checked="" type="checkbox"/> <b>Investigations</b> <input type="checkbox"/> <b>Complaints</b> <input type="checkbox"/> <b>Service Bulletins</b>
<b>Equipment</b>	<input type="text" value="DP14001"/>
<b>Keyword (Complaints Only)</b>	<input type="text"/>
<b>ID Number</b>	<input type="text"/>
	<input type="button" value="GO"/>

 No Results Found.

Searched on 4/7/2014

<b>FARS data for Accident Years 2000-2010</b>						
<b>All Frontal Impact Fatalities for model years 2000-2010 Chevrolet Impala in which the airbag did not deploy</b>						
<b>Accident Year</b>	<b>Model Years</b>	<b>Frontal Impact Fatalities*</b>	<b>Lap and Shoulder Belted</b>	<b>Unbelted/Unknown</b>	<b>Total Fatalities Excluding Rollover</b>	<b>Vehicles</b>
2000	2000	1	1	0	2	2
2001	2000-2001	3	2	1	4	4
2002	2000-2002	7	6	1	11	11
2003	2000-2003	8	6	2	13	13
2004	2000-2004	13	9	4	22	13
2005	2000-2005	10	5	5	13	13
2006	2000-2006	13	10	3	22	20
2007	2000-2007	19	15	4	30	29
2008	2000-2008	22	14	8	41	39
2009	2000-2009	25	15	10	45	43
2010	2000-2010	22	15	7	53	48
<b>Total</b>	<b>2000-2010</b>	<b>143</b>	<b>98</b>	<b>45</b>	<b>256</b>	<b>235</b>

\*Frontal impact fatalities include front to front, front to side, front to rear, front to angle. It does NOT include "not a collision with motor vehicle", "rear to side", "sideswipe-opposite direction" and "sideswipe-same direction".

**Note: Data includes number of frontal impact fatalities, number of belted and unbelted occupants of those frontal impact fatalities, total fatalities excluding rollover and number of vehicles involved for model years 2000-2010 Chevrolet Impala in accident years 2000-2010. Frontal impact fatalities account for front seat left side (driver) and front seat right side (passenger) ONLY. Advanced airbags were implemented by 2003.**