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Vancouver, WA 98682

October 11, 2016

The Tracy Firm
4701 Bengal Street
Dallas, TX 75235

Attention: Mr. Todd Tracy, Esq.

Re: **Seebachan v. John Eagle et. al.**

Dear Mr. Tracy,

I have studied the crash safety performance of the 2010 Honda Fit in which Matthew and Marcia Seebachan were seriously injured. I inspected the vehicle on May 15, 2015 and again on July 28, 2015. I inspected the removed fuel tank on July 28, 2015. I have also reviewed the police report and photographs from the accident scene. Based on my inspection, research, education, training and experience as well as my own engineering judgment, I have formed opinions regarding the safety performance of the subject vehicle in this crash. Prior to stating my opinions, here is a brief outline of portions of my education, training and experience with crashworthiness and vehicle design analysis that applies to the particular disciplines required to effectively render an opinion in this case.

I. Background, Qualification and Methodology

A. I received a Bachelor's degree in Mechanical Engineering from General Motors' Institute (GMI, now Kettering University) in 1981. At GMI, I was enrolled in the "Automotive Option" curriculum.

B. My curriculum vita, which is Attachment I, shows my background in automotive design, design analysis and development engineering. I also have experience with the product creation process within large organizations, including Chrysler.

C. My opinions in the Seebachan matter are based on my background, experience, education and training in the field of Automotive Engineering, and on the application of recognized laws of physics and principles of mechanical and automotive engineering to the specific issues raised by the fuel fed fire accident that is the topic of this report.

D. While employed by a variety of automobile manufacturers, I have been responsible for and participated at various levels in the design, analysis, testing and development of almost every vehicle system, including roof, front, side and frame structures as well as fuel system design.

II. Design Experience

A. I was the Chief Engineer for the Ford GT, initially produced as a 2005 model. In this role, I was responsible for all aspects of the safety performance of the Ford GT. This included drafting and approving the plan for all safety testing (vehicle, sled and component testing). I also was the architect for the main structure of the vehicle and was responsible for all structural design, analysis, testing and development. I defined the design concept and the packaging strategy for the fuel tank. Primary consideration was given to the fuel tank placement and the protection of the fuel tank in crashes. This included the concept for the fuel hose and filler pipe routing. I also was responsible for the setting of targets for safety performance, including roof crush. The requirements that I set for the Ford GT roof included meeting FIA Appendix J, which results in a much stronger roof than the minimal FMVSS 216 requirement.

B. As the Executive Director of Engineering at McLaren Cars, Ltd., one of my responsibilities was the design, analysis, testing and development of a convertible version of the Mercedes-McLaren SLR. This was an innovative design process due to the fact that the main structure of the SLR was constructed from Carbon-Fibre material. Design targets were set by Mercedes that exceeded the minimum legislative requirements in all markets that the SLR was sold in, with special emphasis on the US market requirements.

C. As the Vice President of Manufacturing and Program Management at Aptera, I set the targets for roof strength. During my first design review I discovered that the enthusiastic but inexperienced design team had set the roof strength targets at US Federal minimum regulations for automobile. Since the Aptera was technically a motorcycle the minimum automotive standards far exceeded what would have been required. Due to the fact that customer perception of the Aptera was "car-like," automotive criteria was considered in all aspects. This lead to my changing the targets to achieve, in one aspect, target roof strength of 4 times the vehicle weight as tested in an FMVSS 216 test.

D. I was responsible for all vehicle design while working as the Chief Engineer at Saleen. Two designs were specifically for enhancing fuel system safety and reducing the possibility of fire. I designed an exhaust system with a particular feature to provide enhanced fuel system safety and integrity. This exhaust system had a feature that allowed it to disconnect from its mounting system in the event of a rear impact and drop down and below the fuel tank. This reduced the possibility that the exhaust system could intrude on an exposed area of the fuel tank. I also designed and implemented a feature to prevent and underhood fuel hose from being damaged by a hot EGR tube.

E. I have over 35 years experience, training and education as an automotive engineer. Most of this experience has been in the design, development and analysis of many types of vehicles. I have worked for all of the major US automotive manufacturers; Chrysler, General Motors and Ford. In addition I have worked for numerous small and start up automotive manufacturers.

III. Development and Testing Experience

A. While employed at Minicars, I conducted many different types of full vehicle crash tests, sled tests and component tests. These tests included a wide variety of subjects ranging from

highway crash attenuators, side impacts with two moving vehicles, sled tests to study steering columns and aircraft seats.

B. While employed at McLaren, I was responsible the overall crash test program for the Mercedes-McLaren SLR convertible and another vehicle. I was also responsible for developing significant computer simulation analysis techniques that were useful in the development of the Mercedes-McLaren SLR convertible. The analysis was used for both roof crush and crash testing simulation. The analysis was validated by component and vehicle tests. The Mercedes-McLaren SLR convertible included "advanced" airbags for the FMVSS 208 standard revised for 2008 model year vehicles. McLaren constructed an FMVSS roof crush test fixture and ran many tests, which I was able to review.

C. While employed at Aptera, I set the requirements for roof crush at 4 times vehicle weight, which is well above the 1.5 times that was required for FMVSS 216 at that time. Aptera had already constructed an "in-house" FMVSS 216 test fixture. I was able to review many tests run on Aptera prototypes.

D. During my assignment as the vehicle development engineer for the Dodge Viper I was involved in the development of improvements to resolve 3 different issues that related to fires.

E. I investigated an underhood fire occurrence while I was working as a vehicle development engineer for Chrysler at the Chrysler/Shelby Performance Center.

F. I participated in an investigation of an underhood fire situation while I was employed as the Executive Director of Engineering at McLaren Automotive Ltd. This investigation leads to a voluntary product recall for an alternator electrical issue. I was also responsible for engineers that investigated fuel leaks that occurred on production vehicles. These issues were traced to quality control at a supplier and resulted in corrective action at that supplier.

G. I investigated numerous fire issues while I was the Chief Engineer at Saleen Inc. The resolution of these investigations resulted in my ordering 2 voluntary product recalls.

IV. Assignment

A. I was asked to perform an analysis of the accident in which Matthew and Marcia Seebachan, driver and passenger of a 2010 Honda Fit, were seriously injured.

B. I began this analysis with a review of the available file material and continued with an inspection of the subject vehicle to develop a theory as to the cause of the serious injuries to Matthew and Marcia Seebachan using crashworthiness principles.

C. To test the theory, I followed a scientific method to perform this analysis. It included the following engineering steps:

1. Detailed macroscopic study of the available physical evidence, and a review of all available documents related to the accident in question.
2. A review of published research material regarding design.
3. An examination of documents relating to other similar incidents and claims.
4. A review of technical drawings.
5. A review of testing.
6. A review of documents produced in this case by Honda.

7. A review of any other documents produced by other manufacturers in similar incidences.
8. Propose alternative designs.

V. General Crashworthiness

A. Crashworthiness is the science of minimizing the risk of serious injury and fatality in motor vehicle collisions through the use of safety systems. There are five basic crashworthiness principles:

1. Maintain occupant survival space.
2. Manage the collision energy.
3. Restrain the occupant.
4. Prevent ejection.
5. Prevent post-collision fires.

B. The first four principles have their genesis in corresponding techniques of product packaging for shipment. The typical television, for example, is packed in a heavy corrugated cardboard box, which is held closed with adhesives and staples, and molded Styrofoam surrounds the TV. Therefore, the cardboard box prevents ejection, maintains survival space and manages impact energy. The Styrofoam provides restraint and padding.

C. One of the pioneers in crash safety, Hugh de Haven, was instrumental in applying these principles to light aircraft and, later, automobiles. Two of these principles form the basis of Mercedes Benz' famous patent (featured in their print and TV advertisements) which identifies a strong passenger "safety cell" to maintain survival space and crushable front and rear structures to manage the collision energy.

D. John Paul Stapp would later evaluate crashworthiness principles by conducting tests with volunteers. Colonel Stapp undertook this effort, as he was tired of losing soldiers in the field who survived the accident but died of fire related injuries. Much of the crashworthiness improvements we see on vehicles today were developed for the aerospace and racing industry and that technology then translates into production vehicles.

E. Crashworthiness safety systems do not prevent accidents from happening. Rather, crashworthiness safety principles prevent and minimize injuries following an accident. Hence, there is a distinction between the cause of an accident versus the cause of injuries. A classic example of this distinction is the Titanic.

F. It can be said that crashworthiness principles work together like links in a chain. If one safety system fails, this can cause the other safety systems to fail or be ineffective.

VI. Investigation, Materials Reviewed

A. In performing my analysis, I began with an examination of the documents and testimonial evidence that was available regarding this particular accident. The evidence and testimony included:

1. Texas Peace Officer Crash Report and other Police file material.

2. The accident vehicle.
3. Medical records.
4. Various legal documents. (Petitions, Motions and Responses)
5. Photographs supplied by the client.
6. Materials produced to date
7. Crash testing of the subject platform
8. Injury biomechanics, occupant protection and crashworthiness opinions of Dr. Mariusz Ziejewski, Ph.D.

B. I also performed an inspection of the subject accident vehicle.

C. I have reviewed published literature and patents appropriate to this case.

VII. Accident Background

A. According to the Texas Peace Officer Crash Report:

1. The accident occurred on December 21, 2013 at 10:28 am on US Highway 281 in Burnet County, Texas. The speed limit is 75 mph on this highway. The accident occurred near mile marker 418.

2. The subject vehicle was a 2010 Honda Fit. Vehicle Identification Number: JHMGE8H43AC006993. The Honda Fit was struck by a 2010 Toyota Tundra, Vehicle Identification Number: 5TFHW5F17AX130171.

3. Matthew Seebachan was the driver of the Honda Fit and Jack Mann Jordan was the driver of the Toyota Tundra.

4. Occupant position and safety restraint usage for the Honda Fit was indicated in the police report as follows:

    a) Seat Position 1 – Matthew Seebachan, age 33, restraint used.
    b) Seat position 3 – Marcia Seebachan, Age 29, restraint used.

5. Police narrative of the accident was as follows: "*Unit #1 was travelling Northbound on US 281 in the inside Northbound lane. Unit 2 was traveling Southbound on US 281 in the Southbound outside lane. Unit 1 began to hydroplane due to the driver's unsafe speed (rain/wet road). Unit 1 rotated counterclockwise and crossed into the Southbound lanes of US 281. While in a right side skid Unit 1 struck Unit 2's front bumper area with Unit 1's right front quarter area. At impact Unit 1 rotated counter clockwise striking Unit 2's left rear quarter area with Unit 1's right rear quarter area. Unit 2 traveled backwards from the impact with Unit 1 and came to rest facing Southbound in the west side ditch of US 281. Unit 1 continued its counter clockwise rotation, rotating 360 degrees before coming to rest facing Northbound in the Southbound bar ditch of US 281.*"

VIII. Vehicle Inspection

A. I inspected the Seebachan vehicle on May 13th, 2015 at Crash, Inc. in Dallas, Texas. My inspection resulted in the following findings:

1. Vehicle damage findings that were significant to my investigation were as follows:

    A. The front of the vehicle has significant crash damage.
    B. The interior of the vehicle was burned.
    C. The fuel tank was ruptured from the left side.
    D. The fire was most severe around the area of the ruptured tank.
    E. The roof was virtually separated from the vehicle at the cant rails.
    F. The cant rail on the left side was Z-buckled.

2. Seat belt usage physical evidence: The latch plates for both the driver and passenger are in place and melted to the buckle. There was loose webbing that showed signs of being cut. This leads me to the conclusion that the safety belts were worn and that rescue operations resulted in the webbing being cut to extricate both Matthew and Marcia Seebachan.

3. The damage to the vehicle structure of the Honda Fit significantly compromised the available survival space for both of the occupants.

C. The inspection lead to the following reasonable conclusions:

1. The Honda Fit was hit by another car.
2. The Honda Fit caught fire as a result of fuel escape from a damaged fuel tank.
3. Two front seat occupants were unable to egress the vehicle without assistance.
4. The failure of the roof compromised the vehicle structure.

IX. Analysis and Discussion

A. Defective Vehicle Repair by John Eagle Collision

1. According to an invoice dated 8/30/12, there was extensive body damage repair performed on the subject vehicle. It was apparently due to hail damage to the vehicle. The gross total of the repair cost was $8,561.65. The repair included replacement of the roof. The roof panel is referenced on both the State Farm estimate and the John Eagle Collision Center Invoice. These are shown below as Figure 1.

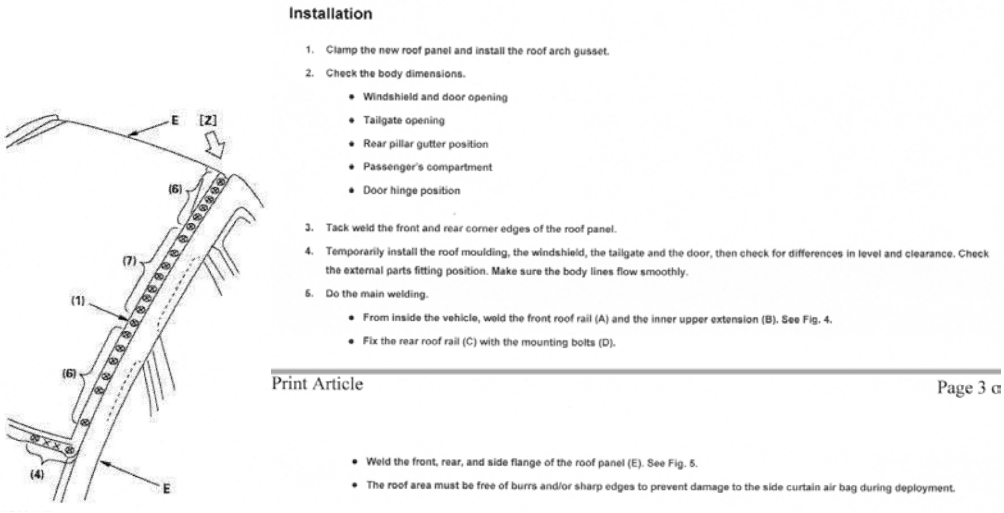
PARTS	QTY	FP-NUMBER	DESCRIPTION	UNIT PRICE	
JOB # 1	1	80050-TK6-H00	LABEL 0000000	1.73	1.73
JOB # 1	1	38205-TK6-A00	LABEL, FU 0000000	2.02	2.02
JOB # 1	1	60100-TK6-A92ZZ	HOOD, ENG 0000000	282.43	282.43
JOB # 1	1	72410-TF0-003	MOLDING, 0000000	31.07	31.07
JOB # 1	1	72450-TF0-003	MOLDING, 0000000	31.07	31.07
JOB # 1	1	72910-TF0-003	MOLDING, 0000000	27.97	27.97
JOB # 1	1	72950-TF0-003	MOLDING, 0000000	27.97	27.97
JOB # 1	1	62100-TK6-A00ZZ	PANEL, RO 0000000	451.95	451.95
JOB # 1	1	17277-RP3-A01	LABEL,INF 0000000	4.23	4.23
JOB # 1	1	74222-TK6-A00	COVER 0000000	9.87	9.87
JOB # 1	1	74212-TK6-A00	COVER 0000000	8.20	8.20

Date: 8/31/2012 05:27 PM
Estimate ID: 43-1D27-28001
Estimate Version: 3
Supplement: 3 (F F) 8/31/2012 05:21:56 PM
Profile ID: * Dallas Metro North

78	AUTO	BDY	PAINTLESS REPAIR	R Rear Door Shell (HSS)				
79	101706	BDY	REPAIR	L Rear Door Shell (HSS)	Sublet	125.00 *	0.0*	
80	AUTO	REF	REFINISH	L Rear Door Outside	Existing		2.5*	
81	101752	BDY	REMOVE/REPLACE	R Rear Otr Door Belt Moulding			C 1.6	
82	AUTO	BDY	REMOVE/INSTALL	R Rear Door Pillar Frame Mldg	72910-TF0-003	27.97	0.2 N	
83	101753	BDY	REMOVE/REPLACE	L Rear Otr Door Belt Moulding			0.2	
84	100592	BDY	REMOVE/INSTALL	R Roof Moulding	72950-TF0-003	27.97	0.2 N	
85	100593	BDY	REMOVE/INSTALL	L Roof Moulding			0.4	
86	100859	BDY	REMOVE/REPLACE	Roof Panel (HSS)			0.4	
87	AUTO	REF	REFINISH	Roof Panel Outside	62100-TK6-A00ZZ	451.95	14.0* R	
88	AUTO	MCH	REMOVE/REPLACE	Add w/Side Curtain Air Bag -M			C 2.1	
89				W/S replacement labor time deducted			2.2	
90	100570	REF	BLEND	R Quarter Panel Outside			C 1.0	
91 91	AUTO	BDY	PAINTLESS REPAIR	R Quarter Outer Panel (HSS)	Sublet	225.00 *	0.0* R	
92 92	100278	BDY	REPAIR	L Quarter Outer Panel (HSS)	Existing		3.0* R	

Figure 1 – Estimates and repair record excerpts

2. I have confirmed that the repair procedure was to include welding the roof in place by referring to the Mitchell RepairCenter ™ TechAdvisor. Mitchell International, Inc. states that they deliver "The most up-to-date OEM repair information available today. Mitchell is widely used, although I do not know what John Eagle Collision Center used for OEM processes and procedures. The procedure and the welding diagram are shown below as Figure 2.



Installation

1. Clamp the new roof panel and install the roof arch gusset.
2. Check the body dimensions.
   - Windshield and door opening
   - Tailgate opening
   - Rear pillar gutter position
   - Passenger's compartment
   - Door hinge position
3. Tack weld the front and rear corner edges of the roof panel.
4. Temporarily install the roof moulding, the windshield, the tailgate and the door, then check for differences in level and clearance. Check the external parts fitting position. Make sure the body lines flow smoothly.
5. Do the main welding.
   - From inside the vehicle, weld the front roof rail (A) and the inner upper extension (B). See Fig. 4.
   - Fix the rear roof rail (C) with the mounting bolts (D).

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- Weld the front, rear, and side flange of the roof panel (E). See Fig. 5.
- The roof area must be free of burrs and/or sharp edges to prevent damage to the side curtain air bag during deployment.

Figure 2 – Mitchell repair information

3. The roof panel, which was replaced, was not welded on as part of the repair procedure. John Eagle Collision was responsible for welding the roof on and they failed to perform the necessary welding. Figure 3 shows the failure of the roof in the area where there should be spot-welding. It can be seen that no welds are present. The buckling of the cant rail is due to the lack of welding of the roof panel, which was designed to be welded on and acting as a shear panel for sharing crash loads.

Figure 3 – Defectively repaired Honda Fit roof

4. A section of the roof structure of an exemplar 2010 Honda Fit was obtained and inspected. The spot welding that Honda performed in the manufacturing of the Honda Fit can be seen in this section of the roof structure as shown below in Figure 4.

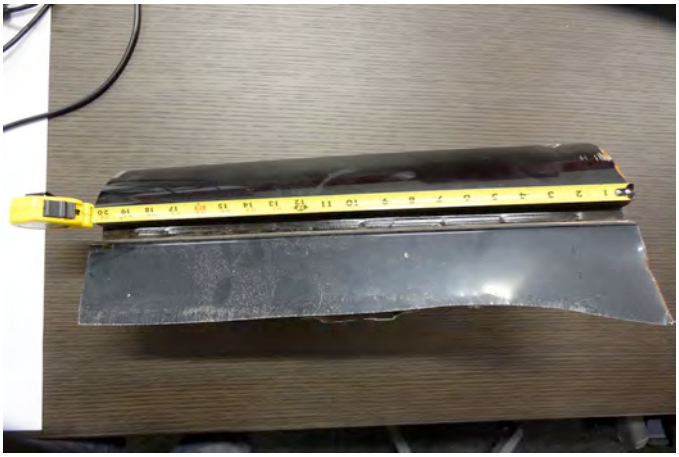


Figure 4 – Original Honda spot welding

5. The affect on the upper structure is seen as the roof cant rail has buckled in three locations along its length. There is a corresponding affect on the underbody structure of the vehicle. When the upper structure cannot carry the loads that it was designed for due to the roof panel welds having been omitted during repair, the loads on the underbody are increased. These increased loads, which the Honda Fit was not designed for, caused failures of the underbody that were not intended.

6. A further consequence of the omission of the required roof welding wass that the entire structure of the Honda Fit, which relies on a properly welded roof structure, was compromised and could not perform as intended. This affected both the upper and lower structure. Figures 4 and 5 show the failures of the lower structure. Both of the lower frame rails have failed and become disconnected from the vehicle body. The left side structure failure compromised the fuel tank.

Figure 4 – Failures of the lower structure

Figure 5 – Failures of the lower structure

7. There is fuel tank material deposited on the left side structure (, 6 and 7). This structure failed for the structural reasons described above and is the direct cause of a compromise to the fuel tank, allowing fuel to escape.

Figure 6 – Fuel tank material on failed structure

Figure 7 – Fuel tank material adjacent to failed structure

B. Missing Fuel Tank Cover

1. The 2010 Honda Fit fuel tank design included four items that were intended to protect the fuel tank. A fuel tank guard, and fuel tank protector and, depending on if the vehicle is an automatic or manual transaxle, a fuel tank cover or a floor under cover. Figure 8 is a page from the 2010 Honda Fit service manual that describes these features as part of the fuel tank replacement procedure.

2. The item referred to as a fuel tank cover or floor under cover was missing from the vehicle at the time of my inspection. I could find no evidence that the tank cover or floor under cover was present at the time of the collision and the subsequent fire.

3. Removal of the fuel tank cover or floor under cover would compromise the protection that it provides to the fuel tank.

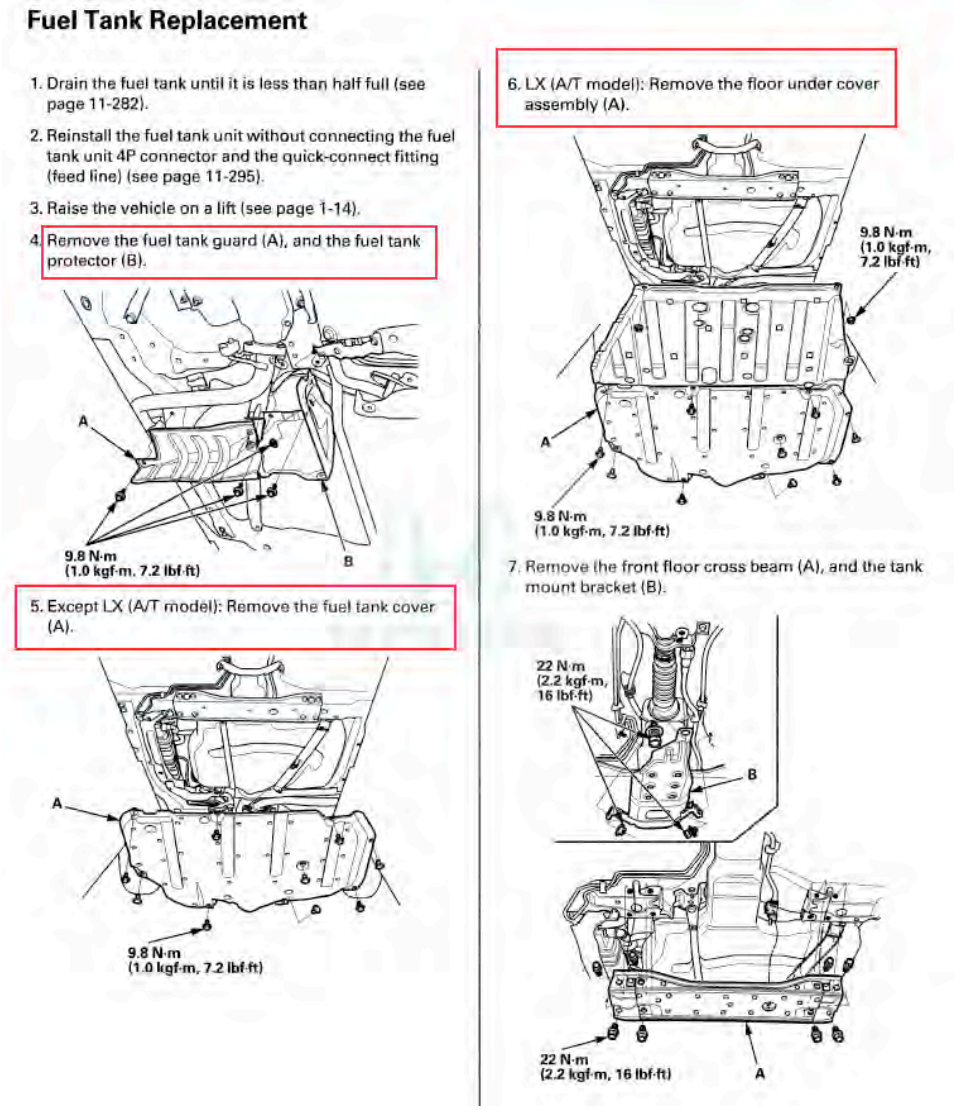
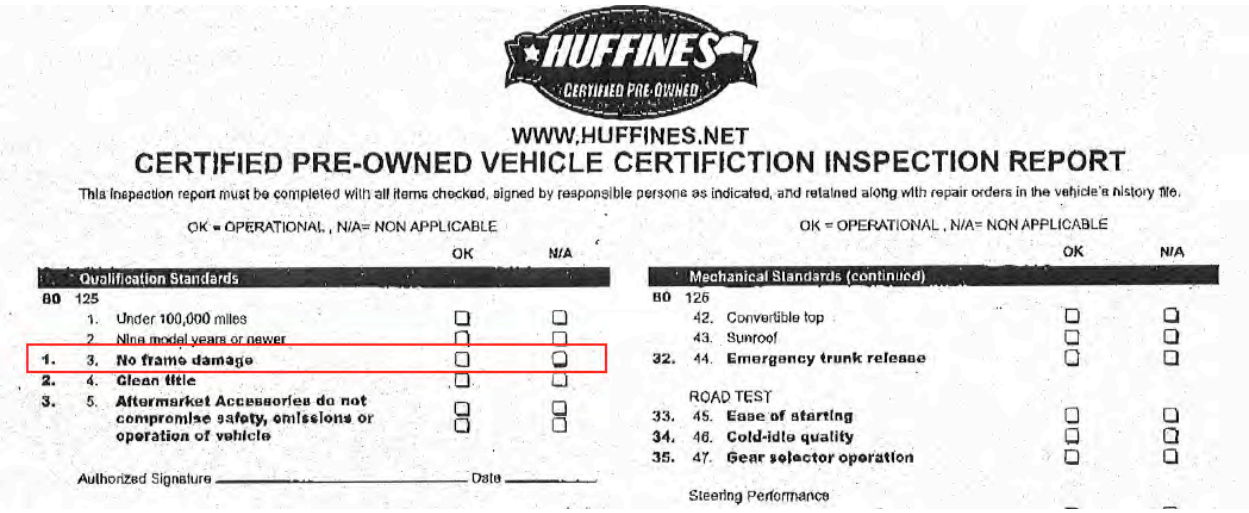


Figure 8 – Excerpt from Honda Fit service manual

4. At the time of this report, I have not seen evidence that would indicate who removed the fuel tank cover or when it was removed. Regardless of who removed it, the selling dealership, Huffines Kia, should have noted that the fuel tank cover was missing during any inspection that they performed. The actual inspection form for the subject vehicle was not provided to me, only a blank inspection form. This form has, as one of the points, an inspection for frame damage (excerpt of the form shown below as Figure 9.) The frame damage point is contained in a red box in Figure 9. While performing the inspection for frame damage, the unused attachment points for the fuel tank cover should have been noted, and investigated to determine that the fuel tank cover was indeed missing.



WWW.HUFFINES.NET

CERTIFIED PRE-OWNED VEHICLE CERTIFICTION INSPECTION REPORT

This inspection report must be completed with all items checked, signed by responsible persons as indicated, and retained along with repair orders in the vehicle's history file.

OK = OPERATIONAL , N/A= NON APPLICABLE

			OK	N/A
		Qualification Standards		
80	125			
	1.	Under 100,000 miles	☐	☐
	2.	Nine model years or newer	☐	☐
1.	3.	**No frame damage**	☐	☐
2.	4.	**Clean title**	☐	☐
3.	5.	**Aftermarket Accessories do not compromise safety, emissions or operation of vehicle**	☐ ☐	☐ ☐

Authorized Signature _____ Date _____

OK = OPERATIONAL , N/A= NON APPLICABLE

			OK	N/A
		Mechanical Standards (continued)		
80	126			
	42.	Convertible top	☐	☐
	43.	Sunroof	☐	☐
32.	44.	**Emergency trunk release**	☐	☐
		ROAD TEST		
33.	45.	**Ease of starting**	☐	☐
34.	46.	**Cold-idle quality**	☐	☐
35.	47.	**Gear selector operation**	☐	☐
		Steering Performance		

Figure 9 – Excerpt from Huffines Kia inspection report

C. Occupant entrapment:

1. The doors of the subject vehicle are jammed shut. This, again, is the result of a defective roof repair. Had the roof been properly welded in place it is likely that the doors would open after this collision.

2. Many manufacturers include as part of their crashworthiness requirements that after a frontal impact that the doors can be opened without excessive force or the use of tools so that entrapment does not occur.

D. Carfax:

1. One important consideration for the Seebachan's purchase decision was the Carfax report. There was nothing in the Carfax report, which indicated the damage or the repair work.

2. Carfax has a disclaimer that "CARFAX DEPENDS ON ITS SOURCES FOR THE ACCURACY AND RELIABILITY OF ITS INFORMATION. THEREFORE, NO RESPONSIBILITY IS ASSUMED BY CARFAX OR ITS AGENTS FOR ERRORS OR OMISSIONS IN THIS REPORT."

3. There are comments in the subject vehicle Carfax with the sources:

   a. John Eagle Dealerships – one input
   b. John Eagle Honda – 5 inputs

4. It is conspicuous that John Eagle Collision Center is absent as a source. Whatever method Carfax uses to gather its sources it seems that John Eagle Collision Center should have been a source.

5. One of the Carfax entries for John Eagle Honda is on 7/17/2012. The comment for that date is "Recommended maintenance performed. Washed/detailed. The John Eagle Collision Center invoice has an R.O. date of 7/17/12, which is the ***same day*** as the maintenance at John Eagle Honda.

6. After the body repair, according to Carfax, John Eagle Honda completed a "Maintenance inspection" with the additional comment of "Seat or seat upholstery repaired". This work is dated 10/22/12, which is just weeks after the body repair was performed.

E. Honda Fit background:

1. The 2010 Honda Fit is part of the second generation of the Honda Global Small Car Platform. The second generation Fit was manufactured for the 2007-2014 model years. It is a four door, front-engine, front-wheel drive subcompact car.

2. One of the features of the Fit was a forward fuel tank location to allow the rear seat to fold into an area where a fuel tank is typically packaged. This locates the fuel tank directly under the front driver and passenger. Figure 10 shows the various seating modes and the tank location. The Utility mode and the Tall mode are 2 modes that benefit from the unique tank location. This was a decision made by Honda in order to gain a marketing benefit for this vehicle featuring a lower load floor and increased cargo volume.

3. Vehicle design safety involves recognized engineering and bioengineering science. Clarified by the Haddon Matrix, the safety of motor vehicles includes design considerations pertaining to pre-collision, collision and post-collision events.

4. Manufacturers select the safety performance they expect and want for each model vehicle.

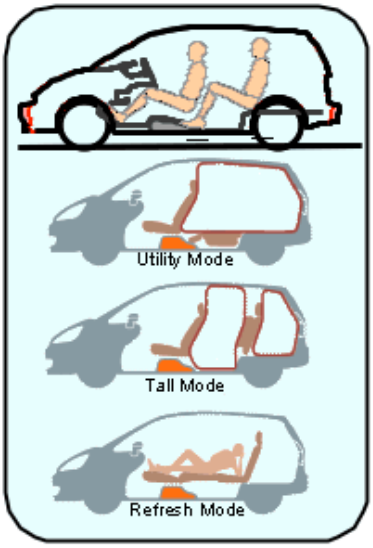


Figure 10 – Honda Fit fuel tank location and seating modes

5. In 2001, when the Honda Global Small Car platform was released, it should have furnished a level of crashworthiness needed to significantly reduce the risk of serious to catastrophic injuries in a variety of intended crash scenarios, including but not limited to collisions involving engagement of some or all of the front end structure. The types of injuries that this model vehicle should have been designed to minimize include, but are not limited to, injuries to the head, neck, upper and lower torso and legs.

6. There are many collision circumstances that the Honda Fit's crash safety system should have been designed and intended to address. These include frontal, side, rear, rollover and various modes of these types of crashes. One of the more typical design modes that most represents the subject accident is classified as a moderate offset frontal impact. The criteria that should have been adopted by Honda would have provided for specific vehicle performance in a variety of frontal offset collision tests and it should include engineering and bioengineering criteria for safety.

7. There is a known correlation between the performance of a vehicle's structure and the level of intrusion into the occupant compartment and the risk of different types of injuries.

8. For many years, the automotive literature has documented the heightened risk of injuries to the lower extremities because of intrusion into the foot well area. This intrusion, which is particularly concerning in offset frontal collisions can be minimized by design choices that involve stiffening features, the development of load paths to spread the force more evenly and locating components to avoid stack-up.

9. In test speeds of at least 40 mph into offset frontal barriers, vehicles of this vintage should be crashworthy so that there is minimal injurious intrusion into the occupant section of the vehicle, which in turn will significantly reduce the risk of any serious injuries to the occupants' lower extremities. Further, the vehicle should be designed so that after a frontal crash the front doors are openable to permit quick egress without the need for tools.

X. Anticipated Defenses

A. The defendants will likely state that the cause of the accident and the serious injury to Matthew and Marcia Seebachan was the driving of either or both of Jack Jordan and Matthew Seebachan. While it is true that these two drivers were involved in this accident, the collision did not cause the serious injuries to Matthew and Marcia Seebachan; the failure of their Honda Fit to protect them was the cause of their serious injuries. There were three people in the striking Toyota Tundra, including an infant. None of the occupants of the Tundra suffered injury, just the people in the Honda Fit. The cause of Matthew and Marcia Seebachan's serious injuries was not the accident, but the failure of the Honda Fit to adequately protect them during the collision and from a post-collision fuel-fed fire. The vehicle was altered in a manner that prevented the crashworthiness systems from preventing the fire from starting, reaching them, and caused their inability to egress the vehicle. This was the cause of their serious injuries. It was technologically and economically feasible to provide a structure and fuel system capable of providing this protection in this collision if proper repairs are made to the vehicle. Altering the vehicle's structure prevented these systems from working as designed. Crashworthiness safety systems do not prevent accidents from happening; they prevent and minimize serious injuries.

B. The defendants may claim that this accident was too severe to escape injury. This would not be correct. Other than the Seebachan's there were three occupants were in the striking vehicle and none of them received anything more than a slight injury.

C. The defendants' may suggest that pre-owned buyers are not entitled to the same degree of safety as the original owner. While the vehicle may be used, have mileage and age, creating wear and tear, this should not affect the important safety systems. These systems do not "wear out" like engines, transaxles, suspension, etc. The safety systems should be designed for the "life of the vehicle". The vehicle structure also does not "wear out", it should maintain its integrity and function for the life of the vehicle. Safety is not related to the age of a vehicle. It was the faulty

repair and inadequate inspection that were the reason for the injuries to Matthew and Marcia Seebachan.

D. The defendants may suggest that the repairs were done properly and that the injuries were caused by accident forces not faulty repairs. Had the roof been properly welded, the safety systems would have performed as intended. This accident should have been survived with only minor injuries. The occupants of the Toyota that had lost control and was stuck in the side by the Honda Fit survived with no injuries, or just a bruise in one case. In a "T-bone" type of accident, the vehicle struck in the side typically has worse injuries that the vehicle that is impacted on the front. In this case, the reverse occurred. This is an indication of the defective roof repair affected many of the safety systems of the Honda Fit. The Seebachan's would likely have had only minor injuries if not for the faulty repair. One must remember that a vehicle's safety systems are like links in a chain. Each system must work together to ensure the other safety systems perform as designed. When the faulty structural repairs were made, the crashworthiness systems were all compromised.

E. The selling dealership may suggest that the faulty repairs could not have been discovered during a pre-owned inspection. The selling dealership had an opportunity to discover the missing fuel tank cover. This would have been discovered during the 125-point Pre-Owned Certified Inspection. While inspecting for the frame damage, the attachment points for the fuel tank cover would have been clearly visible. An investigation into the purpose of the unused attachment points would have lead to the finding that the fuel tank cover was missing.

XVI. Conclusions

Based upon my education, training, experience, review of all the material produced in this case, analysis of the facts of this case, analysis of technical materials obtained and/or reviewed over several decades and my own engineering judgment, the following conclusions are reached to a reasonable degree of automotive engineering and crashworthiness probability:

A. The 2010 Honda Fit was originally designed to provide structural and fuel system crashworthiness protection, which would prevent serious injuries to occupants in this foreseeable accident. In fact, the 2010 Honda Fit receives the highest rating from the IIHS for the moderate offset impact test, which is virtually identical in terms of crash forces to the subject accident.

B. However, defective repairs performed by John Eagle Collision Center altered the structural and fuel system protection of the subject vehicle. In short, the collision center destroyed the crashworthiness capabilities of the subject vehicle.

C. The roof was defectively attached to the vehicle structure by John Eagle Collision Center. It is effectively disconnected from the structure and did not provide the necessary contribution to the overall vehicle structure. There are no welds at the flange between the roof and the cant rail.

D. The front doors on the vehicle were also jammed shut at the time of my inspection. This again is the result of the defective repair performed by John Eagle Collision Center. Also the driver's door suffered a failure of the door beam, and deformation that allowed the fire to enter the occupant compartment from below.

E. The structural failures resulted in intrusion into the occupant compartment, which caused both Matthew and Marcia to be trapped in the vehicle an unable to egress without assistance.

F. The fuel tank was compromised in this collision due to the altered level of structural and fuel system protection caused by the collision center's negligent repairs.

G. The collision center's negligence caused the vehicle's structural failures, which also lead to a fire.

H. The orthopedic and fire injuries were caused by the negligent repairs of the subject vehicle.

I. The selling dealership failed to properly conduct a detailed inspection of the vehicle that would have uncovered the vehicle was lacking a fuel tank cover. Had the repair by John Eagle Collision Center been sent to Carfax, the dealership would have learned that extensive body repair had been done to the vehicle body, so that the buyer could have been advised that the vehicle had experienced significant body repair.

J. The selling dealership was negligent in its inspection of the subject vehicle.

K. The selling dealership's negligence was the cause of the orthopedic and fire injuries and damages.

L. Had the selling dealership notified the plaintiffs of the extensive prior body repair, the plaintiffs would never have purchased the subject vehicle. Further, had the dealership notified the plaintiffs that the vehicle was missing its fuel tank cover, plaintiffs would never have purchased the vehicle.

M. Matthew and Marcia Seebachan were properly wearing their safety belts at the time of this accident.

Note: This report is preliminary and is subject to amendment and supplementation pending a review of further documents that may be produced by the defendant in this matter, and a review of reports by defense experts in this matter.

Sincerely,

Neil Hannemann

Attachments:

A. Neil Hannemann curriculum vita
B. Neil Hannemann list of testimony for the previous four years
C. Texas legal definitions

Reference Material Reviewed:

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