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QUESTION 6

LABOR OP AND DEFECT CODES

Labor	Description
723199	coolant temperature switch and oil pressure switch - replace
723505	retrieve or clear SRS codes w/ diagnostic system
723507	DTC SRS system - retrieve codes with SRS light, read data, troubleshoot and clear DTC, initialize SRS
751096	SRS - repair
751099	SRS - repair
751100	SRS unit - replace
751107	side airbag, left - replace
751108	side airbag, right - replace
751199	SRS - replace
752092	SRS - repair
752099	SRS - repair
752199	SRS - replace
754110	passenger side airbag assembly - replace
754199	passenger side airbag assembly - replace
823503	retrieve codes for SRS indicator light, read data, troubleshoot and clear DTC
823505	retrieve SRS codes w/test drive
842099	headliner - repair
842100	headliner - replace
842199	headliner - replace
851199	left front seat - replace
852199	right front seat - replace
854175	front shoulder belt/retractor or retractor/tensioner, left (1st row) - replace
855185	front shoulder belt buckle, left (1st row) - replace
864175	front shoulder belt/retractor or retractor/tensioner, right (1st row) - replace
7521A4	SRS crash (impact) sensor, left front - replace
7521A5	SRS side curtain airbag, left - replace
7521A5B	with glass roof add. Note: accord - includes removal of a pillar harness
7521A8	SRS crash (impact) sensor, right front - replace

Defect	Category	Sub-category
00201	Broken, Worn, Distorted, Cut, and Deteriorated	Bent
00401	Distorted	
01101	Broken, Worn, Distorted, Cut, and Deteriorated	Permanent set-in fatigue
01801	Broken, Worn, Distorted, Cut, and Deteriorated	Broken
03214	Improper Operation	Erroneous operation
03217	Improper Operation	Not working properly or at all
06401	Short Circuit/Open Circuit	Short circuit
09999	Others	Other

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QUESTION 7

Class Action Claim Form

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

[redacted] and [redacted] on behalf of themselves and all [redacted]milarly situated, **Plaintiffs,** **vs.** **AMERICAN HONDA MOTOR CO., INC., a California corporation,** **Defendant.**	**CASE NO: [redacted]** **Judge Jack Zouhary** **CLAIM FORM**

SIDE AIRBAG SETTLEMENT
c/o **Class Administrator**
P.O. Box 2718
Torrance, CA 90509

Your Signed Claim Form Must Be Mailed and Postmarked No Later Than September 2, 2014

If You Do Not Submit A Claim Form By September 2, 2014, You Will Not Receive The Benefits Described In The Class Notice. Please Read This Entire Form Carefully.

If you experienced a Reimbursable Deployment prior to February 13, 2014, you must fill out this Claim Form to receive the settlement benefits. Members of the Injunctive Class do not need to fill out this Claim Form.

I. ELIGIBILITY AND INSTRUCTIONS

Please read the Class Notice (available at www.SideAirbagSettlement.com) regarding the Settlement carefully before filling out this form. Terms in this Claim Form are defined in the Class Notice and the Settlement Agreement, both of which are available at the Settlement Website.

If you purchased or leased, new or used, one of the following vehicles and you experienced a Reimbursable Deployment while owning or leasing such a vehicle and your vehicle is identified by VIN in the list available on the Settlement Website (see www.SideAirbagSettlement.com), you may be entitled to compensation if you complete and submit this Claim Form in a timely manner: (1) a 2003 Honda Accord Sedan or Coupe with Side Airbags; (2) a 2004 Accord Sedan with Side Airbags manufactured before April 8, 2004; (3) a 2004 Accord Coupe with Side Airbags; or (4) a 2008 Accord Sedan manufactured before June 12, 2008. For a full description of the benefits available under the Settlement and eligibility to claim them, please see Paragraphs 4 and 6 of the Class Notice.

All persons who are members of the Settlement Class and who do not timely request exclusion from the Settlement Class are bound by the terms of the judgment entered by the Court and release their claims against American Honda Motor Co., Inc. ("AHM") described in the Class Notice and Settlement Agreement whether or not they submit a Claim Form.

II. TO CLAIM BENEFITS

The benefit to which you may be entitled under the Settlement depends upon whether your Side Airbag has been previously repaired or replaced.

A. IF YOU EXPERIENCED A REIMBURSABLE DEPLOYMENT BUT YOUR SIDE AIRBAG HAS NOT BEEN REPAIRED OR REPLACED

If you experienced a Reimbursable Deployment of a Side Airbag and the Side Airbag has not been repaired or replaced, you are eligible to have AHM repair or replace (at its election) your Side Airbag free of charge. In order to obtain this benefit, you must:

- Fill out the Settlement Class Information (Section III) below;
- Sign the Verification at the end of the Claim Form;
- Return this completed Claim Form, by mail, no later than September 2, 2014; and
- Take your vehicle to an Authorized Honda Dealer in accordance with the instructions in the written acknowledgment of your claim that you will receive from AHM.

B. IF YOU EXPERIENCED A REIMBURSABLE DEPLOYMENT AND INCURRED EXPENSES TO REPAIR OR REPLACE YOUR SIDE AIRBAG

If you experienced a Reimbursable Deployment of a Side Airbag and incurred out-of-pocket expenses to have your vehicle's Side Airbag repaired or replaced, pursuant to the Settlement, you are eligible for reimbursement of the out-of-pocket expenses that you incurred to replace or repair your vehicle's Side Airbag. In order to obtain this benefit, you must:

- Fill out the Settlement Class Information (Section III) below;
- Sign the Verification at the end of the Claim Form;
- Submit documentation (in the form of receipts, work orders, repair orders or the like) providing proof of the amount of out-of-pocket expenses claimed, the work performed on your vehicle and who performed that work; and
- Submit documentation of any prior reimbursements or deductions from the out-of-pocket expenses claimed, including but not limited to any amounts paid by insurance, discounts given by the person who performed the work on your vehicle or "goodwill" or other credits from AHM or others; and return the completed Claim Form, by mail, no later than September 2, 2014.

CLAIM FORM FOR SIDE AIRBAG DEPLOYMENT

Claim #: [redacted]

Name/Address Changes (if any):

First Name ______ Last Name ______

Address ______

City ______ State ______ Zip ______

NOTE: you will not be entitled to reimbursement from AHM for any amounts for which you have been previously reimbursed, including but not limited to, prior reimbursements by AHM or through an insurance claim.

III. SETTLEMENT CLASS MEMBER CONTACT INFORMATION

Please provide the information below for all claims so we may contact you if necessary or notify you of status:

Daytime Phone ____________________ Evening Phone ____________________

Cell Phone ____________________ e-mail ____________________

Select One:

____ I experienced a Reimbursable Deployment of a Side Airbag that has not been repaired or replaced.

____ I experienced a Reimbursable Deployment and incurred expenses in the amount of $____________ to repair or replace the Side Airbag.

If You Are Seeking Reimbursement, Select One:

____ I have not received any reimbursement of the out-of-pocket expenses I incurred to repair or replace my Side Airbag.

____ I have received partial reimbursement in the amount of $____________ for the out-of-pocket expenses I incurred to repair or replace my Side Airbag.

____ I have been fully reimbursed for all out-of-pocket expenses I incurred to repair or replace my Side Airbag.

If you are submitting this Claim Form on behalf of another person who is a Settlement Class Member, please explain why you have the authority to do so and attach a copy of any Power of Attorney or other documents that you may have.

NOTE: If there is evidence that abuse or misuse of your vehicle caused the Side Airbag to deploy or that the vehicle otherwise did not experience a Reimbursable Deployment, AHM reserves the right to deny reimbursement, repair or replacement. The process for addressing any disputes regarding the denial of

reimbursement, repair or replacement is described in Section IV, Paragraph 3 of the Settlement Agreement.

Documentation

If you are seeking reimbursement of expenses you incurred to repair or replace your Side Airbag, you must submit copies of documents and records you have that establish: (1) the amount of out-of pocket expenses you paid to repair or replace the Side Airbag of your vehicle; and (2) the amount of any reimbursement (even if it was only partial reimbursement) that you received for the repair or replacement of the Side Airbag of your vehicle. Such documents may include, but are not limited to: receipts, work orders, repair orders, canceled checks, credit card statements or other documents that may describe the work performed on your vehicle and who performed that work.

IV. VERIFICATION

I declare under penalty of perjury under the laws of the United States of America and the State of California that I experienced a Reimbursable Deployment of one or more Side Airbags in a Class Vehicle and that the information in this Claim Form is true and correct and that if I am seeking reimbursement, I have provided copies of all of the documents and records within my possession that are requested in Section IV of this Claim Form.

This Claim Form was executed on ______________________________ (month), ______________

(year) in ____ (city, state, country).

____ ____

SIGN YOUR NAME HERE PRINT OR TYPE YOUR NAME HERE

PLEASE KEEP A COPY OF YOUR COMPLETED CLAIM FORM AND OTHER DOCUMENTATION. THE PROCESSING OF CLAIMS WILL TAKE TIME. NO MONEY WILL BE ISSUED UNTIL AFTER THE EFFECTIVE DATE OF THIS SETTLEMENT. AHM RESERVES THE RIGHT TO AUDIT ANY CLAIM FORMS SUBMITTED. PLEASE CHECK THE SETTLEMENT WEBSITE PERIODICALLY FOR UPDATES ON THE STATUS OF THE SETTLEMENT. THANK YOU FOR YOUR PATIENCE.

Please mail your completed claim form, along with your supporting documentation (if required), so that it is postmarked no later than September 2, 2014 to:

SIDE AIRBAG SETTLEMENT
c/o **Class Administrator**
P.O. Box 2718
Torrance, CA 90509

EA14-004

HONDA

11/10/2014

QUESTION 7

Class Action Notice

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

[redacted] and [redacted], on behalf of themselves and all others similarly situated, Plaintiffs, vs. AMERICAN HONDA MOTOR CO., INC., a California corporation, Defendant.	**Case No. [redacted]** **Judge Jack Zouhary** **NOTICE OF PROPOSED CLASS ACTION SETTLEMENT**

PLEASE READ THIS NOTICE CAREFULLY AS IT AFFECTS YOUR LEGAL RIGHTS.[1]

If you purchased or leased, new or used, one of the following vehicles,

> **(1) a 2003 Honda Accord Sedan or Coupe with Side Airbags and identified by VIN on the Settlement Website (www.SideAirbagSettlement.com);**
>
> **(2) a 2004 Accord Sedan with Side Airbags manufactured before April 8, 2004 and identified by VIN on the Settlement Website (www.SideAirbagSettlement.com);**
>
> **(3) a 2004 Accord Coupe with Side Airbags and identified by VIN on the Settlement Website (www.SideAirbagSettlement.com); or**
>
> **(4) a 2008 Accord Sedan manufactured before June 12, 2008 (the "Class Vehicles")**

then you may be entitled to one of the benefits described below.

A judge has approved and authorized the mailing of this Notice to you because you are a potential member of the Settlement Class. This is not a solicitation from a lawyer.

The purpose of this Notice is to: (a) provide a brief description of the Litigation; (b) inform you of the proposed Settlement; and (c) discuss your rights and options as a member of the Settlement Class. All Settlement Class Members who do not elect to exclude themselves from the Settlement, will release American Honda Motor Co., Inc. ("AHM") and others from claims that were alleged or that could have been alleged in the Litigation ("Released Claims") and will be bound by the Settlement.

SUMMARY OF SETTLEMENT		
	Deployment Class	**Injunctive Class**
Class Eligibility	You may be a member of the Deployment Class if you purchased or leased, new or used, a Class Vehicle that experienced a Reimbursable Deployment of a Side Airbag and is identified by VIN on the Settlement Website (www.sideairbagsettlement.com).	You may be a member of the Injunctive Class, if you purchased or leased, new or used, a 2008 Honda Accord Sedan, manufactured before June 12, 2008.

[1] Capitalized terms not otherwise defined herein shall have the meaning ascribed to them in the Class Action Settlement Agreement and Release ("Agreement") available at www.SideAirbagSettlement.com**.**

SUMMARY OF SETTLEMENT (continued)		
	Deployment Class	**Injunctive Class**
Class Benefits	Members of the Deployment Class are eligible to receive one of two benefits: • Reimbursement of all expenses incurred, but not previously reimbursed, to repair or replace the Side Airbag following a Reimbursable Deployment; or • Repair or replacement (at AHM's election) at no charge of a Side Airbag that experienced a Reimbursable Deployment prior to the Preliminary Approval Date but had not been previously repaired.	Members of the Injunctive Class who experience a Reimbursable Deployment of a Side Airbag are eligible to have the Side Airbag repaired or replaced (at AHM's election) at no charge provided that they present a claim for a Reimbursable Deployment to an Authorized Honda Dealer within two (2) years of the Effective Date.
Your Legal Options	• Participate in the Settlement; • Opt Out of the Settlement; or • Object to the Settlement.	• Participate in the Settlement; • Opt Out of the Settlement; or • Object to the Settlement.
What You Must Do To Participate In The Settlement	Submit a timely and valid Claim Form by **September 2, 2014** along with the required documentation supporting your claim. See Section 10(a) below for more information.	Nothing at this time. If you experience a Reimbursable Deployment within two (2) years of the Effective Date, you must take your vehicle to an Authorized Honda Dealer.
What You Must Do To Opt Out Of The Settlement	You must act by **September 2, 2014**. See Section 10(b) Below.	You must act by **September 2, 2014**. See Section 10(b) Below.
What You Must Do To Object To The Settlement	You must act by **September 2, 2014**. See Section 10(c) Below.	You must act by **September 2, 2014**. See Section 10(c) Below.
What You Must Do To Attend The Hearing On November 19, 2014	You must act by **October 10, 2014**. See Section 11 Below.	You must act by **October 10, 2014.** See Section 11 Below.
What Happens If You Do Nothing	If you do not sign and return a Claim Form, you will not be able to claim benefits under the Settlement, but you will be bound by the Court's judgment.	You are not required to take any action at this time. If you experience a Reimbursable Deployment within two (2) years of the Effective Date, you must take your vehicle to an Authorized Honda Dealer. If you do nothing, you will not receive any benefits and will be bound by the Court's judgment.

1. **SETTLEMENT SCOPE**: Upon final approval of this Settlement, all claims asserted in Gutierrez, et al. v. American Honda Motor Co., Inc., Case No. 5:09-cv-01517-JZ-OP (C.D. Cal., filed Aug. 10, 2009) will be fully and finally resolved.

2. **NATURE OF THE LITIGATION**: Plaintiffs filed a complaint in the United States District Court for the Central District of California, alleging on behalf of themselves and a proposed class that AHM markets, distributes and sells vehicles allegedly equipped with a defective side airbag system in that the side airbags are purportedly prone to inadvertently deploying while the vehicle is being driven under normal conditions. Plaintiffs assert causes of action for violation of Cal. Bus. & Prof. Code § 17200, et seq. and Cal. Civ. Code § 1750, et seq.

AHM expressly denies the allegations in the Litigation and all claims asserted therein and specifically denies that it has engaged in any wrongdoing whatsoever, that the side airbags in Honda Accords are in any sense defective and that it has made any false or misleading statements whatsoever.

On February 13, 2014, the Hon. Jack Zouhary preliminarily approved a proposed Settlement of all of the claims in the Litigation, preliminary certified the Settlement Classes described below and directed Notice as provided for in the Settlement.

3. **NOTICE:** This Notice informs members of the Settlement Class of the Litigation and the proposed Settlement and describes their rights, options and choices. This Notice and the Agreement in its entirety are posted on the Settlement Website at www.SideAirbagSettlement.com and are also available from AHM. Other documents available on the website include the operative complaint filed in the Litigation, the papers that are or will be filed with the Court requesting preliminary and final approval of the Settlement described in this Notice, a copy of this Notice and a Claim Form.

4. **SETTLEMENT CLASSES:** The classes described below have been conditionally certified by the Court. If you are a member of the Settlement Class described in this Notice, the proposed Settlement will affect your legal rights.

Injunctive Class: All Persons in the United States and the District of Columbia who purchased or leased a new or used 2008 Accord Sedan manufactured before June 12, 2008.

Specifically excluded from the Injunctive Class are the following Persons:

(i) Class Counsel;

(ii) AHM; AHM's officers, directors and employees; the officers, directors and employees of AHM's affiliated companies; issuers of extended vehicle warranties; and

(iii) The judges who have presided over this Litigation.

Deployment Class: All Persons in the United States and the District of Columbia who purchased or leased: (1) a 2003 Honda Accord Sedan or Coupe with Side Airbags for which the owner or lessee complained to AHM or an Authorized Honda Dealer about a Reimbursable Deployment of a Side Airbag and identified by VIN in an Exhibit that is to be filed with the Court prior to the Notice Date; (2) a 2004 Accord Sedan with Side Airbags manufactured before April 8, 2004 which the owner or lessee complained to AHM or an Authorized Honda Dealer about a Reimbursable Deployment of a Side Airbag and identified by VIN in an Exhibit that is to be filed with the Court prior to the Notice Date; (3) a 2004 Accord Coupe with Side Airbags which the owner or lessee complained to AHM or an Authorized Honda Dealer about a Reimbursable Deployment of a Side Airbag and identified by VIN in an Exhibit that is to be filed with the Court prior to the Notice Date; and (4) a 2008 Accord Sedan manufactured before June 12, 2008 with Side Airbags for which the owner or lessee complained to AHM or an Authorized Honda Dealer about a Reimbursable Deployment of a Side Airbag and identified by VIN in an Exhibit that is to be filed with the Court prior to the Notice Date.

Specifically excluded from the Deployment Class are the following Persons:

(i) Class Counsel;

(ii) AHM; AHM's officers, directors and employees; the officers, directors and employees of AHM's affiliated companies; issuers of extended vehicle warranties; and

(iii) The judges who have presided over this Litigation.

5. **CLASS COUNSEL**: The Court has appointed the following as counsel for the Injunctive Class and the Deployment Class:

Mike Arias, Esq.
Alfredo Torrijos, Esq.
Arias, Ozzello & Gignac, LLP
6701 Center Drive West, 14th Floor
Los Angeles, California 90045
Telephone: (310) 670-1600
Facsimile: (310) 670-1231
E-mail: marias@aogllp.com
atorrijos@aogllp.com

Jordan S. Esensten, Esq.
Esensten Law
12100 Wilshire Blvd.
Suite #1660
Los Angeles, California 90025
Telephone: (310) 273-3090
Email: jesensten@esenstenlaw.com

Brian D. Chase, Esq.
Bisnar Chase
One Newport Place
1301 Dove Street, Suite 120
Newport Beach, California 92660
Telephone: (949) 752-2999
Facsimile: (949) 752-2777
E-mail: bchase@bisnarchase.com

6. **AN EXPLANATION OF THE PROPOSED SETTLEMENT:** If the Court approves the proposed Settlement at the Final Approval Hearing and the Settlement becomes Final (in other words, no longer subject to appeal and therefore in effect (the date on which this occurs being the "Effective Date")), AHM will provide the following benefits to eligible members of the Injunctive Class and Deployment Class:

a. **The Deployment Class**. A member of the Deployment Class may be entitled to reimbursement of expenses incurred but not previously reimbursed to repair or replace a Side Airbag that experienced a Reimbursable Deployment. A member of the Deployment Class will not be entitled to reimbursement for any amounts for which he or she has been previously reimbursed in any manner whatsoever, including but not limited to, any amounts paid by insurance, discounts given by the Person who performed work on the Side Airbag and vehicle or "goodwill" or other credits from AHM or others.

A member of the Deployment Class who experienced a Reimbursable Deployment of a Side Airbag, but who has not yet had the Side Airbag repaired or replaced may be entitled to bring his or her vehicle to an Authorized Honda Dealer for repair or replacement (at AHM's election) at no charge.

To obtain reimbursement, you must timely submit a completed Claim Form on or before **September 2, 2014**. Depending upon your claim, you may also be required to submit documentation supporting your claim that you experienced a Reimbursable Deployment and the amount of out-of-pocket expenses you incurred to repair or replace the Side Airbag. If you do not already have such documentation, you may obtain such documents from the Authorized Honda Dealer or other automotive repair shop that repaired your vehicle. AHM reserves the right to audit all Claim Forms and to deny reimbursement, repair or replacement if there is evidence that abuse or misuse of the vehicle caused the Side Airbag to deploy or that the vehicle otherwise did not experience a Reimbursable Deployment. The process for addressing any disputes regarding denial of reimbursement is set forth in the Settlement Agreement. **Please note that Claim Forms for reimbursement will not be processed until after the Effective Date, and reimbursement will not be provided until after the Effective Date. Claim Forms for members of the Deployment Class who have not yet had their Side Airbags repaired or replaced will be processed upon receipt so that the class members may present their vehicles to an Authorized Honda Dealer as soon as possible.**

b. **The Injunctive Class.** For two (2) years after the Effective Date and subject to the terms of the Settlement Agreement, AHM agrees to repair or replace (at AHM's election) the Side Airbag for members of the Injunctive Class who experience a Reimbursable Deployment of a Side Airbag, provided that the member of the Injunctive Class presents his or her vehicle to an Authorized Honda Dealer within the two (2) years of the Effective Date. AHM has the right to deny, in its discretion, repair or replacement to a member of the Injunctive Class if there is evidence that abuse or misuse of his or her vehicle caused the Side Airbag to deploy or that the vehicle otherwise did not experience a Reimbursable Deployment. The process for addressing any disputes regarding denial of repair is set forth in the Settlement Agreement. **Members of the Injunctive Class are encouraged to present their vehicles to an Authorized Honda Dealer as soon as possible after experiencing a Reimbursable Deployment.**

7. **CLASS COUNSEL'S FEES, EXPENSES AND NAMED PLAINTIFF INCENTIVE AWARDS:** Class Counsel will collectively request, as part of the final approval of the Settlement, that the Court approve a payment of up to $1,180,000 in Attorneys' Fees and Expenses and an aggregate payment of $15,000 to the class representatives in consideration for their participation and the time each devoted to this litigation. **These payments will not reduce the benefits that the Settlement Class may receive.**

8. **ADMINISTRATIVE COSTS**: All administrative costs of settlement, including the cost of notice, claims administration, cost of the Settlement Administrator, and any other costs of settlement shall be paid by AHM and will not reduce any potential benefits to the Settlement Class Members.

9. **RESULT IF COURT APPROVES SETTLEMENT:** If the Court approves the proposed Settlement, the Litigation will be dismissed, and AHM will provide the benefits described above to Settlement Class Members. After the Litigation is dismissed, no Settlement Class Member who did not request exclusion will be able to file his or her own lawsuit for recovery for any of the Released Claims.

10. **YOUR CHOICES:**

a. **Participate In The Settlement.** If the Court approves the Settlement, you will automatically become eligible to receive some or all of the benefits described above. If you are a member of the Deployment Class, you must timely complete and submit a Claim Form. If you are a member of the Injunctive Class, you need not do anything at this time. Unless you exclude yourself from the Settlement, you are staying in the Settlement Class, and that means that you cannot sue, continue to sue, or be part of any other lawsuit against AHM about the legal issues in this case. It also means that all of the Court's orders will apply to you and legally bind you. A description of the "Released Claims," which explains exactly the legal claims that you give up if you do not exclude yourself from the Settlement, is set forth in the Settlement Agreement available at www.SideAirbagSettlement.com. If you wish to comment in favor of the proposed Settlement, you may mail your comment to SIDE AIRBAG SETTLEMENT c/o Class Administrator, P.O. Box 2718, Torrance, CA 90509, and your comment will be forwarded to Class Counsel and the Court. Alternatively, you may send your comments directly to any Class Counsel at the addresses listed in Paragraph 5.

b. **Exclude Yourself From The Settlement**. If you are a member of the Settlement Class and wish to be excluded from the Settlement, you must mail an Opt Out request, postage prepaid, postmarked no later than **September 2, 2014** to the following address: SIDE AIRBAG SETTLEMENT c/o Class Administrator, P.O. Box 2718, Torrance, CA 90509. A request to exclude yourself from the Settlement must include (i) your name, address, telephone number, (ii) the model year and VIN of your Accord, and (iii) a signed statement indicating your wish to be excluded from the Settlement Class. If you do not timely submit an Opt Out request including all of the above information, you will be bound by the Settlement and all of your claims for any of the Released Claims will be released. If you validly and timely request exclusion from the Settlement Class, you will not be bound by the Final Order and Judgment entered in this Litigation. Excluding yourself means you cannot receive any of the benefits of the Settlement or comment upon the Settlement, but you will be able to file a lawsuit on your own behalf. If you have any questions concerning these procedures, please contact Class Counsel.

c. **Filing Written Objections.** If you are a member of the Settlement Class and you do not Opt Out, you may object to the terms of the Settlement, the Attorneys' Fees and Expenses, and/or the incentive awards to the class representatives. If you object and the Settlement is approved, you will be barred from bringing your own lawsuit, and you will be bound by the Final Order and Judgment entered in this Litigation. You may, but need not, enter an appearance through counsel of your choice. If you do retain counsel, however, you will be responsible for your own counsel's fees and costs, and in any event, AHM will bear no responsibility for such fees and costs. If you object to the Settlement, you or your counsel must on or before **September 2, 2014** file with the Court and serve on Class Counsel and AHM (to the respective addresses listed on this Notice) a written objection including: (i) your name, address and telephone number and, if represented by counsel, of your counsel; (ii) the model year and VIN of your vehicle; (iii) a written statement of all grounds for the objection accompanied by any legal support for such objection; (iv) copies of any papers, briefs or other documents upon which the objection is based**;** (v) a statement of whether you intend to appear at the Final Approval Hearing; and (vi) if you intend to appear at the Final Approval Hearing through counsel, the objection must also identify the attorney(s) who is representing you and who will appear at the Final Approval Hearing. In addition, any Settlement Class Member who intends to appear and address the Court at the Final Approval Hearing (including through counsel) must on or before **October 10, 2014** file with the Clerk of the Court a notice of appearance and, if necessary, a *pro hac vice* application. The address for filing any documents with the Court is George E. Brown, Jr. Federal Building and United States Courthouse, 3470 Twelfth Street, Riverside, CA 92501-3801. **Settlement Class Members who do not timely make their objections in accordance with the procedures set forth above waive all objections and may not be heard at the Final Approval Hearing or have the right to appeal approval of the Settlement.** If you have any questions concerning these procedures, please contact any Class Counsel.

11. **FINAL APPROVAL HEARING:** A hearing will be held at the Ninth Circuit Court of Appeals, Richard H. Chambers Courthouse, 125 South Grand Avenue, Pasadena, California 91105 on November 19, 2014 at 9:00 a.m., Judge Jack Zouhary presiding. At the Final Approval Hearing, the Court will decide whether the proposed Settlement is fair, reasonable and adequate and should be approved and, if so, approve the Attorneys' Fees and Expenses and Plaintiffs' Incentive Awards. The time, date and location of this Final Approval Hearing may be changed by the Court without further notice to you. Any member of the Settlement Class may attend the Final Approval Hearing. Any member of the Settlement Class who does not request exclusion may also enter an appearance through counsel, but all fees and costs of such counsel are the responsibility of the member of the Settlement Class. If you wish to attend or have your attorney attend the hearing on your behalf, you may do so, but if you or your attorney would like to address the Court during the hearing, you must follow the procedures set forth in Paragraph 10(c) above. If you plan to attend the hearing, you should confirm its time, date and location. Any updates or changes on the time, date or location of this hearing will be posted on the Settlement Website at www.SideAirbagSettlement.com.

12. **ADDITIONAL INFORMATION:** For additional information, you may call 1-888-888-3082 or visit www.SideAirbagSettlement.com.

Please do not call or write the Court or the Office of the Clerk except as directed by this Notice.

EA14-004

HONDA

11/10/2014

QUESTION 7

SERVICE BULLETIN A14-023

May 24, 2014 ATB 51520-51647 (1405)

Class Action Notification Mailing: Proposed Warranty Extension for Inadvertent Side Curtain and or Front Seat Side Airbag Deployment

Supersedes 14-024, dated May 13, 2014, to revise the information highlighted in yellow.

REVISION SUMMARY

In the Title, the text “Side Curtain” has been added. Under BACKGROUND and DEALER RESPONSIBILITY, the text “side curtain” has also been added.

AFFECTED VEHICLES

Year	Model	Trim
2008	Accord	4-Door

BACKROUND

This bulletin is a preliminary notification of a class action settlement, pending final court approval, relating to alleged inadvertent deployment of the side curtain and or front seat side airbag. If approved by the court, the warranty of some 2008 4-door Accords will be extended for 2 years from the effective date of the settlement to cover the side curtain and or front seat side airbags and related components in the event of an inadvertent deployment. If approved, the estimated date of the warranty extension will be approximately December 2014. The bulletin will then be revised to include warranty claim information.

If approved, this warranty extension will not cover any deployment due to collision, misuse, or abuse. If there is evidence that abuse or misuse of the vehicle caused the side curtain and or front seat side airbag to deploy, contact your DPSM.

This warranty extension will not apply to any vehicle that has ever been declared a total loss or sold for salvage by a financial institution or insurer, or has a branded or similar title under any state’s law.

CUSTOMER NOTIFICATION

Owners of affected vehicles will receive a notification of this class action starting in May 2014. Customers may also call the toll free number **1-888-888-3082** or go to *http://www.sideairbagsettlement.com*.

DEALER RESPONSIBILITY

The warranty extension is subject to final approval from the court. Until that time, the normal vehicle warranty applies.

- Until final court approval, before working on any vehicle that may have experienced an inadvertent side curtain and or front seat side airbag deployment, contact your DPSM.
- Customers who claim to have experienced an inadvertent deployment prior to final approval of the settlement, and who have not had the airbag replaced or repaired, might bring their vehicles to an authorized Honda dealer for inspection before the court has granted final approval of the settlement. Such claim will be treated as a goodwill request and addressed on a case-by-case basis. Contact your DPSM.
- Customers seeking reimbursement for out-of-pocket expenses for past repairs should refer to the class action notice or can call the toll free number **1-888-888-3082** or *http://www.sideairbagsettlement.com*.

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-1_QIS_TA5A08051202

Q8-11 - MQ Monthly 2PX Door slam deployment_7_23_08_REDACTED

08M Accord 4dr – Door slam deployment

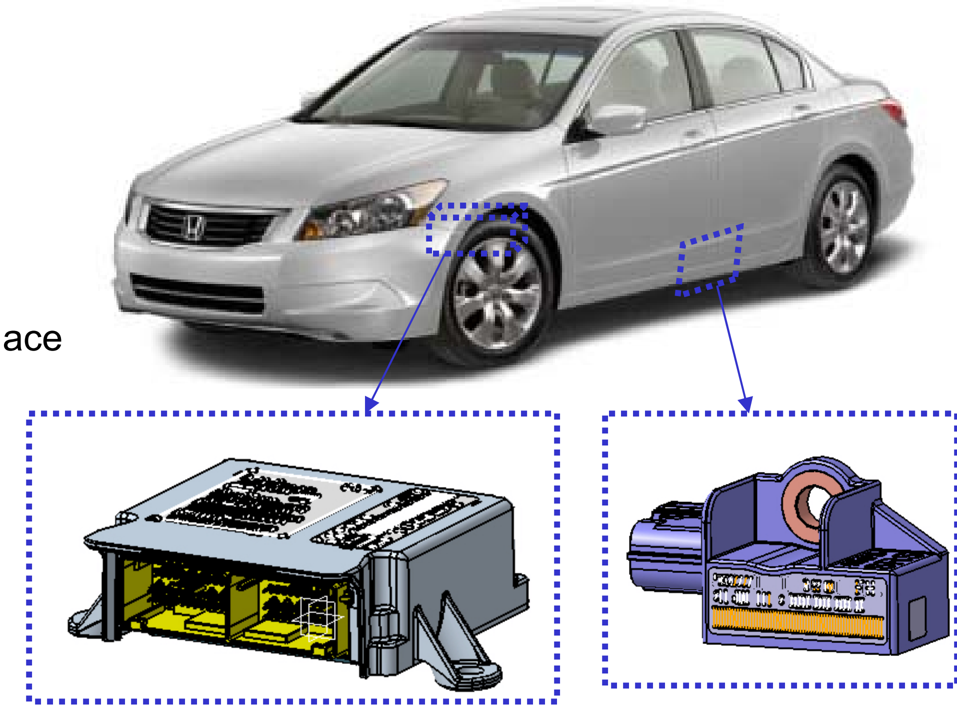
1.0 Overview

1.1 Customer Complaint:

- Curtain and side airbags deployed when the customers shut/slammed the door closed

1.2 Dealer Repair

- Contacting AH Techline – repair vehicle by replace airbags, sensors, and SRS unit.



1.3 Affected Model (N=16 occurrences)

- 08M Accord 4dr MAP (N=12)
- 08M Accord 4dr Css (N=4)
- 2dr Accord **Not** affected

1.4 QIS

- HAM: TA5A08051202
- AQAO: MV20080416135749

1.5 C/M

- Design Change: C48-2-1702
- MAP C/M Date: 6/4/08
- Css C/M Date: 6/30/08

1.6 Next Step

- QIS Closure for NA Market

08M Accord 4dr – Door slam deployment

2. Market Occurrences

VIN	AF Date	Honda Contact Date	Techline #	Claim #	Other
1HGCP26738A[redacted]	2/8/2008	2/19/2008		[redacted]	Railyard
1HGCP26718[redacted]	2/7/2008	3/18/2008	2576877	[redacted]	
JHMCP26828[redacted]	1/10/2008	3/24/2008	2580959	[redacted]	
JHMCP26388[redacted]	1/9/2008	3/24/2008	2580818	[redacted]	
1HGCP267X8[redacted]	9/18/2007	4/23/2008	2569095	[redacted]	
JHMCP26868[redacted]	9/18/2007	4/24/2008	2601024	[redacted]	
1HGCP26828[redacted]	12/7/2007	4/25/2008	2602293	[redacted]	
1HGCP26318[redacted]	3/4/2008	4/28/2008	2602740	[redacted]	
1HGCP26408[redacted]	10/31/2007	4/29/2008	2603963	[redacted]	
1HGCP268X8[redacted]	3/20/2008	5/14/2008	2613246	[redacted]	
1HGCP26318[redacted]	11/20/2007	5/19/2008	2615428	[redacted]	
1HGCP36868[redacted]	1/29/2008	6/9/2008	2628527	[redacted]	
JHMCP26828[redacted]	8/28/2007	6/12/2008	2631093	[redacted]	
1HGCP26488[redacted]	12/4/2007	6/14/2008	2632121		
1HGCP26828[redacted]	10/18/2007	6/19/2008	2635077		
1HGCP26838[redacted]	10/25/2007	7/2/2008	2643472		

Key Points

•Dealer and MQ was unable to find any body damage as a result of a deployment

•All deployments occurred when one of the front doors were shut/slam.

•About 50% of the occurrences have a warranty claim.

08M Accord 4dr – Door slam deployment

3. Part Analysis (Returned SRSCU)

	1HGCP26738A[redacted]	1HGCP26718A[redacted]
SIS	[redacted] All d_v values from all SIS: Row1 SIS Left DV short High byte (ROW1_L_DVSn) [redacted] [redacted] [redacted] All d_v values from all SIS: Row1 SIS Left DV short Low byte [redacted]	[redacted] All d_v values from all SIS: Row1 SIS Right DV short High byte (ROW1_L_DVSn) [redacted] [redacted] [redacted] All d_v values from all SIS: Row1 SIS Right DV short Low byte [redacted]
SRS	[redacted] SRS_y delta_v for decision maps High byte (ECUY2kHz_DVn) [redacted] [redacted] [redacted] SRS_y delta_v for decision maps Low byte [redacted]	[redacted] SRS_y delta_v for decision maps High byte (ECUY2kHz_DVn) [redacted] [redacted] [redacted] SRS_y delta_v for decision maps Low byte [redacted]
Crash recording	[redacted]	[redacted]

Key Points

- Continental's analysis found no abnormal recording or performance of the parts returned from deployment units
- SRS crash data recordings shows high G-force from the side of door closing

08M Accord 4dr – Door slam deployment

4. Recreation Testing

AQAO/HGT testing

Impact Side	Speed	Test Vehicle Condition	Deployment
-	[redacted]	[redacted]	OFF
-	[redacted]	[redacted]	OFF
L	[redacted]	[redacted]	OFF
L	[redacted]	[redacted]	OFF
L	[redacted]	[redacted]	ON
L	[redacted]	[redacted]	ON
L	[redacted]	[redacted]	OFF
R	[redacted]	[redacted]	OFF
R	[redacted]	[redacted]	ON
R	[redacted]	[redacted]	ON
R	[redacted]	[redacted]	OFF
R	[redacted]	[redacted]	OFF
R	[redacted]	[redacted]	OFF
R	[redacted]	[redacted]	OFF
R	[redacted]	[redacted]	ON
R	[redacted]	[redacted]	ON
R	[redacted]	[redacted]	OFF
R	[redacted]	[redacted]	ON
R	[redacted]	[redacted]	ON
R	[redacted]	[redacted]	OFF

Match

MQ testing

Test #	Door Speed (m/s)	Deployment
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	No
1	[redacted]	Yes
2	[redacted]	No
2	[redacted]	No
2	[redacted]	No
2	[redacted]	No
2	[redacted]	No
2	[redacted]	No
2	[redacted]	No
2	[redacted]	No
2	[redacted]	No
2	[redacted]	No
2	[redacted]	No
2	[redacted]	No
2	[redacted]	No
2	[redacted]	No
2	[redacted]	No
2	[redacted]	Yes

•MQ and AQAO/HGT recreation testing shows door speed must exceed ~ [redacted] m/s

08M Accord 4dr – Door slam deployment

5. Horizontal review

MY	Model	Door speed	Margin of G-force from deployment
2003	Accord 4Dr	[redacted] m/s	HGT
	Accord 2Dr		[redacted]
	Civic 2Dr		
	Civic 4Dr		
	Pilot		
	Element		
2004	TL		
2005	Accord 2Dr		
	Accord 4Dr (ACM)		
	TSX		
	RL		
	Odyssey		
2006	Civic 2Dr (BCM)		
	Civic 4Dr		
	Ridgeline		
	Element (CM LTD)		
2007	Civic 2Dr (CM		
	CR-V		
	Element (TRW)		
	MDX		
	RDX		
	US Fit		
2008	Accord 4Dr		
	Accord 2Dr		
2009	Pilot		
	TL		
	TSX		
	US Fit		
2010	Accord Crossover		Not yet
	Acura Crossover (HCM)		Not yet
	Global IMA		Not yet

•08M Accord 4dr had a [redacted]% margin above the [redacted] m/s door speed test.

•Old Design guideline target for [redacted] m/s test is +[redacted]% margin in G-force

• New Margin guideline is >[redacted]%

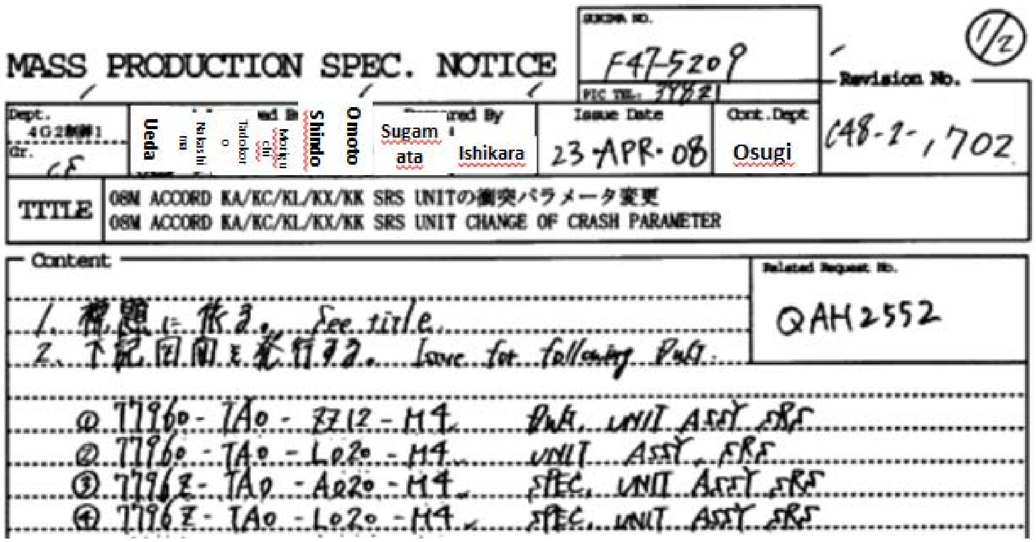
Last Open Item from HGT/AQAO/Video

Left 1st Row - [redacted]%
Right 1st Row - [redacted]%
Left 2nd Row - [redacted]%
Right 2nd Row - [redacted]%

09TL Judgment: Okay

08M Accord 4dr – Door slam deployment

6. C/M



- New threshold level will result in a [redacted]% margin in [redacted] m/s door shut test (BC/M = [redacted]%)
- KA parts arrived line-side on 6/4/08
- Service parts have rotated with C/M parts

[redacted]

ew threshold level

SRS vs SIS must be over this new level for deployment

ld threshold level

08M Accord 4dr – Door slam deployment

7. Problem Prevention

Table 8-21 Collision Judgment Performance Requirement

Type		Mode	Requirement	
			Target TTF	Target G Margin
	Non-Collision System	Door Slam Shut	OFF	[redacted]
OFF Requirement	Drive System	[redacted]	[redacted]	[redacted]
	Collision System	[redacted]	[redacted]	[redacted]
On Requirement		[redacted]	[redacted]	[redacted]

Development spec change for 11M: Margin increased from [redacted] to [redacted]

08M Accord 4dr – Door slam deployment

8. Next Step: Close QIS

MQ Proposal:
Close QIS with 'Recommended Field Action' as handle under normal due to low occurrence.

Similar issues were closed with same type 'Recommended Field Action'

- 06M Civic 2Dr – Door Slam
- 03-05M Element – Low Threshold
- 03M Accord 4Dr – Low Threshold

AQAO QIS

C/M TYPE	VEHICLE IDENTIFICATION NUMBER	C/M APPLICATION DATE	ENGINE NUMBER	TRANSMISSION NUMBER
Lasting	JHMCP26329C[redacted]	6/30/2008	-	-

RECOMMENDED FIELD ACTION: -No specific treatment will not be taken due to this is a rare case by related the user door slam speeds.

COUNTERMEASURE EFFECTIVENESS: -Assess that it was effective due to new threshold setting valude could secure 100% margin for the door slam (5m/s).

RESPONSIBLE DEPARTMENT CAUSE ANALYSIS

CHIEF ENGINEEER	Q.E.D. MANAGER	Q.C.C.STAFF ENGINEER		RESPONSIBLE DEPT.MANAGER
		REPLY	ISSUE	

HCM QIS for 06M Civic

APPROVAL

COUNTERMEASURE EFFECTIVENESS

TBD - BASED ON TESTING BY R&D.

FIELD ACTION

CIE MEETING - NO FIELD ACTION IS REQUIRED. OCCURENCE PREDICTION IS LOW.

PROD DATE	TYPE	DEST	C/M FRAME #	NOTES
8/3/2007	PERM	KC	2HJYK16408H[redacted]	GROMMET ADDED TO RRS
1/1/2001	PERM	KA	2HJYK16448H[redacted]	GROMMET ADDED TO RRS

END

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11/10/2014

QUESTION 8

Q8-1_QIS_TA5A08051202

Q8-12 - QIS TA5A08051202_REDACTED

Design

Issued By HAM

HAM Frame Quality Dpts

QUALITY IMPROVEMENT SHEET (Q.I.S.)

COUNTERMEASURE CONTROL#	RESPONSIBLE SITE AND DEPARTMENT		Rank
TA5A08051202	HAM Frame	HAM MARKET QUALITY	A
INFORMATION SOURCE	**Problem Definition ID**	**CBU Category**	
TTB	PDHAM091221001	DENSO	
Supplier	**Affected Model**		**RESPONSIBLE DPT ISSUE DATE**
CONTINENTAL AUTOMOTIVE SYSTEMS	MAP-ACCORD		5/16/2008
Market Information Issuer	**Lead Quality Investigator**	**Investigator Team**	**THEME UP DATE**
Dana Davis	Norm Ruger	HAM Denso/OBD [old]	5/12/2008

Title

08M Accord side SRS replaced.

Customer Complaint

Customer experiences an SRS deployment when the front door is closed.

Dealer Repair

<QIS from old system. No specific Dealer Repair text exists>

Finish Date	1st COUNTERMEASURE APPLICATION DATE	C/M Target Date	
8/5/2008	6/5/2008	9/15/2008	

Market Data Investigation

Per DAS MQD-HAM-FRAME-985. Five known occurrences of the side SRS deployment; five Techline entries (two with claims).
1HGCP26718A[redacted] - TL 2576877 - Claim [redacted].
1HGCP26408A[redacted] - TL 2601024 - Claim [redacted]
1HGCP26318A[redacted] - TL 2602740. 1HGCP267X8A[redacted] - TL 2600405.
1HGCP26828A[redacted] - TL 2602293.

Investigation Cause Analysis

MQ and Continental analyzed 2 SRS units and side impact sensors (SIS) from the market for deployment caused by slamming the door.
Analysis: All units have crash data stored that indicate that the SIS and SRS detected a G-force from the side which door was shut.
No abnormal defects found in the performance of the SIS and SRS units.
Recreation testing: MQ compared KG parts to the parts that were returned for deployment. Found no difference in performance from suspect part to known good parts.

SRS	SIS	Door speed for deployment
KG	KG	[redacted] m/s
Suspect	KG	[redacted] m/s
KG	Suspect	[redacted] m/s
Suspect	Suspect	[redacted] m/s

MQ judges this to be a design issue.

VIEW BEFORE COUNTERMEASURE	VIEW AFTER COUNTERMEASURE

Responsible Department Root Cause Analysis

Customers were shutting the door with a higher force than the designed threshold level for a side impact. Threshold level did not meet market usage.

COUNTERMEASURE BY	COUNTERMEASURE CONTROL#
9/15/2008	TA5A08051202

Recomnd Sold Product Treatment	Recomnd Stock Product Treatment	Recmd Part Stock Change	Design Change Number
NORMAL WARRANTY	NO TREATMENT	PARTS CENTER STOCK	C4821702

CoreMQ Problem Definition ID	CoreMQ Problem Definition Name
2782	Accord side SRS replaced

C/M Title	C/M Location	C/M Type
Est date	Frame Factory	Other

CM Details

Crash parameter for side deployment was increased.

D/C#: C48-2-1702
IPPAAR#: 0000016722
IPP tag# for 77960-TA0-A020-M4: 0000340230
IPP tag# for 77960-TA0-K020-M4: 0000334179
IPP tag# for 77960-TA0-X020-M4: 0000340281

Reoccurrence prevention: Development guideline changed for 11M. Deployment margin for [redacted] m/s door slam was increased from [redacted]% to [redacted]%.

Date	Factory	Line	Year	Model	Engine/Trans	Tracking Tag
6/5/2008	MAP	1	2008	ACCORD		1HGCP26848A[redacted]
6/9/2008	MAP	1	2008	ACCORD		1HGCP26878A[redacted]
6/5/2008	MAP	1	9999	UNKNOWN		Est date

Recommended Field Action

Handle under normal warranty due to low occurrence.

Countermeasure Effectiveness

The new threshold changed the deployment margin from [redacted]% to [redacted]% on the [redacted] m/s door slam test. Recreation testing shows that the new margin will eliminate the unexpected deployments caused by a hard closing of the door.

AH - Domestic			
Sales Division Engineer	**Sold Product Treatment**	**Product Treatment**	**Part Stock Change**
Service Action Report	**Service Bulletin Number**	**After Service Part Number**	
AH - Export			
Sales Division Engineer	**Sold Product Treatment**	**Product Treatment**	**Part Stock Change**
Service Action Report	**Service Bulletin Number**	**After Service Part Number**	
CH			
Sales Division Engineer	**Sold Product Treatment**	**Product Treatment**	**Part Stock Change**
Service Action Report	**Service Bulletin Number**	**After Service Part Number**	

Part Number List	Part Group/Subgroup List
77960 - SRS UNIT	-
77970 - SENSOR, SIDE IMPACT	-
78870 - MOD, R. SI CURT AB	-

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HONDA

11/10/2014

QUESTION 8

Q8-4_2014-05-22 GQC WTY Extension range expansion

REDACTED 20140521 GQC Doc_Side Airbag Inadvertent Deployment_E

03-04M Accord, 08M Accord for US Market Made by Css/HAM

Title: Accord Side Airbag Inadvertent Deployment (Additional affected vehicles)

QIS No : SDBA03100301, MV20080416135749, TA5A08051202

GQC Detailed Report

1. Proposal (Previous time)
2. Proposal (this time)
3. E-NASC / E-GQC results
4. Timeline
5. Additional affected vehicles
6. Detailed proposed action and schedule
7. Summary
8. Recurrence Prevention

＜Chronology＞
・GQC approval on 1/9/2014
After that additional affected VINs are necessary.
・E−NASC on 4/18/2014
・E−GQC on 5/12/2014

Today’s purpose:
Explain outline of agenda approved by E−NASC/E=GQC.

2014/05/22

AHサービス	HAM CIE	Css CIE
江口	渡辺	清水

1. Previous Proposal (Overview)

GQC Proposal on 2014/1/9
(Previous Proposal)

1. Customer Contention

The side airbag deploys when not expected.

2. Number of Occurrences

KA 2003 Accord – 112, 2004 Accord – 69, 2008 Accord 4dr – 200

KC 2003 Accord – 18, 2004 Accord – 8, 2008 Accord 4dr - 11

3. Causes of Occurrence

SRS system threshold setting too sensitive. Door slam or underbody contact can result in deployment.

4. Countermeasures

SRS calibration changed as running change in 2004 and 2008.

5. Market Action Proposal Based On Preliminary Court Approval

(1) Reimburse for prior inadvertent deployments that were not previously reimbursed for 03/04/08M (4dr only for 08) (90 day period)

(2) Warranty extension for 2008 Accord 4dr: repair future inadvertent deployments for a period of 2 years.

6. Reason for Proposal

To settle the class action lawsuit.

7. Action Details

Repair/reimburse members for confirmed occurrences.

8. Affected Range

KA/KC : 03～04 ACCORD、08 ACCORD 4D BCM

9. Number of affected vehicles

Past repair reimbursement (03/04/08M) : KA 253 units / KC 9 units

Warranty extension (08M only) : 308,217 units / KC 20,535 units

10. Cost of Market Action

KA: Up to $818,000 (Approximately JPY 84 million) / KC $35,1000 (Approximately JPY 3.6 million)

GQC approved settlement condition for class action on 1/9/2014.
<Proposal> 03/04/08M Accord : reimbursement / 08M Accord : Warranty extension for 2 yrs.

2. Proposal this time (Overview)

E-NASC Document on 2014/4/18
(Proposal this time)

1. Customer Contention

The side airbag deploys when not expected.

2. Number of Occurrences

KA 2003 Accord – 112, 2004 Accord – 69, 2008 Accord 4Dr – 200, 2009 Accord 4Dr BCM Css - 0

KC 2003 Accord – 18, 2004 Accord – 8, 2008 Accord 4dr - 11

3. Causes of Occurrence

SRS system threshold setting too sensitive. Door slam or underbody contact can result in deployment.

4. Countermeasures

SRS calibration changed as running change in 2004 and 2008.

5. Market Action Proposal Based On Preliminary Court Approval

(1) Reimburse for prior inadvertent deployments that were not previously reimbursed for 03/04/08M (4dr only for 08) (90 day period)

(2) Warranty extension for 2008 Accord 4dr: repair future inadvertent deployments for a period of 2 years.

6. Reason for Proposal

To settle the class action lawsuit.

7. Action Details

Repair/reimburse members for confirmed occurrences.

8. Affected Range

KA/KC : 03～04 Accord, 08 Accord 4Dr, 09 Accord 4Dr BCM Css

9. Number of affected vehicles

Past repair reimbursement (03/04/08M) : KA 253 units / KC 9 units

Warranty extension (08M and 09M BCM Css) : KA 308,765 units / KC 20,535 units

10. Cost of Market Action

KA: Up to $1.43 Million (Approximately JPY 150 million) / KC $76,204 (Approximately JPY 7.9 million)

Proposal this time: Add Css 09M BCM vehicles (548 units) for US market.
No other changes.

E-NASC Minutes
Revised on 4/18/14

NASC

Date : 12/19/2013
Revised 4/18/2014

NASC Committee Member: Present: H. Eguchi (NASC Chairman), Bruce Smith (AH-Service), Ken Dick (CH), K.Nishizawa (AH-PRO) K. Suzuki (HNAS), T. Yamamoto (HRA), N. Gruebmeyer (AH-Parts)

Meeting Minutes by T.Ota (AH-Service)

Title: Accord Side Airbag Inadvertent Deployment

Symptom: The side airbag deploys when not expected.

Market Occurrence: KA 381 cases
KC 37 cases

< Details >	03M	04M	08M	09M
KA	112	69	200	0
KC	18	8	11	

Occurrence Cause: SRS system threshold setting too sensitive. Door slam or underbody contact can result in deployment.

Affected units:

	KA	KC
Past repair	253	9
Warranty extention	308,765	20,535

< Details >	MY	KA	KC
Settlement	03/04/08M	253	9
Past repair reimbursement	08M	308,217	20,535
Warranty extension	09M BCM	548	

NASC Discussion: NASC agreed to the proposal of (1) Reimburse for prior repair not reimbursed for 03/04 2dr/4dr and 08 4dr Accord for 90 days period from the date of customer notification completion and (2) Warranty extension for 08 4dr Accord and 09 4dr BCM Accord for future inadvertent deployments for 2 years from the date of final court approval.

<u>NASC agreed to include 548 units of Css BCM vehicles on April 18, 2014.</u>

(1) Reimburse prior repair not reimbursed for 253 vehicles of 03/04/08 Accord for 90 days period from the date of customer notification completion.

(2) Warranty extension for 08/09 Css BCM Accord for future inadvertent deployments for 2 years from the date of court approval.

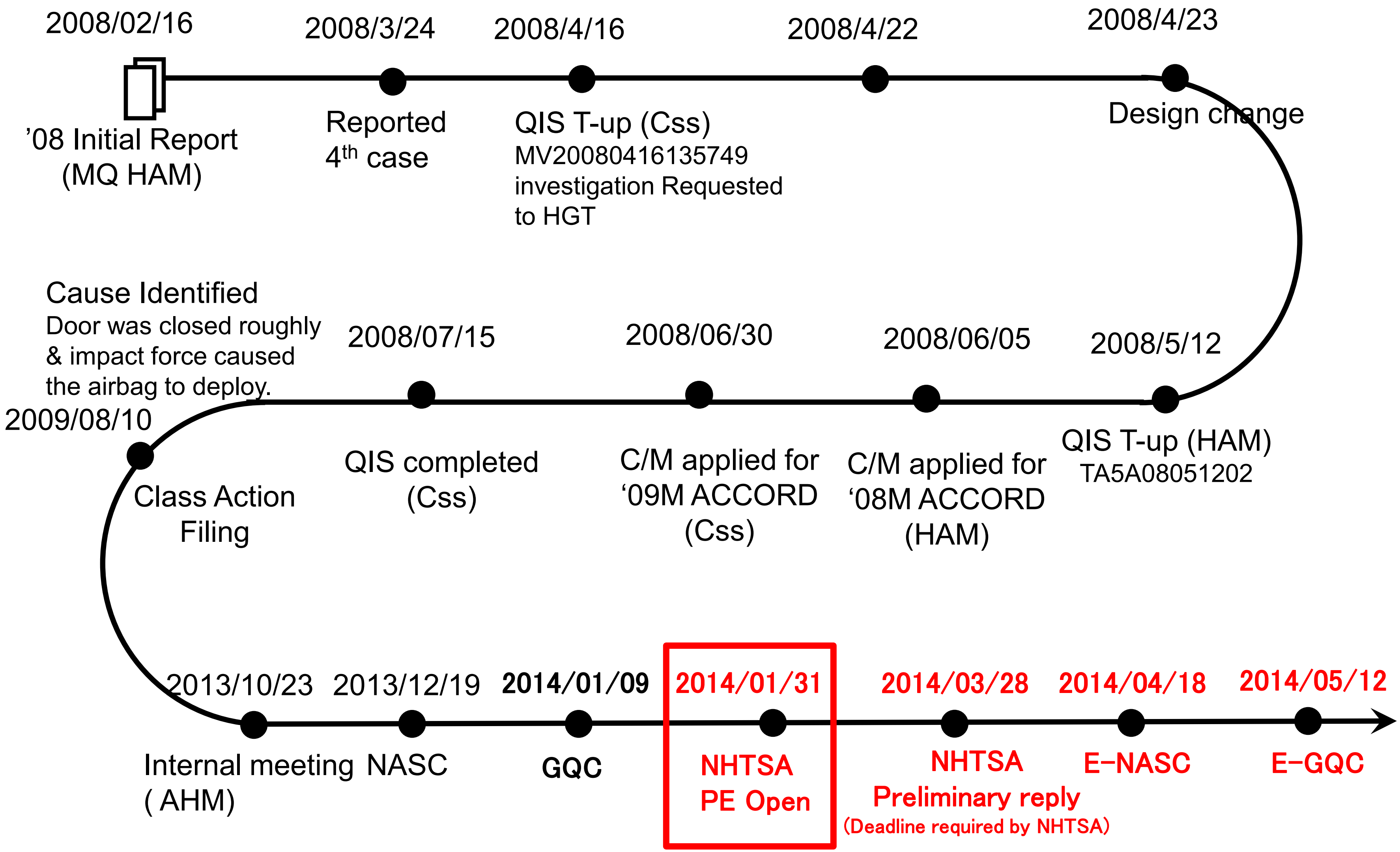
3. E-GQC Results

[redacted]

<u>E-GQC was held on 5/12/12014.</u>

E-GQC approved proposal that 548 units of 09M Css BCM vehicles to be added to the affected units. No need for recurrence proposal for this additional proposal.

4. Timeline (for 08M)



Focus on class action settlement for GQC approval on 1/9/2014.
However, NHTSA opened PE on 1/31/2014, then situation has changed.

5. Additional affected vehicles

Class vehicles summary

Low threshold deployments Determined by reviewing CRMS and Techline data.

Accord MYs	Production	Affected	Occurrences	Non-reimbursed	Warranty extension
2003 2dr	66,261	66,261	10	8	0
2003 4dr	230,429	230,429	102	88	0
2004 2dr	45,249	45,249	7	7	0
2004 4dr	227,178	227,178	62	56	0
2008 4dr	331,938	308,217*	200	94	308,217
2009 4dr (Css)	18,253	548** (BCM)	0	N/A	548
Total	919,308	877,882	381	253***	308,765****

Additional Proposal this time

Excluded previously
Additional proposal this time

*Countermeasure applied to SRS control unit during 2008 HAM production.

**Countermeasure applied to SRS control unit during 2009 Css Production.

***Class size is 253 vehicles, class members are eligible for reimbursement.

128 of 381 occurrences received AH assistance

Legal proposed class action settlement for 03M, 04M and 08M based on consideration of incident rates. 09M was not part of the settlement because the incident rate did not justify inclusion. However, NHTSA opened PE and situation has changed.=> Proposal to include 548 units.

6. Detailed proposed action and schedule

10-1 Market Action Proposal Proactive market action fro class action settlement

10-2 Reason for Proposal Market action will be conducted to address inadvertent deployments and settle a class action lawsuit.

10-3 Action details (1) Reimburse prior inadvertent deployments that were not previously reimbursed for 03/04/08M (90 day period)
(2) Warranty extension for 08 and 09 BCM Css : repair future inadvertent deployments for a period of 2 years.

10-4 Affected Range KA/KC : 03-04 Accord, 08 Accord 4Dr BCM, 09 Accord 4Dr BCM Css

10-5 Number of affected vehicles Past repair reimbursement (03/04/08M) : KA 253 units / KC 9 units
Warranty extension (08M and 09M BCM Css : 308,765 units / KC 20,535 units

10-6 Recurrence prevention Completed

10-7 Schedule of Events

	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15
NASC	★													
Preliminary Court Approval / 一次承認			★											
Class Notification /クラス通知						→								
Website Live / Webで告知					★									
Service Bulletin (preliminary)						★								
Final Court Approval/裁判所最終承認													★	
Service Bulletin (2008MY final)													★	
Service Bulletin (2009MY final)													★	
Claim Submission Process (prior deployments)過去発生の請求						→	→	→	→	→	→	→		
Claim Submission Process (future deployments)今後発生の請求													→	→
Reimbursement Process (prior deployments)過去発生分返金													→	→
Reimbursement Process (future deployments)今後発生分返金													→	→
Parts Arrangement/Procurement パーツ準備				→	→	→								
eNASC/eGQC (2009MY)					★	★								
2009MY Notification													→	

Timeline summary

Event date	Content
1-9-2014 GQC	・Proposal to GQC The settlement terms of the class action were proposed to GQC and GQC approved the proposal. ・We negotiated with the plaintiff side by limiting the affected models based on the failure rates. The 09M early production had no occurrences and we excluded those units from the class vehicles. A settlement was reached.
1-29-2014 PE issued	・To verify possibility of safety defect
3-31-2014 Preliminary response to PE	・Initial response to NHTSA for PE According to the GQC decision, it was explained that the problem was not a safety defect but AHM would conduct warranty extension and reimbursement for the past repairs in order to settle the class action. No response from NHTSA.
4-18-2014 E-NASC held	・E-NASC held It was judged that NHTSA would not accept the thinking of class action settlement which excludes the pre C/M units from the class vehicles. An agreement was reached to include 548 of the 09M pre C/M Css built units to the class vehicles.
5-12-2014 E-GQC held	・E-discussion held A proposal was made to add 548 of 09M Css built pre C/M units to the class vehicles.

Thank you for E-discussion & approving the addition of the C-ss built 09M (548 units) to the class vehicles.

8. Recurrence Prevention

[Honda in-house recurrence prevention for 03-04M]

	Issue	Measures	Schedule
Expansion	Add safing logic and LPF to SIS	Add this Safing logic to other models with TRW system equipped, and also add LPF to SIS step by step. ⇩ This countermeasure is applied to all 05 models and later.	Jan 2005

[Honda in-house recurrence prevention for 08M / 09M]

	Item	Action	Completion timing
Occurrence	Review OFF margin for strong door closing and reflect it in the setting	Verify OFF margin for strong door closing using models in market, and from the verification results, reflect sufficient margin setting in the set threshold. Newly set +[redacted]% from current +[redacted]%. ⇩ Reflect the setting guide in the preliminary specifications for models after 11M.	May 2007

END

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-4_2014-05-22 GQC WTY Extension range expansion

REDACTED 20140521 GQC Doc_Side Airbag Inadvertent Deployment_J

03-04M Accord, 08M Accord 北米 Css/HAM

Accordサイドエアバッグ展開不具合（対象範囲の追加）

QIS No : SDBA03100301, MV20080416135749, TA5A08051202

報告案件

1. 前回提案概要
2. 今回提案概要
3. E-NASC、GQC（E審議）結果
4. 経緯
5. 対象範囲の追加
6. 措置提案内容及び展開計画
7. まとめ
8. 再発防止

＜経緯＞
・2014年1月9日 GQC承認
　その後対象範囲追加が必要になり
・2014年4月18日　E-NASC承認
・2014年5月12日　E審議承認

本日の趣旨：E審議案件の概要報告

2014/05/21

AHサービス	HAM CIE	Css CIE
江口	渡辺	清水

[redacted]

[redacted]

3. E-NASC結果

E-NASC議事録
14年4月18日

NASC

Date : 12/19/2013
Revised 4/18/2014

NASC Present:

Committee Member: H. Eguchi (NASC Chairman), Bruce Smith (AH-Service), Ken Dick (CH), K.Nishizawa (AH-PRO)
K. Suzuki (HNAS), T. Yamamoto (HRA), N. Gruebmeyer (AH-Parts)

Meeting Minutes by T.Ota (AH-Service)

Title: Accord Side Airbag Inadvertent Deployment

Symptom: The side airbag deploys when not expected.

Market Occurrence: KA 381 cases
KC 37 cases

< Details >	03M	04M	08M	09M
KA	112	69	200	0
KC	18	8	11	

Occurrence Cause: SRS system threshold setting too sensitive. Door slam or underbody contact can result in deployment.

Affected units:

	KA	KC
Past repair	253	9
Warranty extention	308,765	20,535

< Details >	MY	KA	KC
Settlement	03/04/08M	253	9
Past repair reimbursement	08M	308,217	20,535
Warranty extension	09M BCM	548	

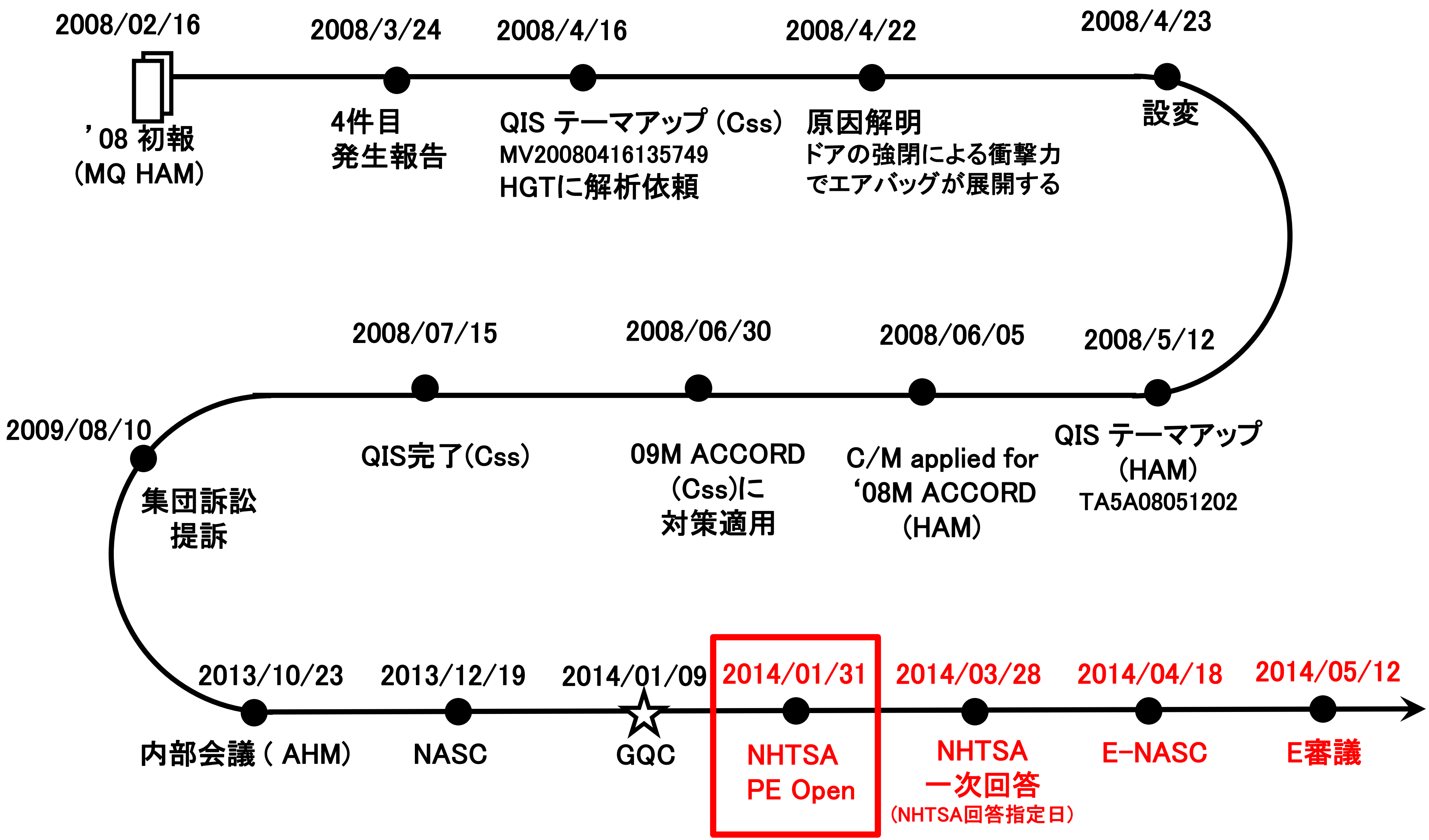
NASC Discussion: NASC agreed to the proposal of (1) Reimburse for prior repair not reimbursed for 03/04 2dr/4dr and 08 4dr Accord for 90 days period from the date of customer notification completion and (2) Warranty extension for 08 4dr Accord and 09 4dr BCM Accord for future inadvertent deployments for 2 years from the date of final court approval.

[redacted]

3. E審議結果

[redacted]

4. 経緯　～08M ACCORD～



2014年1月9日のGQCまでは、クラスアクション和解対応のために推進。
しかしながら、2014年1月31日、NHTSAからPEが発行され、事態が変化。

5. [redacted]

Accord MY	製造台数	対象台数	発生件数	有償修理件数	保証延長台数
2003 2dr	66,261	66,261	10	8	0
2003 4dr	230,429	230,429	102	88	0
2004 2dr	45,249	45,249	7	7	0
2004 4dr	227,178	227,178	62	56	0
2008 4dr	331,938	308,217*	200	94	308,217
今回追加提案 2009 4dr (Css)	18,253	548** (BCM)	0	N/A	548
Total	919,308	877,882	381	253***	308,765****

[redacted]

[redacted]

	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15
NASC	★													
Preliminary Court Approval / 一次承認			★											
Class Notification /クラス通知						→								
Website Live / Webで告知					★									
Service Bulletin (preliminary)						★								
Final Court Approval/裁判所最終承認													★	
Service Bulletin (2008MY final)													★	
Service Bulletin (2009MY final)													★	
Claim Submission Process (prior deployments)過去発生の請求						→	→	→	→	→	→	→		
Claim Submission Process (future deployments)今後発生の請求													→	→
Reimbursement Process (prior deployments)過去発生分返金													→	→
Reimbursement Process (future deployments)今後発生分返金													→	→
Parts Arrangement/Procurement パーツ準備				→	→	→								
eNASC/eGQC (2009MY)					★	★								
2009MY Notification													→	

[redacted]

8. 再発防止

[redacted]

以上

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-3_Control No. 90-40

Q8-3_20140109 030408 Acc SAB [GQC]_English_Redacted

03-04M Accord, 08M Accord for US Market Made by Css/HAM

Title: Accord **Side Airbag Inadvertent Deployment**

QIS No : SDBA03100301, MV20080416135749, TA5A08051202

1. NASC results
2. Overview
3. Timeline
4. Number of occurrences
5. 03-04M Analysis results and C/M
6. 08M Analysis results and C/M
7. HNA Settlement
8. Canada situation
9. Cost Summary
10. Detailed proposed action and schedule
11. Prevention of reoccurrence

GQC

1/9/2014

AH Service	HAM CIE	Css CIE
Eguchi	Watanabe	Shimizu

1. NASC Discussion Results

NASC Minutes On 12/19/13

NASC

Date : 12/19/2013
Revised 12/20/2013

NASC Committee Member:

Present:
H. Eguchi (NASC Chairman), Bruce Smith (AH-Service), K.Nishizawa (AH-PRO)
K. Suzuki (HNAS), T. Yamamoto (HRA), N. Gruebmeyer (AH-Parts)

Meeting Minutes by T.Ota (AH-Service)

Not Present:
Ken Dick (CH)

Title: Accord Side Airbag Inadvertent Deployment

Symptom: The side airbag deploys when not expected.

Market Occurrence:
KA 381 cases
KC 37 cases

	03 Accord	04 Accord	08 Accord
KA	112	69	200
KC	18	8	11

Occurrence Cause: SRS system threshold setting too sensitive. Door slam or underbody contact can result in deployment.

Affected units:
KA 877,334 units
KC 70,334 units

	03 Accord	04 Accord	08 Accord
KA	296,690	272,427	308,217
KC	35,583	14,216	20,535

NASC Discussion: NASC agreed to the proposal of (1) Reimburse for prior repair not reimbursed for 03/04 2dr/4dr and 08 4dr Accord for 90 days period from the date of customer notification completion and (2) Warranty extension for 08 4dr Accord for future inadvertent deployments for 2 years from the date of final court approval.

NASC agreed to the following class action settlement condition.
(1) Reimburse prior repair not reimbursed for 253 vehicles of 03/04/08 Accord for 90 days period from the date of customer notification completion.
(2) Warranty extension for 08 Accord for future inadvertent deployments for 2 years from the date of final court approval.

2. Overview

1. Customer Contention

The side airbag deploys when not expected. (Side airbag deployment is not safety issue.)

2. Number of Occurrences

KA 2003 Accord – 112, 2004 Accord – 69, 2008 Accord 4dr – 200

KC 2003 Accord – 18, 2004 Accord – 8, 2008 Accord 4dr - 11

3. Causes of Occurrence

SRS system threshold setting too sensitive. Door slam or underbody contact can result in deployment.

4. Countermeasures

SRS calibration changed as running change in 2004 and 2008.

5. Market Action Proposal Based On Preliminary Court Approval

(1) Warranty extension for 2008 Accord 4dr: repair future inadvertent deployments for a period of 2 years

(2) Reimburse for prior inadvertent deployments that were not previously reimbursed for 03/04/08M (4dr only for 08) (90 day period)

6. Reason for Proposal

To settle the class action lawsuit.

7. Action Details

Repair/reimburse members for confirmed occurrences.

8. Affected Range

KA/KC : 03～04 ACCORD、08 ACCORD 4D BCM

9. Number of affected vehicles

Warranty extension (08M only) : 308,217 units / KC 20,535 units

Past repair reimbursement (03/04/08M）: KA 253 units / KC 9 units

10. Cost of Market Action

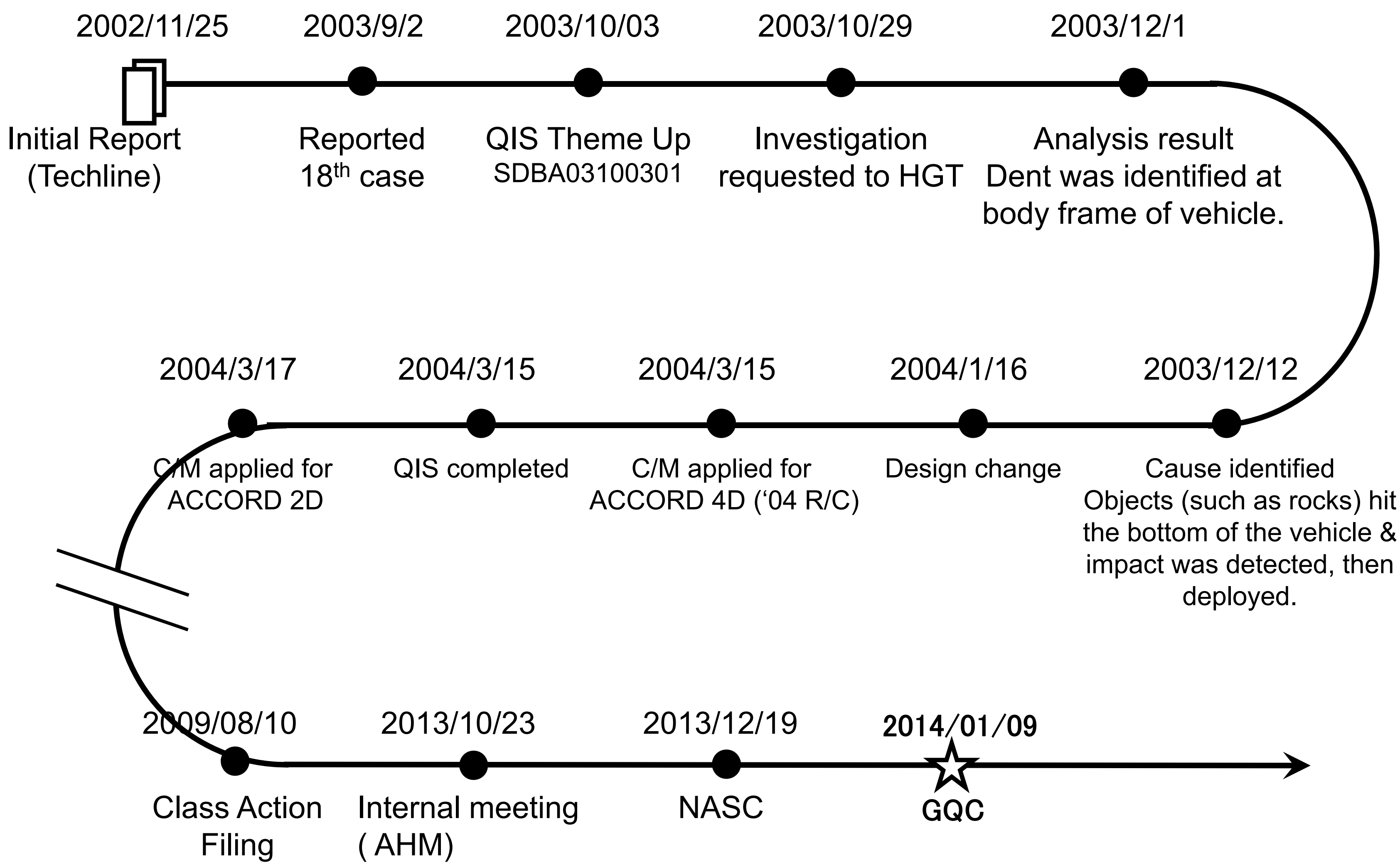
Total : $ 1.5 million (Approximately JPY 1.6 oku)

KA: Up to $1.43 Million (Approximately JPY 150 million) / KC $ 0.07 Million (Approximately JPY 8.0 million)

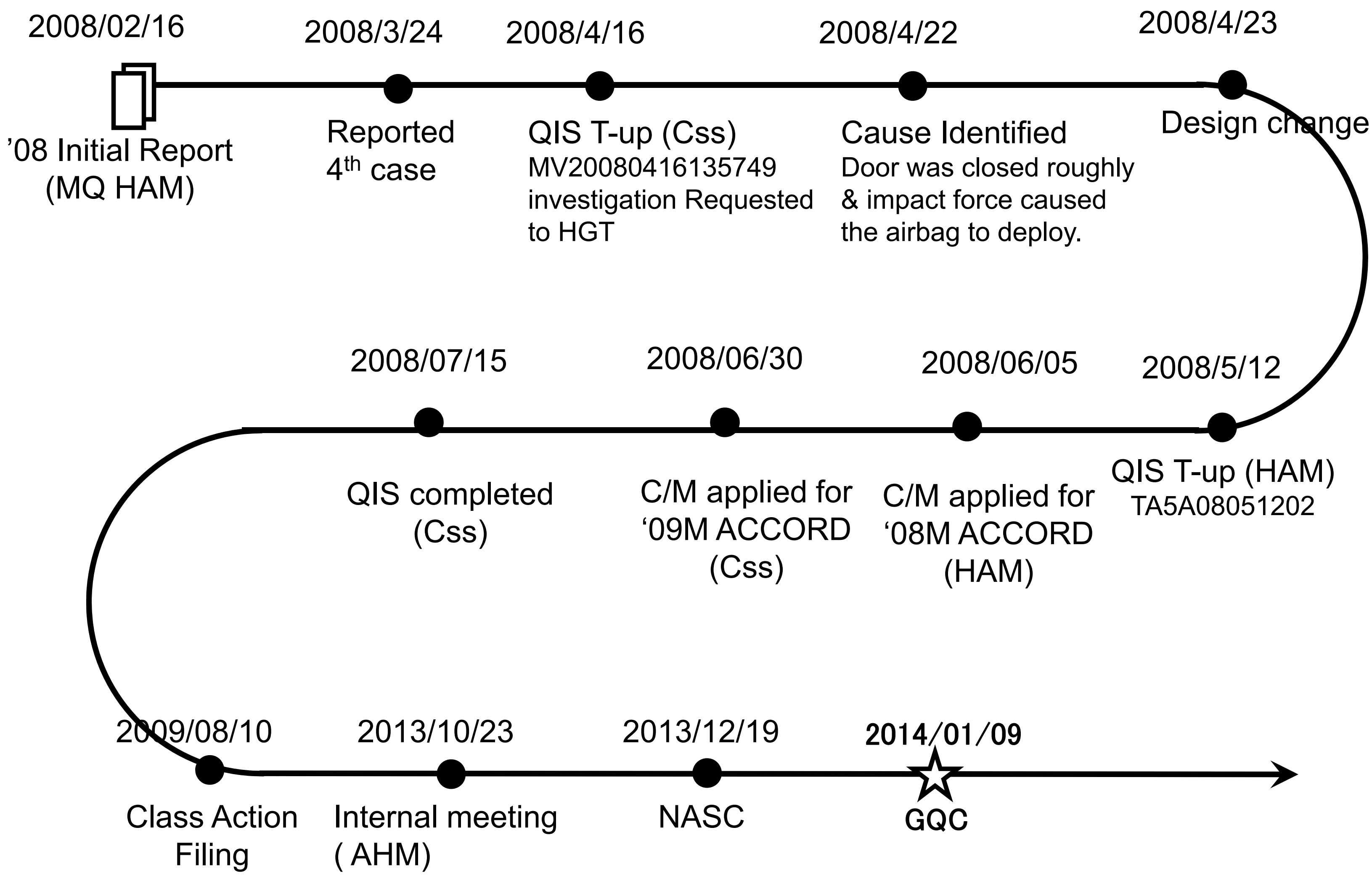
Up to $1.19 Million (Approximately 122.3 million yen) – Plaintiffs' Attorney fee

Up to $5,000 (Approximately 514,000 yen) – Incentive award for named Plaintiff

3. Timeline (for 03-04M)



3. Timeline (for 08M)



4. Number of occurrences

2000 – 2012 Accord model years, Occurrences based on CRMS and Techline data.
Year models included in class action are determined by HNA negotiation.

	00MY 2D	00MY 4D	01MY 2D	01MY 4D	02MY 2D	02MY 4D	03MY 2D	03MY 4D	04MY 2D	04MY 4D	05MY 2D	05MY 4D	06MY 2D	06MY 4D
Total Sales Volume	57,056	138,024	62,294	192,986	58,778	170,161	66,261	230,429	45,249	227,178	47,190	321,268	37,586	288,011
Number of the customer who replaced by Warranty or Goodwill	0	12	0	14	0	2	2	14	0	6	1	2	0	2
Number of the customer who replaced by own money	1	37	1	59	3	5	8	88	7	56	2	26	2	18
Total	1	49	1	73	3	7	10	102	7	62	3	28	2	20
Threshold	** For the '03/'04MYs, the threshold remained the same, but changes were made to the units by altering the safing logic, adding more filtering to the SIS, and making corresponding algorithm and calibration changes to account for underbody impacts.													
Incident Rate	0.0018%	0.0355%	0.0016%	0.0378%	0.0051%	0.0041%	0.0151%	0.0443%	0.0155%	0.0273%	0.0064%	0.0087%	0.0053%	0.0069%

381

	07MY 2D	07MY 4D	08MY 2D	08MY 4D	09MY 2D	09MY 4D	10MY 2D	10MY 4D	11MY 2D	11MY 4D	12MY 2D	12MY 4D
Total Sales Volume	32,373	376,426	47,536	331,938	38,936	273,374	32,319	247,106	26,009	193,563	10,246	82,883
Number of the customer who replaced by Warranty or Goodwill	0	8	2	106	3	5	0	0	0	0	1	0
Number of the customer who replaced by own money	0	25	10	94	1	4	2	2	1	0	0	0
Total	0	33	12	200	4	9	2	2	1	0	1	0
Threshold	** Door slam issues for the 08MY 4D. The original calibration for door slams resulted in an immunity level of 1.3X at 5 m/s. Testing for the fix was performed, resulting in an immunity range of 1.24X – 2X at door slam speeds of 5.5 m/s - 6.6 m/s. The change was successful.											
Incident Rate	0.0000%	0.0088%	0.0252%	0.0649%	0.0103%	0.0033%	0.0062%	0.0008%	0.0038%	0.0000%	0.0098%	0.0000%

4. Number of occurrences

Class vehicles summary

Low threshold deployments Determined by reviewing CRMS and Techline data.

Accord MYs	Production	Affected	Occurrences	Non-reimbursed	Warranty extension
2003 2dr	66,261	66,261	10	8	0
2003 4dr	230,429	230,429	102	88	0
2004 2dr	45,249	45,249	7	7	0
2004 4dr	227,178	227,178	62	56	0
2008 4dr	331,938	308,217*	200	94	308,217
Total	901,055	877,334	381	253**	308,217***

*Countermeasure applied to SRS control unit during 2008 production.

**Class size is 253 vehicles, class members are eligible for reimbursement.

128 of 381 occurrences received AH assistance.

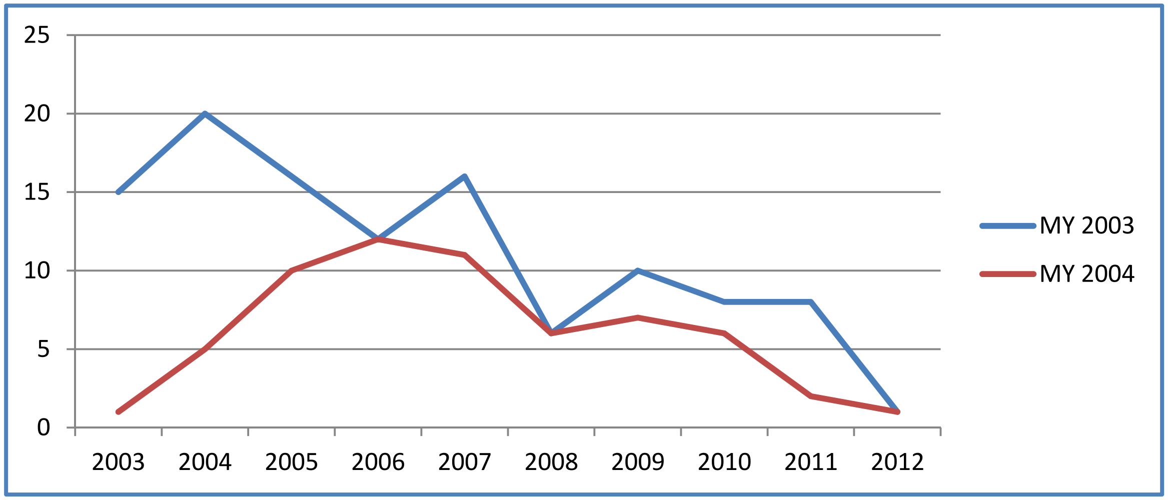
***Class members eligible for 2yr warranty extension.

Data as of May 31, 2013

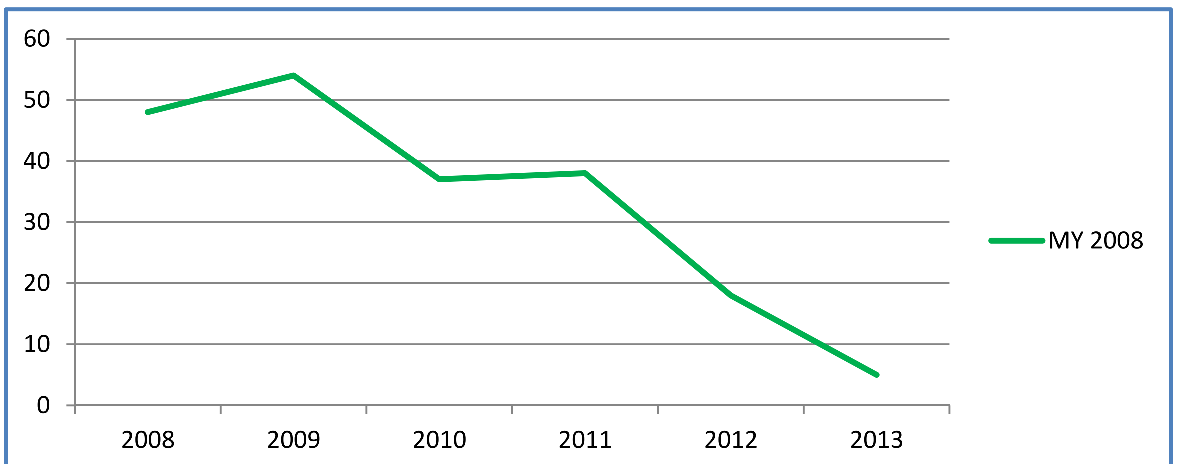
4. Number of occurrences

Number of occurrences per calendar year.
Occurrences are combined reimbursed and non-reimbursed.
Occurrences data was created by reading CRMS and Techline contacts.

2003, 2004 Trend
Occurrences by calendar year.



2008 Trend
Occurrences by calendar year.



Occurrence data shows decreasing trend year by year. Past 3 years average is 23/yr.

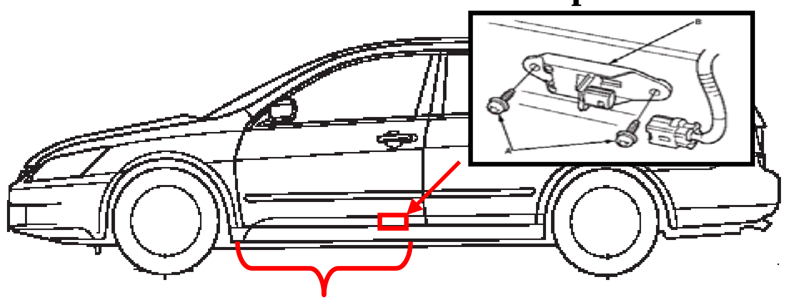
5. 03-04M Analysis and C/M

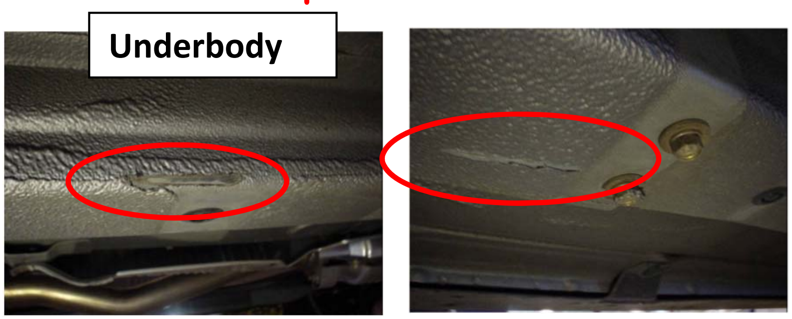
5-1 Returned part analysis results

- **1HGCM66553A[redacted] ACCORD 4D 03M**
- **While driving on a highway at 60mph, side airbag and seat-belt pretensioner deployed without collision.**
- **Occurrence date: July 30, 2003**

- Vehicle analysis result

SIS : Side Impact Sensor

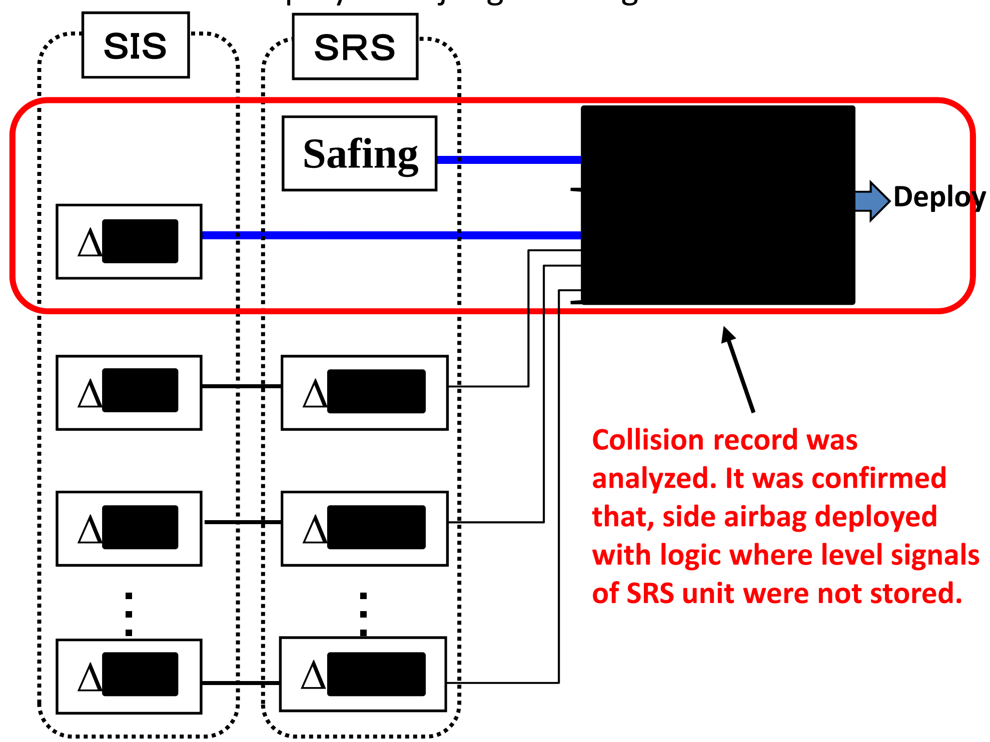




Floor frame and side sill are confirmed to be deformed.

- SRS unit data analysis result

■ SRS unit deployment judgment logic



2 signals (SIS impact signal and SRS safing) were stored in this vehicle's data.
(Level signals of SRS unit were not stored.)

This vehicle did not collide but side airbag deployed due to [redacted] logic"
which was a combination of SIS [redacted] and SRS unit safing ON.

5. 03-04M Analysis and C/M

5-2 Recreation testing results

ACCORD 4D 03M Hammering testing results

Hammering point	Short safing duration [redacted]msec	Long safing duration [redacted]msec	SIS ΔV[redacted]	System result
Side sill	ON	OFF	ON	Deployed
Floor frame	ON	OFF	OFF	Not deployed

Side sill

[redacted]

Floor frame

[redacted]

"Safing ON" is activated by short safing [redacted] long safing.

[redacted]mSec (Long safing)

[redacted]mSec (Short safing)

[redacted]

Safing ON

At the hammering testing, "safing ON" was activated by short safing ([redacted]msec).

- "Safing ON" and "side airbag deployment" were recreated by hitting the side sill.
  We assume that these failures could have been recreated while driving even if hitting other areas.
- Short safing was on by hitting the side sill and the floor frame.
- Long safing was not on even if hitting the side sill and the floor frame.
- This vehicle did not collide, but SIS judged as Δ[redacted].

"Safing ON" and "side airbag deployment" were recreated at the hammering testing.

5. 03-04M Analysis and C/M

5-3 Occurrence mechanism

SIS sometimes judges as ΔV7 due to impact to underbody

SRS unit sometimes judges as "safing ON" due to impact to underbody

① Impact due to flying pebbles etc. is applied to underbody

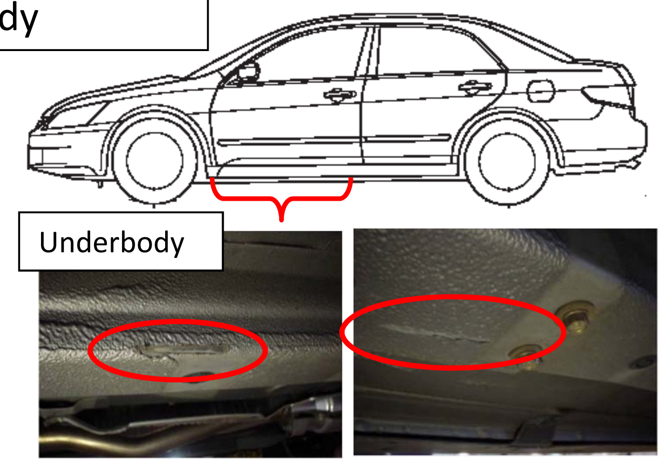
② Impact value input in SIS is more than Δ[redacted]

③ Safing is on in SRS unit

AND

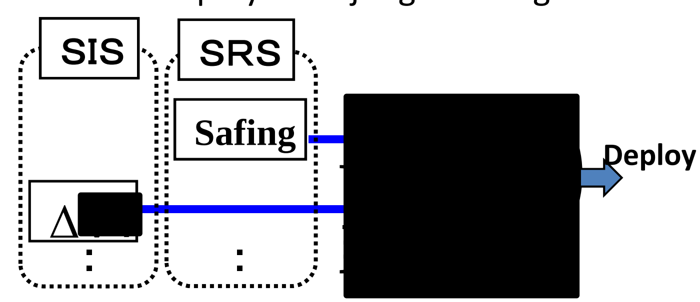
SRS unit judges as "collision"

Side airbag and side-curtain air-bag deploy while driving without collision



① Impact due to flying pebbles etc. is applied.

■ SRS unit deployment judgment logic



② Impact value input in SIS is more than Δ[redacted]

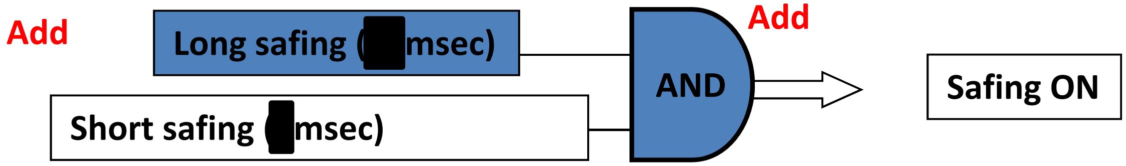
③ Safing is on in SRS unit

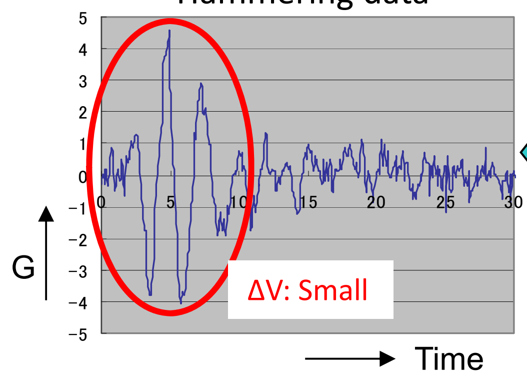
5. 03-04M Analysis and C/M

5-4 Countermeasure

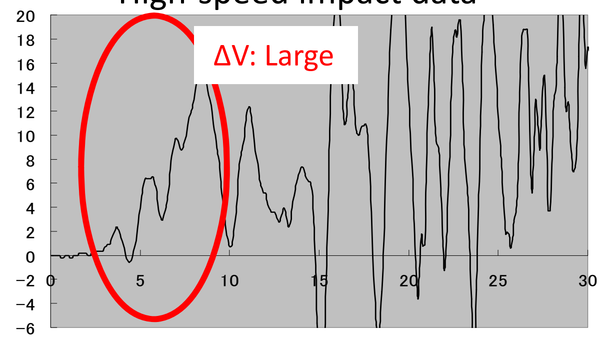
①C/M for SRS unit

Add long safing in short safing logic.





Different



This hammering data shows waveform of vibration. ΔV can be reduced by increasing duration.

② C/M for SIS

Add LPF (Low-Pass-Filter) to reduce a probability of Δ[redacted]

●Without LPF

Impact data

Hammering data

Calculated value

[redacted]

●With LPF

Impact data

Hammering da

[redacted]

By adding LPF,
The difference can be large between the 2 waveforms (hammering data and impact data).
(Toughness increases by 50%)

5. 03-04M Analysis and C/M

5-5 Countermeasure effect study

・Hammering test effect results

		Safing logic (OFF margin)	SIS [redacted]	System results
Test No1	**ACCORD 4D 03M** **Pre-countermeasure**	ON	ON	Deployed
	ACCORD 4D 03M **Post-countermeasure**	OFF (200%, or higher)	ON	Not deployed
	ACCORD 2D 03M	OFF (200%, or higher)	ON (ON is possible.)	Not deployed
Test No2	**ACCORD 4D 03M** **Pre-countermeasure**	ON	ON	Deployed
	ACCORD 4D 03M Post-countermeasure	OFF (181%)	ON	Not deployed
	ACCORD 2D 03M	OFF (132%)	ON (ON is possible.)	Not deployed

After-C/M'ed logic ensures sufficient off margin which is more than Accord 2D.

6. 08M Analysis and C/M

6-1 Analysis results

- **1HGCP26718A[redacted] ACCORD 4D 08M**
- **Customer experiences an SRS deployment when the front door is closed.**
- **Occurrence date: May 18, 2008**

▪Appearance of the vehicle

[redacted]

Deformation due to collision is not confirmed.

▪SRS unit data recorded

▪No defects.

▪There is a record showing SRS unit and R-side B-SIS judged the vehicle as collided then airbag deployed.

[redacted]

SRS unit

Right B-SIS

▪SRS unit record G data

Collision detection

[redacted]

The collision history and the record G data show that the SRS unit judged the vehicle as collided so side airbag and side-curtain air-bag deployed.
=> The airbag deployed based on normal collision detection.

Although the vehicle did not have an accident,
the SRS unit detected collision and airbag deployed.

6-2 Recreation testing results

Recreation testing in strong door closing mode

1: Purpose

Conduct recreation testing in strong door closing mode which is more than required door closing speed ([redacted]m/s) to check if the air bag deploys or not.

2: Test method:

08M ACCORD for North American market (produced by MAP)
Use a DANKAKU vehicle and close door(s) strongly.

3: Test results (under some test conditions)

Impacted side	Speed	Test car condition	Collision detection
-	[redacted] m/s	[redacted]	OFF
-	[redacted] m/s	↑	OFF
L	[redacted] m/s	[redacted]	OFF
L	[redacted] m/s	↑	OFF
L	[redacted] m/s	↑	ON
L	[redacted] m/s	↑	ON
L	[redacted] m/s	[redacted]	OFF
R	[redacted] m/s	[redacted]	OFF
R	[redacted] m/s	↑	ON
R	[redacted] m/s	↑	ON
R	[redacted] m/s	↑	OFF
R	[redacted] m/s	↑	OFF
R	[redacted] m/s	↑	OFF
R	[redacted] m/s	[redacted]	OFF
R	[redacted] m/s	↑	ON
R	[redacted] m/s	[redacted]	ON
R	[redacted] m/s	↑	OFF
R	[redacted] m/s	[redacted]	ON
R	[redacted] m/s	↑	ON
R	[redacted] m/s	↑	OFF

It was confirmed that SRS unit judged the vehicle as collided by strong door closing (more than [redacted]m/s).

Failure was recreated by closing door strongly (more than [redacted]m/s).

THIS PAGE CONTAINS BUSINESS CONFIDENTIAL INFORMATION

6. 08M Analysis and C/M

6-3 Causal analysis

・Set threshold before C/M (08M ACCORD 4D)

[redacted]

On ACCORD 4D, OFF margin is ensured by [redacted]% in A requirement mode (Strong door closing of [redacted] m/s) and T-TTF of SINCAP and SICE is ensured.

・Comparison with other models

Setting results

MY	Model	Speed	OFF margin
05	Accord 2Dr TS-X RL		[redacted]
06	CIVIC 4Dr CIVIC 2Dr		
07	CR-V US Fit	[redacted] m/s	
08	Accord 4Dr Accord 2Dr TS-X		
09	US Fit		

*** OFF margin target [redacted]%**

ACCORD 4D's OFF margin is less than other models.
On other models, OFF margin of more than [redacted]% is ensured with strong door closing of [redacted] m/s.

On 08M ACCORD 4D, OFF margin is insufficient against strong door closing.

6-4 Occurrence mechanism

OFF margin is insufficient against strong door closing

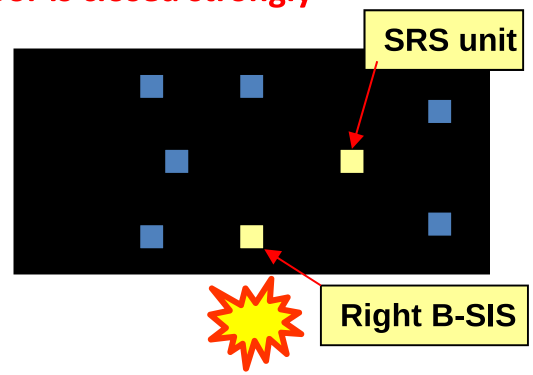
① Door is closed strongly

② Shock value which exceeds the collision detection threshold is input in SRS unit and B-SIS

SRS unit judges the vehicle as collided

When a door is closed, side airbag and side-curtain air-bag deploy

① Door is closed strongly



Strong door closing (More than [redacted] m/s)

② Shock input which exceeds the collision detection threshold

Collision detection

[redacted]

SRS unit record G data

6-5 Countermeasure

Countermeasure

Modify the threshold of collision detection.

SIS1_L[redacted]

[redacted]

C/M effectiveness verification

Recreation testing results
with the modified threshold.

Impacted side	Speed	Test car condition	Old threshold	New threshold
-	[redacted] m/s	[redacted]	OFF	OFF
-	[redacted] m/s	[redacted]	OFF	OFF
L	[redacted] m/s	[redacted]	OFF	OFF
L	[redacted] m/s	↑	OFF	OFF
L	[redacted] m/s	↑	ON	OFF
L	[redacted] m/s	↑	ON	OFF
L	[redacted] m/s	[redacted]	OFF	OFF
R	[redacted] m/s	[redacted]	OFF	OFF
R	[redacted] m/s	↑	ON	OFF
R	[redacted] m/s	↑	ON	OFF
R	[redacted] m/s	↑	OFF	OFF
R	[redacted] m/s	↑	OFF	OFF
R	[redacted] m/s	↑	OFF	OFF
R	[redacted] m/s	[redacted]	OFF	OFF
R	[redacted] m/s	↑	ON	OFF
R	[redacted] m/s	[redacted]	ON	OFF
R	[redacted] m/s	↑	OFF	OFF
R	[redacted] m/s	[redacted]	ON	OFF
R	[redacted] m/s	↑	ON	OFF
R	[redacted] m/s	↑	OFF	OFF

- OFF margin is ensured [redacted] % with strong door closing of [redacted] m/s.
- Collision detection is OFF by the modified threshold.
- Airbag deployment timing was [redacted] ms late at the side impact testing, but there was no problem in passenger protection performance.

Honda North America, Inc.
Law Department

SIDE AIRBAG INADVERTENT DEPLOYMENT PRESENTATION

Presented by:
Jim Oliva
Senior Counsel
December 19, 2013

Background

Case Name	[redacted], et al. v. AHM, Case No. 5:09-cv-01517-JZ–OP (C.D. Cal.)
Suit Filed	August 10, 2009
Jurisdiction	United States District Court for the Central District of California, Riverside Division
Product	Honda Accords with side airbags (Finally subject models were limited to 00-12MY Accord)
Allegation	The side airbag system in Accords is defective in that it is prone to inadvertently deploy in circumstances not involving a crash or collision
Name of the Defendants	American Honda Motor Co., Inc.
Honda Counsel	Mark S. Mester, Latham & Watkins LLP Derek S. Whitefield, Dykema Gossett, PLLC

Terms of tentative settlement

Who	Benefit
Current owners of ’08 Accord (sedan only) who have a future inadvertent deployment of side AB in the next 2 years.	Eligible to receive no cost side AB replacement at authorized Honda dealership.
Past and current owners of ’03, ’04 and ’08 Accords who previously had inadvertent deployment of side AB (sedan only for ’08 MY).	(A) No cost side AB replacement with proof of inadvertent deployment or (B) reimbursement from Honda for out-of-pocket expenses if customer paid for replacement (with proof of reimbursable deployment).

Repair Cost Estimate Projection for Future Deployments

Affected vehicle population	Estimated Occurrences, (25 per year x 2years)	Average repair cost per vehicle (average cost of warranty/goodwill repairs per AHM’s records is $2,632.87)
308,217	50	$2,700

Terms of tentative settlement

Who	Benefit
Current owners of '08 Accord (sedan only) who have a future inadvertent deployment of side AB in the next 2 years.	Eligible to receive no cost side AB replacement at authorized Honda dealership.
Past and current owners of '03, '04 and '08 Accords who previously had inadvertent deployment of side AB (sedan only for '08 MY).	(A) No cost side AB replacement with proof of inadvertent deployment or (B) reimbursement from Honda for out-of-pocket expenses if customer paid for replacement (with proof of reimbursable deployment).

Repair Cost Estimate Projection for Prior Deployments

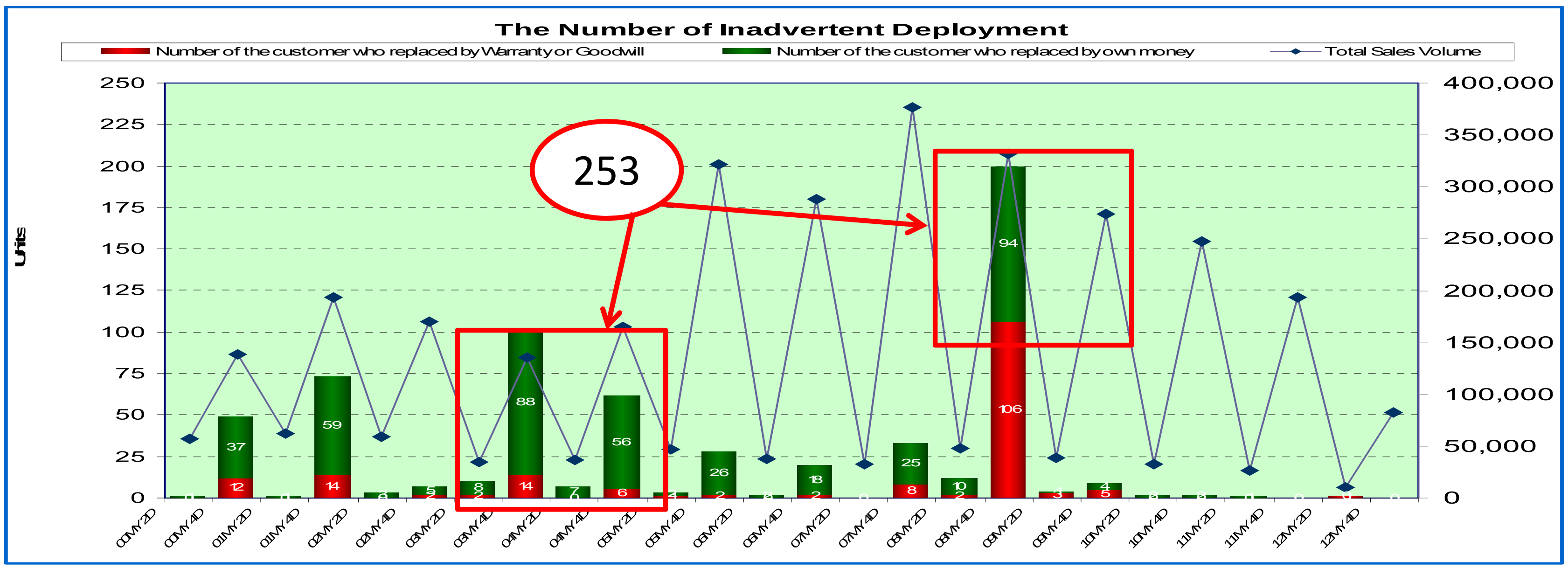
Affected vehicle population	Affected vehicle population with no reimbursement	Average repair cost per vehicle (average cost of warranty/goodwill repairs per AHM's records is $2,632.87)
381	253	$2,700

Reimbursement Estimate for Prior Deployment

A total of 381 occurrences were identified, 253 occurrences were not reimbursed.

Claim-in Percentage	Quantity	Repair Cost	Total Qty x cost
100%*	253	$2,700.00	$683,100.00
67.5%	170.775	$2,700.00	$461,092.50
50%	126.5	$2,700.00	$341,550.00

* actual claim-in will be lower.



Reimbursement Process

Claim Form

[redacted]

+

Receipt

[redacted]

- ✓ Class Member complete the form and submit a reimbursement form along with the sales receipt to the Reimbursement Center .

Claim Center

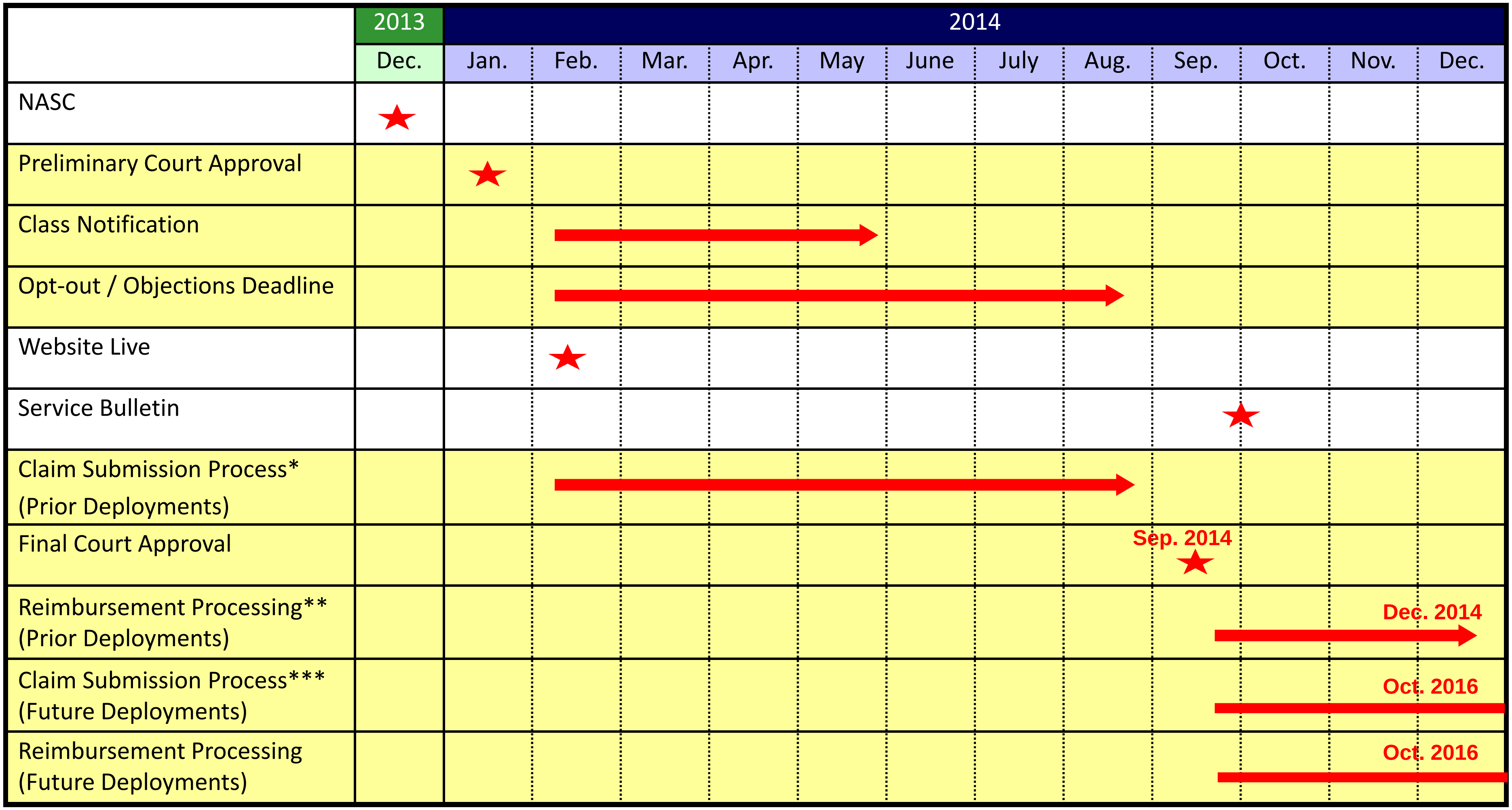
[redacted]

Reimbursement check is sent to the customer

- ✓ The claim center will review the receipt and the form. If proper documentation is submitted, the customer will be entitled to receive reimbursement based on the cost of the repair.
- ✓ Once the final approval is granted by the court, the claim center will process a check for the customer.

7. HNA Settlement

7-6 Future Schedule



(*) Customer must submit a claim within 90 days after mailing of class notice is completed to be eligible for reimbursement of prior deployment.

(**) Payments to be made within 75 days of final court approval, assuming no appeal. If appeal is made, the dates can be pushed back by approximately 18 months.

(***) Two year claims period for future deployment starts to run from the effective date of the settlement, which is 30 days after court's final approval, assuming no appeal.

7. HNA Settlement

7-7 US Cost summary

Repair Cost Estimate Projection for Future Deployments			
Affected vehicle population	Estimated Occurrences, (25 per year x 2years)	Average repair cost per vehicle (average cost of warranty / goodwill repairs per AHM's records is $2,632.87)	Projected total repair cost , (est. 25 claims x 2 years x $2700.00)
308,217	50	$2,700.00	$135,000

Repair Cost Estimate Projection for Prior Deployments			
Affected vehicle population	Affected vehicle population with no reimbursement	Average repair cost per vehicle (average cost of warranty / goodwill repairs per AHM's records is $2,632.87)	Total (Based on 253 repairs)
381	253	$2,700.00	$683,100

- American Honda has agreed to not object to the Court awarding:
  - Up to $1,190,000 in attorneys' fees and costs to Plaintiffs' counsel
  - Up to $5,000 total in incentive awards to the named Plaintiffs
  - US estimated mailing cost $617,395
  - US market action cost calculation $135,000 + $683,000 + $617,395 = $1,435,495

US market action cost is $1.4 million (≒ approximately JPY 1.5 oku)
Other class action cost for plaintiff side is $1.19mil (≒approx JPY 1.2 oku)

8. Canada Situation - 8-1 Number of occurrences

Low threshold deployments Determined by reviewing CR, Tech-line and Warranty data.

Accord MYs	Production	Affected	Occurrences	Non-reimbursed	Warranty extension
2003 2dr	6,122	6,122	0	NA	NA
2003 4dr	29,461	29,461	18	7	0
2004 2dr	1,739	1,739	0	0	0
2004 4dr	12,477	12,477	8	1	0
2008 4dr	22,832	20,535*	11	1	20,535
Total	72,631	70,334	37	9	20,535

*Countermeasure applied to SRS control unit during 2008 production.

No class action on this issue in Canada, but Canada will see same class action once settled in the US.
CH needs same market action as US. (CH legal comment)

Terms of tentative settlement

Who	Benefit
Current owners of ’08 Accord (sedan only) who have a future inadvertent deployment of side AB in the next 2 years.	Eligible to receive no cost side AB replacement at authorized Honda dealership.
Past and current owners of ’03, ’04 and ’08 Accords who previously had inadvertent deployment of side AB (sedan only for ’08 MY).	(A) No cost side AB replacement with proof of inadvertent deployment or (B) reimbursement from Honda for out-of-pocket expenses if customer paid for replacement (with proof of reimbursable deployment).

Repair Cost Estimate Projection for Future Deployments		
Affected vehicle population	Estimated Occurrences, (11 / 6 years = 2 per year x 2years)	Average repair cost per vehicle (average cost of warranty/goodwill repairs per AHM’s records is $2,632.87)
20,535	4	$2,700

Terms of tentative settlement

Who	Benefit
Current owners of ’08 Accord (sedan only) who have a future inadvertent deployment of side AB in the next 2 years.	Eligible to receive no cost side AB replacement at authorized Honda dealership.
Past and current owners of ’03, ’04 and ’08 Accords who previously had inadvertent deployment of side AB (sedan only for ’08 MY).	(A) No cost side AB replacement with proof of inadvertent deployment or (B) reimbursement from Honda for out-of-pocket expenses if customer paid for replacement (with proof of reimbursable deployment).

Repair Cost Estimate Projection for Prior Deployments		
Affected vehicle population	Affected vehicle population with no reimbursement	Average repair cost per vehicle (average cost of warranty/goodwill repairs per AHM’s records is $2,632.87)
37	9	$2,700

8. Canada 8-4 Canada Cost summary

Repair Cost Estimate Projection for Future Deployments			
Affected vehicle population	Estimated Occurrences, (11 / 6 = 2 per year x 2years)	Average repair cost per vehicle (average cost of warranty / goodwill repairs per AHM's records is $2,632.87)	Projected total repair cost , (est. 2 claims x 2 years x $2700.00)
20,535	4	$2,700.00	$10,800

Repair Cost Estimate Projection for Prior Deployments			
Affected vehicle population	Affected vehicle population with no reimbursement	Average repair cost per vehicle (average cost of warranty / goodwill repairs per AHM's records is $2,632.87)	Total (Based on 9 repairs)
37	9	$2,700.00	$24,300

- Canada estimated mailing cost $41,104
- Canada market action cost calculation $10,800 + $24,300 + $41,104 = $76,204

Combined Total Estimate- $76,204
No legal charge.

9. Cost summary

9-1 US

Repair Cost Estimate Projection for Future Deployments			
Affected vehicle population	Estimated Occurrences, (25 per year x 2years)	Average repair cost per vehicle (average cost of warranty / goodwill repairs per AHM's records is $2,632.87)	Projected total repair cost , (est. 25 claims x 2 years x $2700.00)
308,217	50	$2,700.00	$135,000

Repair Cost Estimate Projection for Prior Deployments			
Affected vehicle population	Affected vehicle population with no reimbursement	Average repair cost per vehicle (average cost of warranty / goodwill repairs per AHM's records is $2,632.87)	Total (Based on 253 repairs)
381	253	$2,700.00	$683,100
		US mailing cost	$617,395

9-2 CANADA

Repair Cost Estimate Projection for Future Deployments			
Affected vehicle population	Estimated Occurrences, (11 / 6 = 2 per year x 2years)	Average repair cost per vehicle (average cost of warranty / goodwill repairs per AHM's records is $2,632.87)	Projected total repair cost , (est. 2 claims x 2 years x $2700.00)
20,535	4	$2,700.00	$10,800

Repair Cost Estimate Projection for Prior Deployments			
Affected vehicle population	Affected vehicle population with no reimbursement	Average repair cost per vehicle (average cost of warranty / goodwill repairs per AHM's records is $2,632.87)	Total (Based on 9 repairs)
37	9	$2,700.00	$24,300
		Canada mailing cost	$41,104

NA total market action cost is $1.47 million (≒approximately JPY 1.58 oku)
<Details> US：$1.4 mil (JPY 1.5 oku) / CANADA： $0.07 mil（JPY 0.08 oku）

10. Detailed proposed action and schedule

10-1 Market Action Proposal Proactive market action fro class action settlement

10-2 Reason for Proposal Market action will be conducted to address inadvertent deployments and settle a class action lawsuit.

10-3 Action details
(1) Reimburse prior inadvertent deployments that were not previously reimbursed for 03/04/08M (90 day period)
(2) Warranty extension for 2008 Accord 4dr: repair future inadvertent deployments for a period of 2 years.

10-4 Affected Range KA/KC : 03～04 ACCORD、08 ACCORD 4D BCM

10-5 Number of affected vehicles
Past repair reimbursement (03/04/08M) : KA 253 units / KC 9 units
Warranty extension (08M only) : 308,217 units / KC 20,535 units

10-6 Recurrence prevention Completed

10-7 Schedule of Events

	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14	Jul 14	Aug 14	Sep 14	Oct 14	Nov 14	Dec 14
NASC	★												
Preliminary Court Approval		★											
Class Notification			→	→	→	→							
Website Live			★										
Service Bulletin											★		
Claim Submission Process (prior deployments)						→	→	→	→				
Final Court Approval										★			
Claim Submission Process (future deployments)											→	→	→
Reimbursement Processing (prior deployments)											→	→	→
Reimbursement Processing (future deployments)											→	→	→
Parts Arrangement / Procurement				→	→	→							

11. Recurrence prevention

[Honda in-house recurrence prevention for 03-04M]

	Issue	Measures	Schedule
Expansion	Add safing logic and LPF to SIS	Add this Safing logic to other models with TRW system equipped, and also add LPF to SIS step by step. This countermeasure is applied to all 05 models and later.	Jan 2005

[Honda in-house recurrence prevention for 08M]

	Item	Action	Completion timing
Occurrence	Review OFF margin for strong door closing and reflect it in the setting	Verify OFF margin for strong door closing using models in market, and from the verification results, reflect sufficient margin setting in the set threshold. Newly set +[redacted]% from current +[redacted]%. Reflect the setting guide in the preliminary specifications for models after 11M.	May 2007

END

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-3_Control No. 90-40

Q8-3_20140109 030408 Acc SAB [GQC]_Japanese_Redacted

03-04M Accord, 08M Accord 4Dr 北米 Css/HAM

Accordサイドエアバッグ展開不具合

QIS No : SDBA03100301, MV20080416135749, TA5A08051202

グローバル品質委員会

1. 地域委員会検討結果
2. 概要
3. 経緯
4. 発生状況
5. 03-04M 解析結果及び対策内容
6. 08M 解析結果及び対策内容
7. HNA和解内容
8. カナダの状況
9. 発生費用まとめ
10. 措置提案内容及び展開計画
11. 再発防止

2014/01/09

AHサービス	HAM CIE	Css CIE
江口	渡辺	清水

1. 地域委員会結果

NASC議事録
13年12月19日

NASC

Date : 12/19/2013
Revised 12/20/2013

NASC Committee Member:
Present:
H. Eguchi (NASC Chairman), Bruce Smith (AH-Service), K.Nishizawa (AH-PRO)
K. Suzuki (HNAS), T. Yamamoto (HRA), N. Gruebmeyer (AH-Parts)

Meeting Minutes by T.Ota (AH-Service)

Not Present:
Ken Dick (CH)

Title: Accord Side Airbag Inadvertent Deployment

Symptom: The side airbag deploys when not expected.

Market Occurrence: KA 381 cases
KC 37 cases

	03 Accord	04 Accord	08 Accord
KA	112	69	200
KC	18	8	11

Occurrence Cause: SRS system threshold setting too sensitive. Door slam or underbody contact can result in deployment.

Affected units: KA 877,334 units
KC 70,334 units

	03 Accord	04 Accord	08 Accord
KA	296,690	272,427	308,217
KC	35,583	14,216	20,535

NASC Discussion: NASC agreed to the proposal of (1) Reimburse for prior repair not reimbursed for 03/04 2dr/4dr and 08 4dr Accord for 90 days period from the date of customer notification completion and (2) Warranty extension for 08 4dr Accord for future inadvertent deployments for 2 years from the date of final court approval.

[redacted]

[redacted]

[redacted]

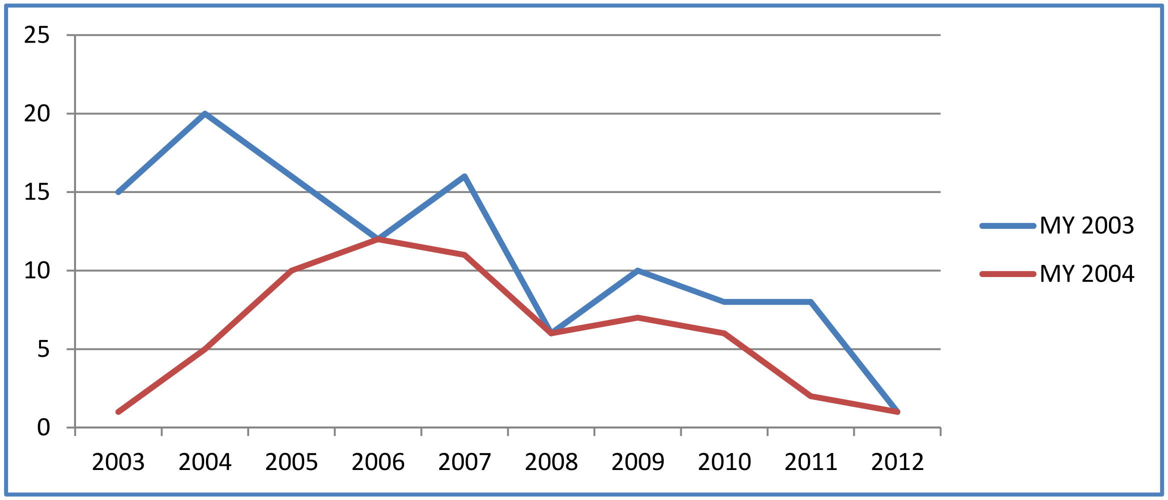
[redacted]

[redacted]

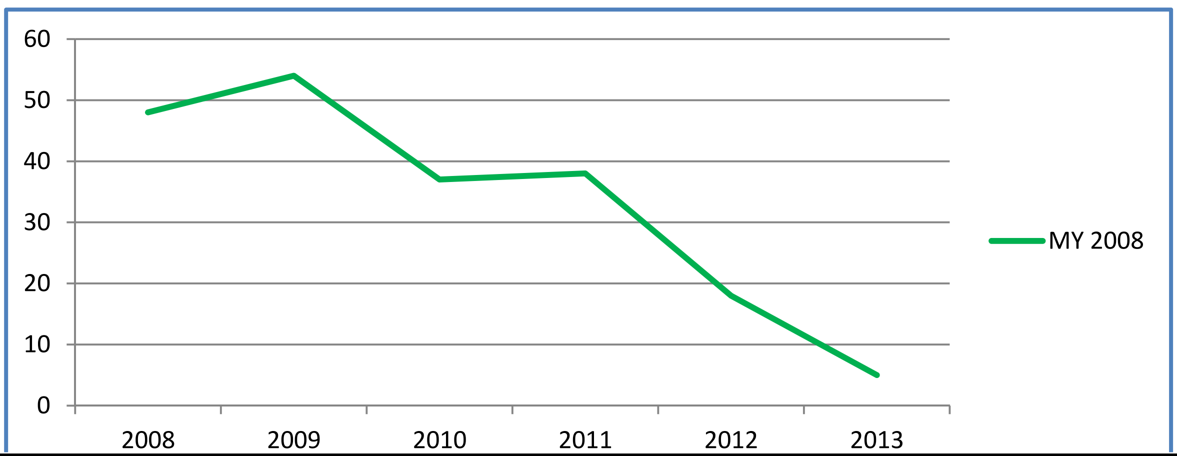
[redacted]

[redacted]

2003M, 2004M
暦年別発生件数



2008M
暦年別発生件数

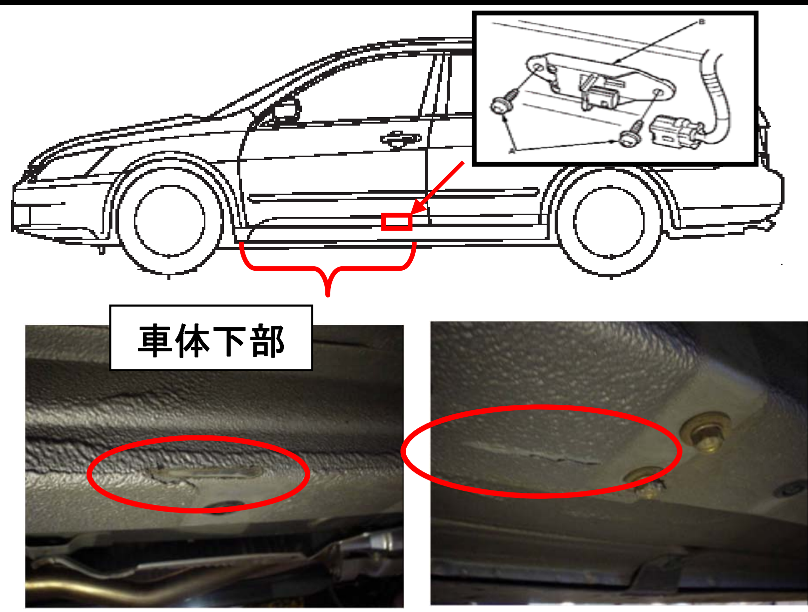


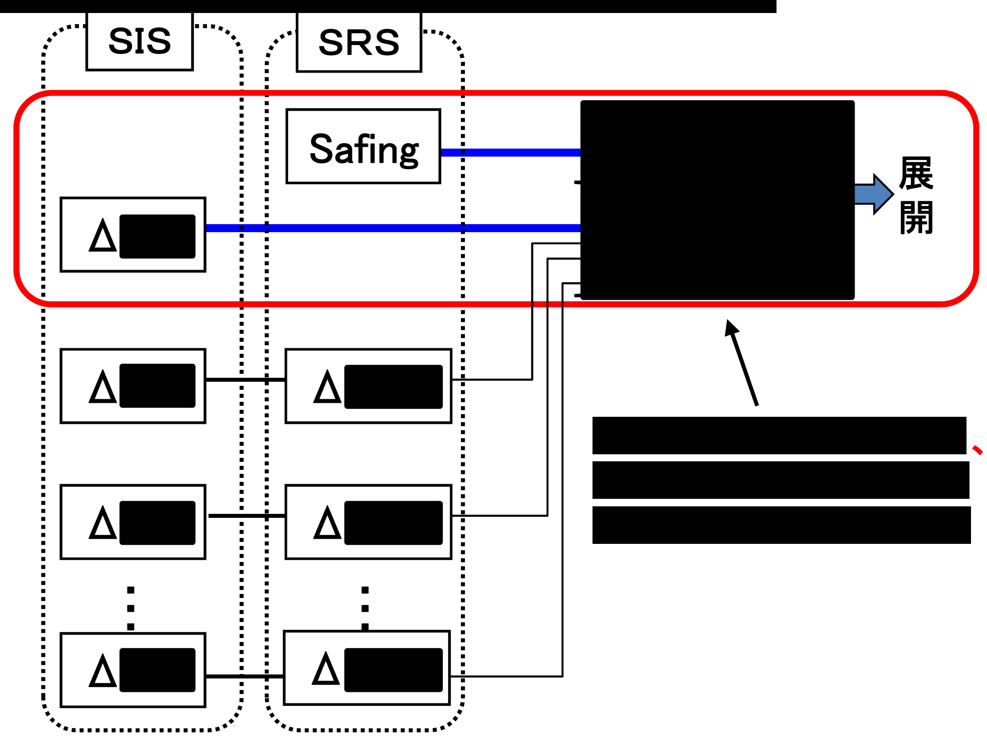
[redacted]

5. 解析結果　5-1 現品解析結果 (03-04 ACCORD)

・1HGCM66553A[redacted]　ACCORD　4D　03M

[redacted]





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6. 解析結果　6-5 対策内容（08 ACCORD）

8-1　対策内容

衝突判定しきい値を変更する。

SIS1_L

[redacted]

ECU_Y

[redacted]

8-2　対策効果確認

変更後しきい値によるシミュレーション結果

インパクトサイド	速度	テスト車状況	旧閾値	新閾値
-	[redacted]m/s	[redacted]	OFF	OFF
-	[redacted]m/s	↑	OFF	OFF
L	[redacted]m/s	[redacted]	OFF	OFF
L	[redacted]m/s	↑	OFF	OFF
L	[redacted]m/s	↑	ON	OFF
L	[redacted]m/s	↑	ON	OFF
L	[redacted]m/s	[redacted]	OFF	OFF
R	[redacted]m/s	[redacted]	OFF	OFF
R	[redacted]m/s	↑	ON	OFF
R	[redacted]m/s	↑	ON	OFF
R	[redacted]m/s	↑	OFF	OFF
R	[redacted]m/s	↑	OFF	OFF
R	[redacted]m/s	↑	OFF	OFF
R	[redacted]m/s	[redacted]	OFF	OFF
R	[redacted]m/s	↑	ON	OFF
R	[redacted]m/s	[redacted]	ON	OFF
R	[redacted]m/s	↑	OFF	OFF
R	[redacted]m/s	[redacted]	ON	OFF
R	[redacted]m/s	↑	ON	OFF
R	[redacted]m/s	↑	OFF	OFF

・ドア強閉[redacted]m/sテストデータで[redacted]%のOFFマージンを確保
・再現テストデータ全てがOFF可能
・側突テストのエアバッグ展開タイミングが、[redacted]ms遅れるが乗員保護性能は問題無し

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

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EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-2_MV2005041613577 49

Q8-21_MV20080416135749_English_Redacted

QUALITY IMPROVEMENT SHEET
[Q I S]

ISSUED BY
Q 4Rin Hinkai Godo

EVENT FLOW	
RESPONSIBLE DEPARTMENT AND PERSON	
COMPLETION DATE	
RECEPTION	Q 4Rin Hinkai Godo / Tadayoshi Fujio / 2008/04/03
INFORMATION INVESTIGATION	Q 4Rin Hinkai Godo / Takashi Tanimoto / 2008/04/16
INVESTIGATION AND ANALYSIS	Q 4Rin Hinkai Godo / Junko Sakurada / 2008/05/17
COUNTERMEASURE REQUEST	Q 4Rin Hinkai Godo / Junko Sakurada / 2008/04/18
INTERMEDIATE REPLY	
COUNTERMEASURE REPLY	2008/07/08
COUNTERMEASURE ISSUED	
COUNTERMEASURE APPLICATION	C Kikaku Kanri / Watanabe Yuzuru / 2008/06/30
COMPLETED	Q 4Rin Hinkai Godo / Junko Sakurada / 2008/07/08

RECEPTION DATE
/

COUNTERMEASURE REQUEST — ADDRESSEE — RECEPTION / RECEPTION

RANK	DATE: APPROVAL	CHECK	CREATOR
A			

MODEL CODE YM/MODEL NAME	TITLE	QIS CONTROL #
CP2 08/ACCORD/	Side Curtain and Seat Air Bag Deploy at Door Slam<QAH2552>	MV20080416135749
OCCURRENCE DESCRIPTION		

REPLY — REPLY TO Q 4Rin Hinkai Godo — VIA — BY May 9

INVESTIGATION AND ANALYSIS RESULTS

Country of occurrence: USA
****
[Information investigation result]
1) There are 4 cases of side airbag and curtain airbag deployment when the customer closed the door.(2 Css and 2 HAM)
2) SRS unit and side impact sensor had no problems for HAM build. Assess that airbag deployment was normal operation by crash.
*From above results, we issued SHODO HATSUDOSHO to HGT to verify toughness of development at the time of the door close. (2008/4/18)
[Actual part confirmation result]
1) As a result of visual confirmation, no abnormalities such as damage or dent in the SRS unit and sid impact sensor identified.
2) No bent connector or contaminants identified.
[Record confirmation result]
1) Confirmed R side airbag and curtain airbag deployment history.

[Record confirmation result]
1) Confirmed development history of R side airbag and curtain airbag.
2) From recored crash wave, assess that it is impact by the door close.
[Recreation test result]
1) As a result of recreation test result, we confirmed that side airbag and curtain airbag deploy when the door is slammed at speeds over approx.[redacted]m/s.
*See attachment for test conditions.
[Deployment thoughness comparison with other models]
1) Confirmed 4Dr ACCORD for UA had [redacted]% OFF margine for the door slam at [redacted]m/s.
2) Confimed other models with results in the maraket have [redacted]% OFF margine secured for the door slam at [redacted]m/s.
*See attachment for the test result.

*From the above results, assess that development thoughness for 4Dr ACCORD for UA for the door close was insufficient for other models, and it led to side airbag and curtain airbag development by the door shut speeds by the user.

CAUSE ANALYSIS

[Cause of occurrence]
-Assess that side airbag and curtain airbag were deployed by speeds of the door close by the user because the toughness for the door close was insufficient.

COUNTERMEASURE

[C/M for the problem]
-Setting threshold value for crash was changed.
-D/C:2008/4/23 DC No.C48-2-1702

TREATMENT FOR STOCK & SOLD UNITS & PARTS

-No specific treatment will not be taken due to this is a rare case by related the user door slam speeds.

COUNTERMEASURE APPLICATION INFORMATION

DATE	MODEL CODE (MODEL NAME)	YM	DEST.	CATEGORY	PRODUCT #
2008/06/30	CP2	2009	AH	F	C000551

COUNTERMEASURE EFFECTIVENESS

-Assess that it was effective due to new threshold setting valude could secure [redacted]% margin for the door slam ([redacted]m/s).

FEED BACK TO THE SOURCE

OCCURRENCE MARKET	
REPORT #	AHOS2008040301-00
FRAME #	JHMCP263880[redacted]
ENGINE #	K24Z2-[redacted]
TRANSMISSION #	
TRANSMISSION CATEGORY	5AT
MILEAGE OR HOURS	2317 Mile
REGISTRATION DATE	2008/02/25
OCCURRENCE DATE	2008/03/24
PRODUCT DATE	2008/01/09

SERVICE PART #	
MAIN CAUSAL PART #	77960-TA0
CAUSAL PART SYMPTOM CODE AND DESCRIPTION	
MODEL CODE	
CAUSE CATEGORY	Specification
RESP. DEPARTMENT	
RESP. SUPPLIER	HONDA RESERCH AND — CODE 6530
COUNTERMEASURE CATEGORY	Closed
COUNTERMEASURE PART SYMPTOM CODE AND DESCRIPTION	3207 change of th
OCCURRENCE FORECAST	Sporadic
COUNTERMEASURE PART AVAILABILITY	Ⅳ — Yes
REVISED ITEM	DRAWING — OPERATION STANDARD

ISSUE	DATE	VERSION	APPROVAL	CHECK	CHECK	CREATOR
3	2008/07/15	REVISE	Junichi Miy		Satoru Yosh	Junko Saku
2	2008/07/10	FINISH	Junichi Miy		Satoru Yosh	Junko Saku
1	2008/05/16	TENT. FI	Junichi Miy		Satoru Yosh	Junko Saku
0	2008/04/16	NEW	Junichi Miy			Takashi Tan

DATE	REPLY DEPARTMENT (IN-HOUSE)	APPROVAL	CHECK	CREATOR
07/08				

DATE	REPLY DEPARTMENT (IN-HOUSE)	APPROVAL	CHECK	CREATOR

DATE	REPLY DEPARTMENT (OUTSIDE)	APPROVAL	CHECK	CREATOR

INVESTIGATION RESULTS

*Detailed analysis requested to the SPLY (Continental)

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-2_MV2005041613577749

Q8-21_MV20080416135749_Japanese_Redacted

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-2_MV2005041613577749

Q8-22_MV20080416135749

Analysis Request to Continental_English_Redacted

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Market Quality Information
〔Analysis/Countermeasure Request Form〕

Control No:

Issued date: 5/12/2008

To		Receipt	/	Rank	Issuer: omotive Quality Innovation Operati
	Quality Assurance, Continental Automotive Japan		May 2	A	omotive Quality Analysis Of

Type/YM/Model name	Title
CP2	
08M Accord	Side curtain SRS, and side SRS deployment when door closed

Approved	Checked	Created
Kamata	Yoshida	Sakurada

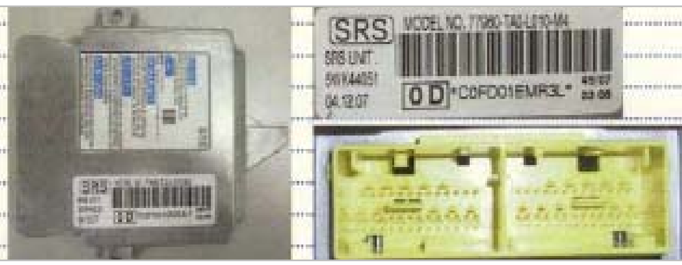
Occurrence situation

Side curtain SRS, and side SRS of the passenger side are deployed when the car is stopped, and its passeger side door is closed.
Side curtain SRS, and side SRS are deployed when the passenger side door is closed.
Its travel distance is 2000miles, and there is no scrach on the car.
* This has happned from nine vehicles of the North American market.(Three from HAM built, and three from Css)

Prelimnaly Analysis Results/Requests

<Affected parts inspection>

SRS unit visual inspection
1. No scar, or deformation is seen on the outer of SRS unit.



SRS unit performance check
1. No failure is found from the past, or current record.

Failure

	x0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x:	00	00	00	00	00	00	0C	00	00	00	00	00	00	00	AA	4A
1x:	[redacted]															

Deployment record

8x: [redacted] 00 00 00 00 00 00 00 00 00 00

L side: G trigger

R side: side airbag, and curtain airbag deployment

Transmission	
Frame No.	JHMCP26388[redacted]
ENG No.	
Transmission No.	
Part name	
Part No.	77960-TA0-L010-M4
Prod. Date	1/9/2008
Reg. date	2/25/2008
Failure occ. Date	3/24/2008
Mileage	2317 miles / h
Location	United States
Use	Commute Leisure Commercial( )
Equipment	
Others (Parts returned, attachment, etc.)	Market returnd parts is available.

Response due dat	5/22/2008
Respond to	Automotive Quality Innovation Operations Automotive Quality Analysis Office
Response with	Analysis report - Others ( )
Contact	Sakurada, AQAO, Automotive Quality Innovation Operations, QCT, Honda Motor Co., Ltd.
Address Phone #	E-mail : junko_sakurada@hm.honda.co.jp TEL: +81-28-687-2104, FAX: +81-28-687-2112

* Please submit midterm report if response is delayed.
* Please attach necessary documents as well.
* Please implement IP control to C/M parts.

Date	Response received by (Div.)	Checked	PIC
18-Jun	AQAO	Yoshida	Sakurada

01064

Original stored until 5 /m 2018

THIS PAGE CONTAINS BUSINESS CONFIDENTIAL INFORMATION

Market Quality Information
〔Analysis/Countermeasure Request Form〕

Control No:

Issued date: 5/12/2008

To	Quality Assurance, Continental Automotive Japan	Receipt	/ May 2	Rank: A	Issuer: omotive Quality Innovation Operati / omotive Quality Analysis Of

Type/YM/Model name	Title
CP2	
08M Accord	Side curtain SRS, and side SRS deployment when door closed

Approved	Checked	Created
Kamata	Yoshida	Sakurada

Occurrence situation

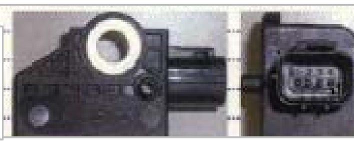
Side curtain SRS, and side SRS of the passenger side are deployed when the car is stopped, and its passeger side door is closed.
Side curtain SRS, and side SRS are deployed when the passenger side door is closed.
Its travel distance is 2000miles, and there is no scrach on the car.
* This has happned from nine vehicles of the North American market.(Three from HAM built, and three from Css)

Prelimnaly Analysis Results/Requests

<Affected parts inspection>

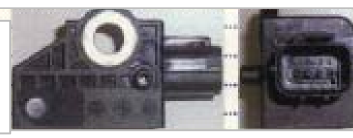
Side impact sensor visual inspection
1. No scar, or corrosion is seen on the outer of SRS unit.

Parts: Side impact sensor



1. No scar, or corrosion is seen on the outer of SRS unit.

Parts: Side impact sensor
Parts No.: 7790-TA0-A11



Sattelite safing sensor
1. No scar, or corrosion is seen on the outer of SRS unit.

Parts: Satellite safing sensor

*Analyze SRS unit detailed record, and provide G data recorded in the unit.
Use the market returned SRS unit, side impact sensor, and sattelite safing sensor when you conduct

Transmission	
Frame No.	JHMCP26388[redacted]
ENG No.	
Transmission No.	
Part name	Side impact sensor/Satellite safing sensor
Part No.	77970-TA0-A11/77975-TA0-A11
Prod. Date	1/9/2008
Reg. date	2/25/2008
Failure occ. Date	3/24/2008
Mileage	2317 miles / h
Location	United States
Use	Commute Leisure Commercial( )
Equipment	
Others (Parts returned, attachment, etc.)	Market returnd parts is available.

Response due date	5/22/2008
Respond to	Automotive Quality Innovation Operations / Automotive Quality Analysis Office
Response with	Analysis report / - Others ( )
Contact	Sakurada, AQAO, Automotive Quality Innovation Operations, QCT, Honda Motor Co., Ltd.
Address Phone #	E-mail : junko_sakurada@hm.honda.co.jp / TEL: +81-28-687-2104, FAX: +81-28-687-2112

* Please submit midterm report if response is delayed.
* Please attach necessary documents as well.
* Please implement IP control to C/M parts.

Date	Response received by (Div.)	Checked	PIC
18-Jun	AQAO	Yoshida	Sakurada

01064

Original stored until 5 /m 2018

THIS PAGE CONTAINS BUSINESS CONFIDENTIAL INFORMATION

Market Quality Information
〔Analysis/Countermeasure Request Form〕

Control No:

Issued date: 5/23/2008

To	Quality Assurance, Continental Automotive Japan	Receipt	/ May 26	Rank: A	Issuer: omotive Quality Innovation Operati / omotive Quality Analysis Of

Type/YM/Model name	Title
CP2	
08M Accord	Side curtain SRS, and side SRS deployment when door closed

Approved	Checked	Created
Miyake	Yoshida	Sakurada

Occurrence situation

Side curtain SRS, and side SRS of the passenger side are deployed when the car is stopped, and its passeger side door is closed.
Side curtain SRS, and side SRS are deployed when the passenger side door is closed.
Its travel distance is 2000miles, and there is no scrach on the car.
* This has happned from nine vehicles of the North American market.(Three from HAM built, and three from Css)

Prelimnaly Analysis Results/Requests

<Affected parts inspection>

[Actual part confirmation result]
- Outside looking confermation result
(Parts number) 77960-TA0-L010-M4
(Serial No.) C0FD01EM53%

SRS unit visual inspection
1. No scar, or deformation is seen on the outer of SRS unit.
2. No bent, or contaminant adhesion is seen

SRS unit performance check
1. No failure is found from the past, or current record.
2. There is a deployment history for side

Failure

	x0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x:	00	00	00	00	00	00	0C	00	00	00	00	00	00	00	AA	4A
1x:	[redacted]															

Deployment record

8x: [redacted] 00 00 00 00 00 00 00 00 00 00

L side: G trigger

R side: side airbag, and curtain airbag deployment recorded

Transmission	
Frame No.	JHMCP26828[redacted]
ENG No.	
Transmission No.	
Part name	
Part No.	77960-TA0-L010-M4
Prod. Date	1/10/2008
Reg. date	2/18/2008
Failure occ. Date	3/24/2008
Mileage	1948miles / h
Location	United States
Use	Commute Leisure Commercial( )
Equipment	
Others (Parts returned, attachment, etc.)	Market returnd parts is available.

Response due dat	6/2/2008
Respond to	Automotive Quality Innovation Operations / Automotive Quality Analysis Office
Response with	Analysis report / - Others ( )
Contact	Sakurada, AQAO, Automotive Quality Innovation Operations, QCT, Honda Motor Co., Ltd.
Address Phone #	E-mail : junko_sakurada@hm.honda.co.jp / TEL: +81-28-687-2104, FAX: +81-28-687-2112

* Please submit midterm report if response is delayed.
* Please attach necessary documents as well.
* Please implement IP control to C/M parts.

Date	Response received by (Div.)	Checked	PIC
18-Jun	AQAO	Yoshida	Sakurada

01064

Original stored until 6 /m 2018

THIS PAGE CONTAINS BUSINESS CONFIDENTIAL INFORMATION

Market Quality Information
〔Analysis/Countermeasure Request Form〕

Control No:

Issued date: 5/23/2008

T o		Receipt	/	Rank	Issuer: omotive Quality Innovation Operati
	Quality Assurance, Continental Automotive Japan		May 26	A	omotive Quality Analysis Of

Type/YM/Model name	Title
CP2	
08M Accord	Side curtain SRS, and side SRS deployment when door closed

Approved	Checked	Created
Miyake	Yoshida	Sakurada

Occurrence situation

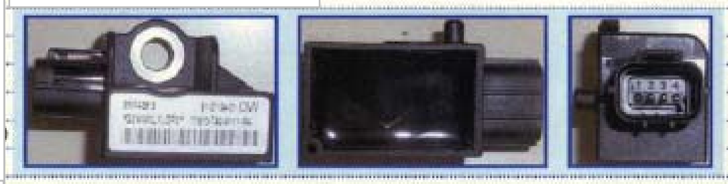
Side curtain airbag in the right side was deployed when my husband closed the door after my daugter got in the car.
* This has happned from nine vehicles of the North American market.(Three from HAM built, and three from Css built vehicles.)

Prelimnaly Analysis Results/Requests

<Affected parts inspection>

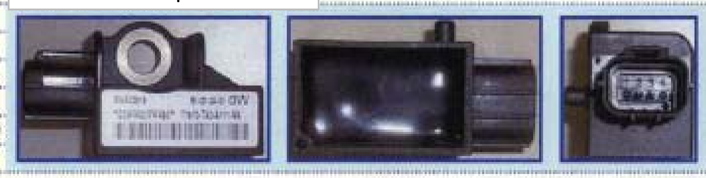
[Side impact sensor]
(Parts number) 7790-TA0-A111-M4
(Parts name)Side impact sensor
(Serial No.) G0WW0LVUZP0
1. No scar, or corrosion is seen on the outer of SRS unit.
2. No bent, or contaminant adhesion is

Parts: Side impact



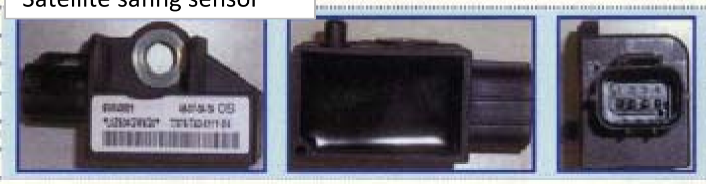
(Parts number) 7790-TA0-A111-M4
(Parts name)Side impact sensor
(Serial No.) G0WW0LVW4$0
1. No scar, or corrosion is seen on the outer of SRS unit.
2. No bent, or contaminant adhesion is seen on the connecter terminal.

Parts: Side impact



[Satellite safing sensor]
(Parts number) 7790-TA0-A111-M4
(Parts name)Satellite safing sensor
(Serial No.) L0Zs04GW9G00
1. No scar, or corrosion is seen on the outer of SRS unit.

Satellite safing sensor



*Analyze SRS unit detailed record, and provide G data recorded in the unit.
Use the market returned SRS unit, side impact sensor, and satellite safing sensor when you conduct imapct

Transmission	
Frame No.	JHMCP26828[redacted]
ENG No.	
Transmission No.	
Part name	
Part No.	77970-TA0-L010-M4
Prod. Date	1/10/2008
Reg. date	2/18/2008
Failure occ. Date	3/24/2008
Mileage	1948 miles / h
Location	United States
Use	Commute Leisure Commercial( )
Equipment	
Others (Parts returned, attachment, etc.)	Market returnd parts is available.

esponse due dat	6/2/2008
Respond to	Automotive Quality Innovation Operations Automotive Quality Analysis Office
Response with	Analysis report - Others ( )
Contact	Sakurada, AQAO, Automotive Quality Innovation Operations, QCT, Honda Motor Co., Ltd.
Address Phone #	E-mail : junko_sakurada@hm.honda.co.jp TEL: +81-28-687-2104, FAX: +81-28-687-2112

* Please submit midterm report if response is delayed.
* Please attach necessary documents as well.
* Please implement IP control to C/M parts.

Date	Response received by (Div.)	Checked	PIC
18-Jun	AQAO	Yoshida	Sakurada

01064

Original stored until 6 /m 2018

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-2_MV2005041613577 49

Q8-22_MV20080416135749

Analysis Request to Continental_Japanese_Redacted

[redacted]

[redacted]

[redacted]

[redacted]

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-2_MV2005041613577 49

Q8-25_Urgent action request form(MV20080416135749)_English_Redacted

☐QPD:8-3-42950 ☐Sss:8-24-2375 ☐Mss:8-23-2180 ☐Css:8-21-3609 ☐Kss:8-25-1926

4727

Request to	Request / Reply	Request from AQAO	Request / Reply	Request from
Takayama SMG, HGT Quality Planning GR Uechi, Nakajima, Tadokoro, Tsuru kan MG H Purchase PESC H Quality Information H Customer Ofifce STC		Denso Gr. Audio/Navi/SRS Issued: 4/17/2008 PIC: Junko Sakurada Manager: Junichi Kamata Tel: 8-28-781 Fax: 8-29-7791 +81-29-687-2112		Denso Gr. Audio/Navi/SRS Issued: PIC: Manager: Tel: Fax:

Urgent

Shodosho A

Scramble	
Analysis result	
Investigation	O
analysis	
S/O	

Please reply within 20 days after you receive market returned part. If it takes you more than 20ays to reply, please provide us with midterm report, or progress state in the Reception Division comment column of this form including possible reply date.

Title	Side curtain SRS, and side SRS deployment when door closing<QAH2552>		
Model	08M ACCORD		
Type: VIN	JHMCP26388C[redacted]	Mileage	2317 mile
Audit Officer	—	Market	USA
Audit Date	—	Plant	Css
Audit Location	—	QIS No :MV20080416135749	
Meeting time	—	QIC No :	
Meeting Location	—		
Customer Audit	~~Yes/No~~ Auditor —		

Request
This problem has occurred from two Css built units, and two HAM built units in the US market.
Analysis shows that the side impact sensor, and SRS unit from HAM built units have no anomaly.
Please study toughness to airbag deployment for door closing.
*That is coordinated with Sindo CE from HGT 4G4, and Ohmoto CE on 4/16/ 2008.

Shodo Meeting on April 17

Request by AQAO

Please promote this issue. Yasunaga on April 17

Yasunaga 4/17

Comment from HGT		Function Division	Quality Planning Division
Please promote this issue by 4G4, and 4G2-1 Ishima 4G			AOKI

Replied on April 18

Promotion division comment(Study, and analysis reply)

We'll immediately review toughness increase to airbag deployment for strong door closing force.
We'll handle drawing, and determine a countermeasure. Ohmoto 4G2-1

4G2HG
Tsurumiya

Function Division manager	Quality Planning Division manager
Shindo	Tamura

Expert dispatch			Reply date
Answer by (mark)			PIC of Scramble activity
HGT( )SS Customer HDS			Division/expert
Manager	Function Division	Quality Planning Division	Division/expert

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-2_MV200504161357749

Q8-25_Urgent action request form(MV20080416135749)_Japanese_Redacted

[redacted]

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-2_MV200504161357749

Q8-26_Continental ATMTV JPN Initial Production Parts Tag_English

該当箇所の№を○印する。CIRCLE APPLICABLE NO.
1. 仕様変更初物 INITIAL PRODUCTION PARTS OF SPEC. CHANGE
2. 品質改善初物 QUALITY IMPROVEMENT ACTIVITY
3. 自主管理初物 VOLUNTARY INITIAL PARTS CONTROL
(1. 先行確認 ADVANCED QUALITY CONFIRMATION)
(2. 初物提示 SUBMIT ACTUAL INITIAL PARTS)

太線以外は、取引先又は、発行部門で記入して下さい。
TO BE COMPLETED BY SUPPLIER EXCEPT WHERE INDICATED IN BOLD LINES

初物管理〔初物品〕 INITIAL PRODUCTION PARTS

④

管理NO. CONTROL NO.	CSC 08H 021 IPP
発行年月日 DATE OF ISSUE	2008. 6. 18

取引先又は発行課と最終搬入取引先が同一の場合上段を斜線のこと。
WHERE "A" AND "B" ARE COMMON, STRIKE OUT "A".

	取引先又は発行課 SUPPLIER OF DEPARTMENT ISSUING	発行者 PERSON ISSUING	DATE	搬入数 QUANTITY	LOT NO.
A	~~ ~~				
B 最終搬入取引先 FIRST SUPPLIER	Continental Automotive Japan	數上	6/27	5457	

		初物内容 HOW CHANGED
部番 PART NO.	77960-TA0-L020-M4	
部品名 PART NAME	UNIT ASSY, SRS	
仕様通知 SPEC NOTICE NO.	C48-2-1702	

Initial parts delivery for specification change.

該当箇所の№を○印する。CIRCLE APPLICABLE NO.

1	仕様変更：SPEC. CHANGE	6	機械変更：MACHINE CHANGE
2	新規取引先：NEW SUPPLIER	7	治工具変更：JIG/TOOL CHANGE
3	材料変更：MATERIAL CHANGE	8	金型変更：DIE/MOLD CHANGE
4	加工条件・方法変更：MANUFACTURING METHOD CHANGE	9	検査方法変更：INSPECTION METHOD CHANGE
5	工程系列変更：MANUFACTURING PROCESS ORDER CHANGE	10	輸送方法・荷姿変更：TRANSPORTATION METHOD/TYPE OF PACKING CHANGE

初物品には、検査成績表を添付し搬入して下さい。
DELIVER INITIAL PRODUCTION PARTS WITH INSPECTION RESULT SHEETS.

1) 本エフの①は、取引先又は発行部門控。SHEET ① MUST BE KEPT BY SUPPLIER OR DEPARTMENT ISSUING.
2) 本エフの②③④は、各工程、取引先責任者のサインをして次工程に渡して下さい。
SHEETS ②③④ MUST BE PASSED TO NEXT PROCESS WITH SIGNATURE OF RESPONSIBLE PERSON FOR THE PROCESS.

責任者署名：SIGNATURE OF RESPONSIBLE PERSON

① 発行取引先 FOURTH SUPPLIER DATE	② 中間工程取引先 THIRD SUPPLIER DATE	③ 中間工程取引先 SECOND SUPPLIER DATE	量産移行判定 可・否 PRODUCTION LINE SUPPLY JUDGEMENT PASS・FAIL
			合
④ 最終搬入取引先 FIRST SUPPLIER DATE	⑤ 本田技研受付 HONDA RECEIPT DATE	⑥ 本田技研検査 HONDA INSPECTION DATE	
數上 2008.6.18		2ム 石井 6/24	石

03011

④ 初物管理部門控
DUPLICATE FOR INITIAL PRODUCTION CONTROL DEPARTMENT

保存期限：2023 年
RETENTION PERIOD: YEARS

✓ アラタ

初物管理〔初物品〕
INITIAL PRODUCTION PARTS

確認結果 INSPECTION RESULT	
機種 MODEL	TA0ZAA6
初物月日：DATE OF APPLICATION	H20.6.30

ENG.-NO:	
FRM.-NO:	CP2-0000551
(　)-NO:	

判定 JUDGEMENT	合格 ACCEPTED	不具合 REJECTED	
	∂		○暫定使用 TEMPORARY USE ○修正・選別 REPAIR·SELECTION ○特採 SPECIAL ACCEPTANCE

備考 REMARK

Apply 3104

社内ルート ROUTE	AF2MO D1-2A						完検担当 PERSON IN CHARGE OF FINAL INSPECTION	完検責任者 RESPONSIBLE PERSON FOR FINAL INSPECTION	主管部門返り TO BE RETURNED TO MAIN CONTROL DEPARTMENT
判定 JUDGEMENT	ok						6/30 安藤	蘇田	
サイン SIGNATURE	永瀬								

完検判定 RESULT OF FINAL INSPECTION	合格 ACCEPTED	不具合 REJECTED	
	Q		○暫定使用 TEMPORARY USE ○組替実施 REPLACEMENT WITH CORRECT PART

備考：REMARK

✓

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-2_MV200504161357749

Q8-26_Continental ATMTV JPN Initial Production Parts Tag_Japanese

該当箇所のNoを○印する。CIRCLE APPLICABLE NO.
1. 仕様変更初物 INITIAL PRODUCTION PARTS OF SPEC. CHANGE
2. 品質改善初物 QUALITY IMPROVEMENT ACTIVITY
3. 自主管理初物 VOLUNTARY INITIAL PARTS CONTROL
(1. 先行確認 ADVANCED QUALITY CONFIRMATION)
(2. 初物提示 SUBMIT ACTUAL INITIAL PARTS)

太線以外は、取引先又は、発行部門で記入して下さい。
TO BE COMPLETED BY SUPPLIER EXCEPT WHERE INDICATED IN BOLD LINES

[redacted]

INITIAL PRODUCTION PARTS

管理 NO. CONTROL NO. CSC 08H 021 IPP

④

発行年月日 DATE OF ISSUE 2008. 6. 18

取引先名又は発行課と後続搬入取引先が同一の場合上段を斜線のこと。
WHERE "A" AND "B" ARE COMMON, STRIKE OUT "A".

A	取引先又は発行課 SUPPLIER OF DEPARTMENT ISSUING	発行者 PERSON ISSUING	DATE	搬入数 QUANTITY	LOT NO.

[redacted]

部番 PART NO. 77960-TA0-L02D-M4

部品名 PART NAME UNIT ASSY, SRS

仕様通知 SPEC NOTICE NO. C48-2-1702

初物内容 HOW CHANGED

[redacted]

該当箇所のNoを○印する。CIRCLE APPLICABLE NO.

1	仕様変更：SPEC. CHANGE	6	機械変更：MACHINE CHANGE
2	新規取引先：NEW SUPPLIER	7	治工具変更：JIG/TOOL CHANGE
3	材料変更：MATERIAL CHANGE	8	金型変更：DIE/MOLD CHANGE
4	加工条件・方法変更：MANUFACTURING METHOD CHANGE	9	検査方法変更：INSPECTION METHOD CHANGE
5	工程系列変更：MANUFACTURING PROCESS ORDER CHANGE	10	搬送方法・荷姿変更：TRANSPORTATION METHOD/TYPE OF PACKING CHANGE

初物品には、検査成績表を添付し搬入して下さい。
DELIVER INITIAL PRODUCTION PARTS WITH INSPECTION RESULT SHEETS.

1) 本エフの①は、取引先又は発行部門控。SHEET ① MUST BE KEPT BY SUPPLIER OR DEPARTMENT ISSUING.
2) 本エフの②③④は、各工程、取引先責任者のサインをして次工程に渡して下さい。
SHEETS ②③④ MUST BE PASSED TO NEXT PROCESS WITH SIGNATURE OF RESPONSIBLE PERSON FOR THE PROCESS.

責任者署名：SIGNATURE OF RESPONSIBLE PERSON

[redacted]

6/24

量産移行判定 可・否 PRODUCTION LINE SUPPLY JUDGEMENT PASS・FAIL

合格

[redacted]

④ 初物管理部門控
DUPLICATE FOR INITIAL PRODUCTION CONTROL DEPARTMENT

保存期限：2023 年
RETENTION PERIOD; YEARS

✓ アラタ

初物管理〔初 物 品〕
INITIAL PRODUCTION PARTS

確 認 結 果
INSPECTION RESULT

機種 MODEL	TA02 AA6
切換月日：DATE OF APPLICATION	H20.6.30

ENG.-NO:			
FRM.-NO: CP2-0000551			
( )-NO:			
	∂		[redacted]
判定 JUDGEMENT	合格 ACCEPTED	不具合 REJECTED	SPECIAL ACCEPTANCE

備考 REMARK

[redacted]

社内ルート ROUTE	[redacted]						完検担当 PERSON IN CHARGE OF FINAL INSPECTION	完検責任者 RESPONSIBLE PERSON FOR FINAL INSPECTION	主管部門戻り TO BE RETURNED TO MAIN CONTROL DEPARTMENT
判定 JUDGEMENT							6/30		
サイン SIGNATURE							安藤	磐田	

	Q			[redacted]
[redacted]				

✓

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-2_MV200504161357749

Q8-27_Side curtain SRS and Side SRS deployed when doors are shut_QAH2552_English_Redacted

HONDA
The Power of Dreams

QIS No.:MV20080416135749

New & Closing Proposal

Model: 08M Accord

[Side Curtain SRS and Side SRS Deployed when Door is Shut <QAH2552>]

Reported on: April 22, 2008

Emergency Shodo Issuance

Urgent

Shodosho A

Analysis result
Investigation
analysis O
S/O

returned part. If it takes you more than 20ays to reply, please provide us with midterm report, or progress state in the Reception Division comment column of this form including possible reply date.

Title	Side curtain SRS, and side SRS deployment when door closing<QAH2552>		
Model	08M ACCORD		
Type: VIN	JHMCP26388C[redacted]	Mileage	2317 mile
Audit Officer	—	Market	USA
Audit Date	—	Plant	Css
Audit Location	—	QIS No :MV20080416135749	
Meeting time	—	QIC No :	
Meeting Location	—		
Customer Audit	~~Yes/No~~ Auditor —		

Request
This problem has occurred from two Css built units, and two HAM built units in the US market.
Analysis shows that the side impact sensor, and SRS unit from HAM built units have no anomaly.
Please study toughness to airbag deployment for door closing.
*That is coordinated with Sindo CE from HGT 4G4, and Ohmoto CE on 4/16/ 2008.

Shodo Meeting on April 17

Request by AQAO

Please promote this issue. Yasunaga on April 17 Yasunaga 4/17

Function Division | Quality Planning Division AOKI

Comment from HGT
Please promote this issue by 4G4, and 4G2-1
Ishima 4G

Promotion division comment(Study, and analysis reply)

Replied on April 18

We'll immediately review toughness increase to airbag deployment for strong door closing force.
We'll handle drawing, and determine a countermeasure. Ohmoto 4G2-1

4G2HG Tsurumiya

Function Division manager Shindo | Quality Planning Division manager Tamura

Regarding this issue, there are 2 cases with Css CBU, and 2 cases with HAM CBU in US market.
Analysis of HAM CBU SRS unit and side impact sensor found no anomalies.
Please develop countermeasures for toughness against deployment when door is slammed shut.

- HG Start Date: April 17
- Completion Target Date: Plan: May 16 (Emergency Shodo Target: 1 month)

Today's Report

- Occurrence Status
- Root Cause Analysis
- Action Schedule
- Proposed Countermeasure

Occurrence Status

- **Claimed Symptom**

Customer claimed that side airbag and side curtain airbag were deployed when door was shut.

- **Unique Points and Affected Vehicle Investigation Result**

1：Subject Vehicles
08M Accord 4Dr for NA Market
MAP CBU: 2 units, Css CBU: 2 units, total of 4 units

2：NA Market List of Affected Vehicles

CASE	VIN	AF date	Occurrence date	R or L	SRS UNIT Supplier
1	1HGCP26718A[redacted]	Feb/ 7/'08	Mar/18?/'08	R	Continental
2	1HGCP26738A[redacted]	Feb/ 8/'08	Feb/16/'08	L	Continental
3	JHMCP26388C[redacted]	Jan/ 9/'08	Mar/24?/'08	R	Continental
4	JHMCP26828C[redacted]	Jan/10/'08	Mar/24?/'08	?	Continental

?：No information

・Feb. 2008@MAP, Jan. 2008@Sayama CBU had experienced this symptom
・Happened by Fr door opening/closing. Happened with left and right side, respectively
→ No regularity found
・Case 1 and 2: Affected SRS units were sent back to Continental
(No additional information received for 2 CBUs built in Sayama)

No unique points found in terms of production plant and the side of airbag deployed

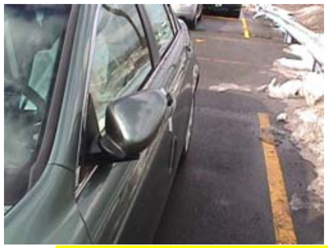
THIS PAGE CONTAINS BUSINESS CONFIDENTIAL INFORMATION

Occurrence Status

- **WTY Investigation Result and Returned Parts Confirmation Result**

Case１：VIN: 1HGCP26738A[redacted]

１: Appearance



Side Airbag
Side Curtain Airbag
Both of them were deployed

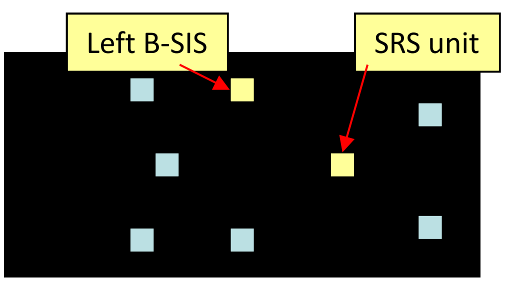
Side airbag and side curtain airbag were deployed by collision without vehicle deformation

２:SRS Unit Collision History Analysis

[redacted]	All d_v values from all SIS: Row1 SIS Left DV short High byte (ROW1_L_DVSn)	[redacted]	
[redacted]	All d_v values from all SIS: Row1 SIS Left DV short Low byte	[redacted]	[redacted]

[redacted]	SRS_y delta_v for decision maps High byte (ECUY2kHz_DVn)	[redacted]	
[redacted]	SRS_y delta_v for decision maps Low byte	[redacted]	[redacted]

NTF: Ignition judgment is made by SRS Unit and Left side B-SIS



Collision History: Analog Plot by G Data

[redacted]

Based on collision history + History G data, SRS unit determined it as collision and side airbag/side curtain airbag were deployed

Occurrence Status

- **WTY Investigation Result and Returned Parts Analysis Result**

Case2：VIN: 1HGCP26718A[redacted]

1：Appearance

[redacted]

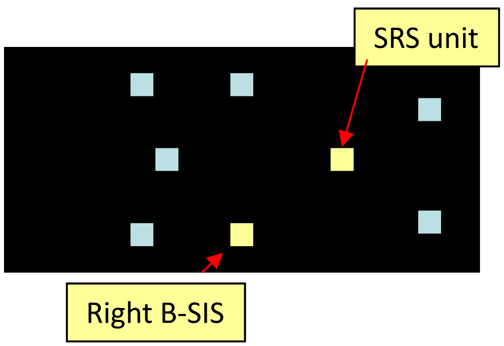
Same as Case 1, no body deformation by collision

2：SRS Unit Collision History Analysis

[redacted]	All d_v values from all SIS: Row1 SIS Right DV short High byte (ROW1_L_DVSn)	[redacted]	[redacted]
[redacted]	All d_v values from all SIS: Row1 SIS Right DV short Low byte	[redacted]	

[redacted]	SRS_y delta_v for decision maps High byte (ECUY2kHz_DVn)	[redacted]	[redacted]
[redacted]	SRS_y delta_v for decision maps Low byte	[redacted]	

NTF: Ignition judgment is made by SRS Unit and Right side B-SIS



Collision History: Analog Plot by G Data

[redacted]

t Point

Based on collision history + History G data, SRS unit determined it as collision and side airbag/side curtain airbag were deployed

THIS PAGE CONTAINS BUSINESS CONFIDENTIAL INFORMATION

Root Cause Analysis

- **Recreation Test Result**

1：Purpose

Conduct a test to slam the door shut with the speed exceeding the requirement ([redacted]m/s) to see if ignition judgment will be made.

2：Test

・Use 2PX 4Dr NA market (MAP CBU) DAN vehicle to slam the door shut

・Verify ignition judgment by door slammed shut using warning lamp and collision history

3：Test Result

Impact Side	Speed	Test Vehicle Condition	Deployment
-	[redacted] m/s	[redacted]	OFF
-	[redacted] m/s	↑	OFF
L	[redacted] m/s	Pu[redacted]ket	OFF
L	[redacted] m/s	↑	OFF
L	[redacted] m/s	↑	ON
L	[redacted] m/s	↑	ON
L	[redacted] m/s	[redacted]	OFF
R	[redacted] m/s	[redacted]	OFF
R	[redacted] m/s	↑	ON
R	[redacted] m/s	↑	ON
R	[redacted] m/s	↑	OFF
R	[redacted] m/s	↑	OFF
R	[redacted] m/s	↑	OFF
R	[redacted] m/s	Bo[redacted]g.)	OFF
R	[redacted] m/s	↑	ON
R	[redacted] m/s	4 pass[redacted]23kg)	ON
R	[redacted] m/s	↑	OFF
R	[redacted] m/s	Bod[redacted]g.)	ON
R	[redacted] m/s	↑	ON
R	[redacted] m/s	↑	OFF

Regardless of test vehicle status or condition, ON judgment is made near [redacted]m/s.

Based on recreation test result, for claimed 4 cases, it seems that the speed was [redacted]m/s or more when the door was shut.

Root Cause Analysis

- **Threshold Setting**

Current Threshold Setting

[redacted]

A Requirement mode (door strong shut [redacted] m/s) to ensure OFF margin by [redacted] % to insure SINCAP and SICE T-TTF

Root Cause Analysis

- **Comparison with other models**

List of Setting Result

MY	Model	Speed	OFF margin
05	Accord 2Dr TS-X RL	[redacted] m/s	[redacted]
06	CIVIC 4Dr CIVIC 2Dr		
07	CR-V US Fit		
08	Accord 4Dr Accord 2Dr TS-X		
09	US Fit		

*Target OFF Margin [redacted]

Target margin of [redacted]% is achieved when the door is shut strongly, but comparing to other models, OFF margin is smaller.

Other models that have proved track record ensure over [redacted]% OFF margin with [redacted] m/S data.

- **Countermeasure Options**

Modify the setting of threshold to ensure OFF margin over [redacted]% when door is slammed shut

Root Cause Analysis

- **Countermeasure Options**

New Threshold Setting

SIS1_L

[redacted]

Simulation Result with New Threshold

Impact Side	Speed	Test Vehicle Condition	Threshold Old	Threshold New
-	[redacted] m/s	[redacted]	OFF	OFF
-	m/s	↑	OFF	OFF
L	m/s	[redacted]	OFF	OFF
L	m/s	↑	OFF	OFF
L	m/s	↑	ON	OFF
L	m/s	↑	ON	OFF
L	m/s	[redacted]	OFF	OFF
R	m/s	[redacted]	OFF	OFF
R	m/s	↑	ON	OFF
R	m/s	↑	ON	OFF
R	m/s	↑	OFF	OFF
R	m/s	↑	OFF	OFF
R	m/s	↑	OFF	OFF
R	m/s	[redacted]	OFF	OFF
R	m/s	↑	ON	OFF
R	m/s	[redacted]	ON	OFF
R	m/s	↑	OFF	OFF
R	m/s	[redacted]	ON	OFF
R	m/s	↑	ON	OFF
R	m/s	↑	OFF	OFF

▪Ensured [redacted] % OFF margin with door slammed shut [redacted] m/s test data
▪All recreation test data can be OFF
→ If SINCAP TTF is the worst condition, there will be [redacted] ms delay but no passenger safety concern

Root Cause Analysis

- **Summary**
  - SRS Unit/SIS were not defective
  - Based on collision history and inner G data analog plot, collision judgment was properly made
  - Based on recreation test result, when door is slammed shut with over [redacted] m/s speed, judgment is made as ON
  - As for other models with proven track record in the market, [redacted] % OFF margin is secured with door strong shut [redacted] m/s data
  - New threshold setting ensures [redacted] % OFF margin when door is slammed shut with [redacted] m/s

MP design change shall be implemented with new threshold

Action Schedule

- **C/M Parts Schedule**

Item	April	May	June
・**Drawing Release**	☆ 16 [redacted] ☆ 21 [redacted] ☆ 22 [redacted] ☆ 23 [redacted]		
・**SRS Unit C/M Parts**	23 28 ▽ Continental Production Start @MEXICO	6 ▽ Arrive at MEI 12 ▽ JPN Shipment Arrives	

To be delivered to US MEI: May 6, Sayama JPN Shipment: May 12

Proposed Countermeasure

Css Product Planning Meeting
Room B
2008/4/21

Attendee

Chief Inspection Engineer: Usui

HGT Shindo, Oomoto
Sugamata
Css Tanaka, Nozaki
Matsumoto, Yamamoto

Report on 2PX Side Airbag Inadvertent Deployment by Slamming Door Shut

*See attached for details

Occurrence Status

4 cases (HAM die: 2 cases, Css CBU: 2 cases) * Production days are close

Analysis Result

Problem recreated when door is shut with [redacted] m/s force

Countermeasure

Modify existing threshold (For Css, Parts to be delivered on 5/12)

Actions for Sold Vehicles

No market action. Supply C/M parts once inventories are consumed.

Chief Inspection Engineer's Comment

Agree to the contents above.
Make sure to revisit requirement for the margin doors strongly closed.

- Proposed Countermeasure

Proposed Countermeasure

- **Failure Impact**

  ･This is product marketability issue

- **Occurrence Frequency**

  ･As of end of March, occurrence prediction of side airbag/side curtain airbag deployment with strong door closing is 0.0029% and low.
  (4 cases out of production volume 137903 units).

1：Since this is a marketability issue and occurrence is expected to be low, we would like to monitor the market instead of proactive market action
→ CSS Agreed

2：As for the existing inventory at Sayama and MAP, use them as is and when old inventories are exhausted, then switch to new C/M parts
→ CSS, MAP Agreed

Root Cause Analysis

- **Performance after C/M**

[redacted] v Threshold

Simulation Result by New Threshold

[redacted]

- [redacted]% OFF margin is ensured with door slammed shut by [redacted]m/s test data
- All recreation test data can be OFF
- With door closing force [redacted]m/s, [redacted]% OFF margin is ensured

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-2_MV200504161357749

Q8-27_Side curtain SRS and Side SRS deployed when doors are shut_QAH2552_Japanese_Redacted

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-2_MV200504161357749

Supplier Report

Q8-23_MV20080416135749

Conti Analysis Report

English_REDACTED

Title	Side-curtain SRS and side SRS deploy when closing door (QAH2552)
Part No.	77960-TA0-L010-M4
Part name	SRS unit
Control No.	MV20080416135749

[Analysis report]

Revised	Date	Revised	Date
9		4	
8		3	
7		2	2008/06/18
6		1	2008/06/02
5		1st edition	2008/05/29

CSC_08_0099_H08050036_B080618 June 18, 2008

Department: Continental Automotive Japan, Chassis & Safety, Passive Safety & ADAS, Quality Assurance

Approved by	Checked by	Issued by

Occurrence information (Symptom, No. of occurrences, Treatment)

1. Title : Side-curtain SRS and side SRS deploy when closing door (QAH2552)
2. Model : CP2 / 08M ACCORD
3. Part No. : 77960-TA0-L010-M4
4. Part production date : December 4, 2007
5. Serial No. of the part : C0FD01EMR3L
6. VIN : JHMCP26388C[redacted]
7. Mileage : 2,317 Mile
8. Vehicle production date : January 9, 2008
9. Vehicle registration date : February 25, 2008
10. Occurrence date : March 24, 2008
11. Location : U.S.A.
12. Occurrence situation

- When the customer closed a passenger-side door while the car stopped, passenger-side side-curtain SRS and side SRS deployed.
- Passenger-side side-curtain SRS and side SRS deployed when the customer closed a passenger-side door.

Mileage was 2,000 miles when the symptom occurred. Marks such as scratches are not confirmed.

* North America: 9 cases (HAM unit: 6 cases, Css unit: 3 cases)

13. HONDA AQAO analysis results

[SRS unit]

Appearance check results

(1) Abnormality such as scratch or deformation etc. is not found on appearance.

(2) Abnormality such as connector terminal bend or contaminant attachment etc. is not confirmed.

Operation check results

(1) Any operational failures are not recorded.

(2) There are records of R-side side-airbag and curtain airbag deployments.

Comprehension of facts (Failed parts analysis, Factor analysis, Product quality)

[Failed parts analysis results (Analyzed in Regensburg in Germany)]

[Appearance check]

SRS unit appearance check

Connector housing is broken.

Abnormality such as connector terminal bend or contaminant attachment etc. is not confirmed.

Side impact sensor and satellite safing sensor appearance check

Abnormality such as scratch or rust etc. is not confirmed.

Abnormality such as connector terminal bend or contaminant attachment etc. is not confirmed.

(Refer to attachments.)

[SRS unit records check]

Records in memory

	x0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x:	00	00	00	00	00	00	0C	00	00	00	00	00	00	00	AA	4A
1x:	[redacted]															
8x:	[redacted]						00	00	00	00	00	00	00	00	00	00

<- No failure recorded

L-side G trigger recorded

R-side side-airbag and curtain-airbag deployments recorded

Failure record (Fault memory)

Any failures are not recorded in the fault memory.

Crash record (Crash memory)

R-side side-airbag and R-side curtain airbag deployments are recorded.

L-side G trigger is recorded.

[Electrical function verification]

Function verification at each voltage and temperature

SRS unit and each sensor are confirmed to operate normally at each voltage and each temperature.

* Normal condition: Warning lamp shall turn off, and DTC shall not be stored.

Temperature	Voltage	Function test result: SRS unit
Low temp −30°C	10.5V	Normal
	13.5V	Normal
	15.5V	Normal
Normal temp	10.5V	Normal
	13.5V	Normal
	15.5V	Normal
High temp +80°C	10.5V	Normal
	13.5V	Normal
	15.5V	Normal

Temperature	Voltage	Function test result: SIS-1	SIS-2	SSS
Low temp −40°C	7.7V	Normal	Normal	Normal
	9V	Normal	Normal	Normal
	12V	Normal	Normal	Normal
Normal temp	7.7V	Normal	Normal	Normal
	9V	Normal	Normal	Normal
	12V	Normal	Normal	Normal
High temp +85°C	7.7V	Normal	Normal	Normal
	9V	Normal	Normal	Normal
	12V	Normal	Normal	Normal

G sensor sensitivity verification using a shaker (thrusting device)

Any abnormalities are not confirmed in crash recording fucntion, ignition abilities (ignition timing, ignition ON time) and G sensor sensitivity.

(Refer to attachments.)

Results: Ignition timing/Ignition ON duration

Test condition	Seat position sensor (NOT NEAR)			
	Ignition timing		Ignition ON duration	
Item	Spec Unit [ms]	Result Unit [ms]	Spec Unit [ms]	Result Unit [ms]
R-side airbag - 1st	[redacted]	57.3	[redacted]	2.2
L-side airbag - 1st	[redacted]	57.3	[redacted]	2.2
R-side airbag - 2nd	[redacted]	97.4	[redacted]	2.1
L-side airbag - 2nd	[redacted]	97.4	[redacted]	2.1
R-side retractor pre-tensioner	[redacted]	49.8	[redacted]	2.2
L-side retractor pre-tensioner	[redacted]	31.8	[redacted]	2.1
R-side side-curtain airbag	[redacted]	49.8	[redacted]	2.2
L-side side-curtain airbag	[redacted]	31.8	[redacted]	2.1
R-side side-airbag	[redacted]	49.8	[redacted]	2.1
L-side side-airbag	[redacted]	31.8	[redacted]	2.1

Results: G sensor sensitivity

Unit name, Sensor name	Sensor sensitivity: Spec	Sensor sensitivity: Result	Sensor offset: Spec	Sensor offset: Result
SRS[redacted]	Impact testing waveform [redacted]%	−4.73 %	On sensing axis [redacted] digits	−1 digits
[redacted]unit Y direction	Impact testing waveform [redacted]%	0.51 %	On sensing axis [redacted] digits	±0 digits
Side impact sensor 1	Impact testing waveform [redacted]%	−3.62 %	On sensing axis [redacted] digits	±0 digits
Side impact sensor 2	Impact testing waveform [redacted]%	−2.51 %	On sensing axis [redacted] digits	±0 digits
Satellite safing sensor	Impact testing waveform [redacted]%	−2.24 %	On sensing axis [redacted] digits	±0 digits

[Visual inspection for the inside of the unit]

Any abnormalities such as contaminant attachment or solder joints etc. are not confirmed inside the unit.

(Refer to the attachments.)

[Conclusion]

From the testing results above, the unit is determined to have operated normally without abnormality.

Failure is not recorded.

Cause identification(Occurrence mechanism, Recreation testing, Why-Why analysis)

We checked data recorded in the SRS unit. From the data, we have determined that, The level of sensed acceleration by door closing exceeded high-speed side crash judgment level, thus, the SRS unit judged to deploy the side-curtain airbag.

Why-Why analysis

Step	1	2	3	4	5
Content	Side-curtain SRS and side airbag deployed when the customer closed a door.	The level of sensed acceleration by door closing exceeded high-speed side crash judgment level, thus, the SRS unit judged to deploy the side-curtain airbag.	Occurrence		
			Outflow		

Countermeasure (Countermeasure contents, Countermeasure effectiveness, PPA)

Change threshold of SRS unit side impact by design change

(Design change No.: C48-2-1702 Issued on April 23, 2008)

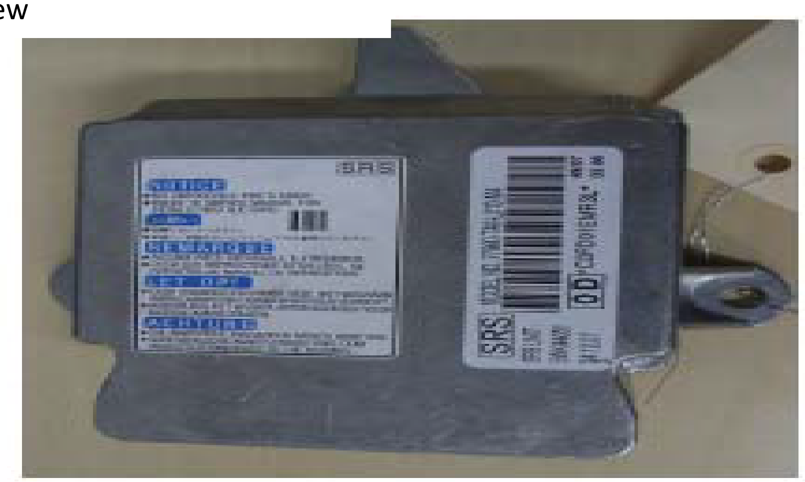
Countermeasure effectiveness confirmation

Feedback

Visual check results

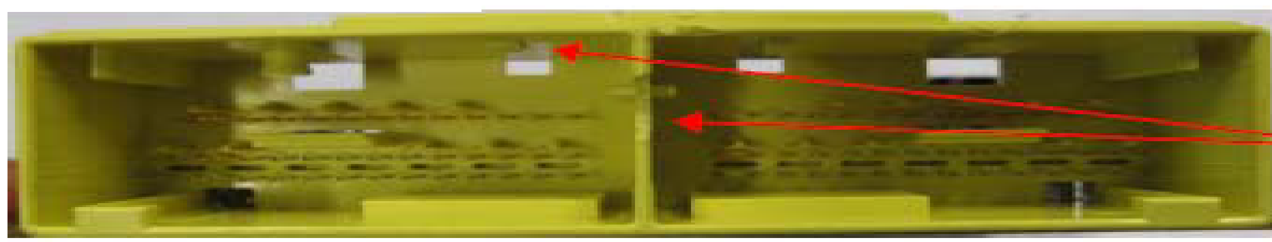
1. SRS unit

Unit TOP view



Bottom view

Connector



Breakage on the housing connector

2. Side impact sensor

シリアルNo.　G0WW0LYMN80

シリアルNo.　G0WW0M03V70

3. Satellite safing sensor

シリアルNo.　L0ZS04GZNX0

Shaker test

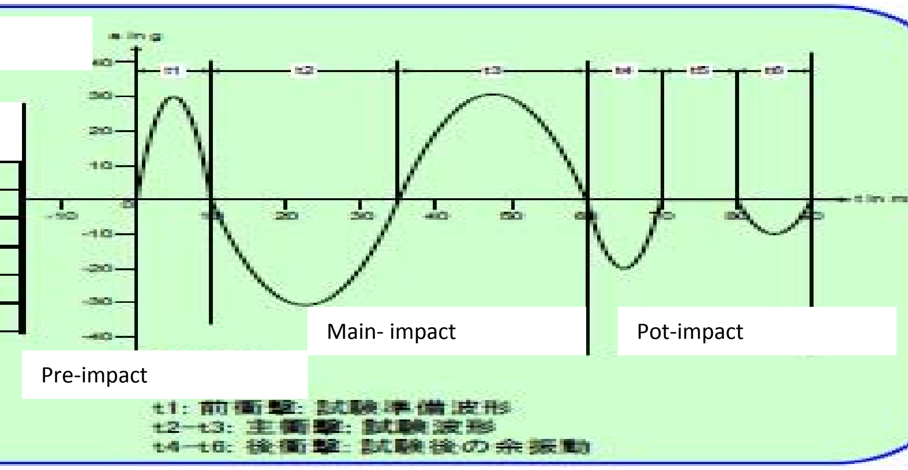
Method

Market returned parts are attached to shaker equipment at 45 degrees against the X, and Y axis. Then the following waveform is applied.
Impact is applied once to confirm sensitivity of X, and Y axis.

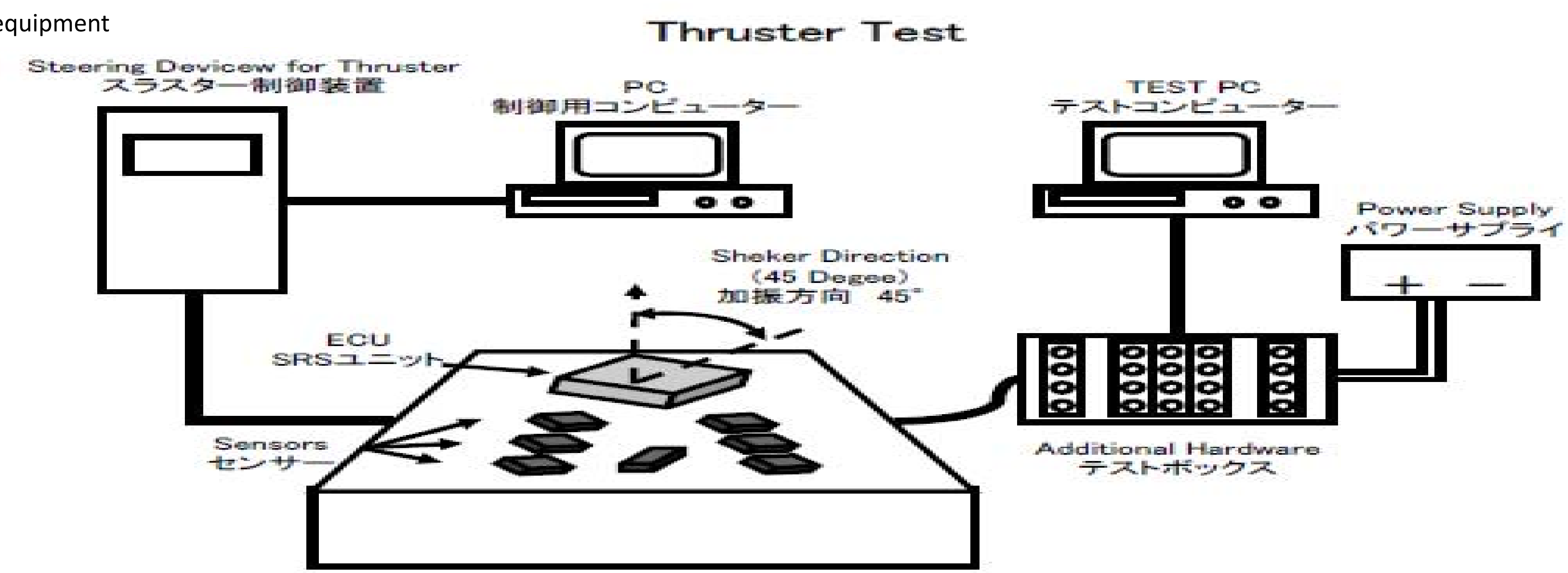
Impact test waveforms

This waveform represents one impact waveform by shaker.

Time		Peak acceleration		
t1	10 ms	28.6 g	29.8 g	30.7 g
t2	25 ms	-35 g	-31.8 g	-28.6 g
t3	25 ms	28.6 g	31.8 g	35 g
t4	10 ms	-21.8 g	-19.8 g	-17.8 g
t5	10 ms		0.0 g	
t6	10 ms	-10.9 g	-9.9 g	8.9 g



Test equipment



*Supplemental explanation
SRS unit, side impact sensor, satellite safing sensor, and front crush sensor are attached on the shaker table, and impact is applied.

Shaker test results

Ignition timing/ignition on duration

Test conditions	seat position sensor - NOT NEAR				
	Ignition timing		Ignition ON duration		
Items	Spec	Measuring data	Spec	Measuring data	Judgment
	単位[ms]	単位[ms]	単位[ms]	単位[ms]	
R side airbag 1st stage	[redacted]	57.3	[redacted]	2.2	Normal
L side airbag 1st stage	[redacted]	57.3	[redacted]	2.2	Normal
R side airbag 2nd stage	[redacted]	97.4	[redacted]	2.1	Normal
L side airbag 2nd stage	[redacted]	97.4	[redacted]	2.1	Normal
R side retractor pretentioner	[redacted]	49.8	[redacted]	2.2	Normal
L side retractor pretentioner	[redacted]	31.8	[redacted]	2.1	Normal
R side curtain airbag	[redacted]	49.8	[redacted]	2.2	Normal
L side curtain airbag	[redacted]	31.8	[redacted]	2.1	Normal
R side airbag	[redacted]	49.8	[redacted]	2.1	Normal
L side airbag	[redacted]	31.8	[redacted]	2.1	Normal

Test conditions	seat position sensor - NEAR				
	Ignition timing		Ignition ON duration		
Items	Spec	Measuring data	Spec	Measuring data	Judgment
	単位[ms]	単位[ms]	単位[ms]	単位[ms]	
R side airbag 1st line	[redacted]	57.1	[redacted]	2.1	Normal
L side airbag 1st line	[redacted]	57.1	[redacted]	2.1	Normal
R side airbag 2nd line	[redacted]	97.1	[redacted]	2.2	Normal
L side airbag 2nd line	[redacted]	157.1	[redacted]	2.1	Normal
R side retractor pretentioner	[redacted]	49.6	[redacted]	2.1	Normal
L side retractor pretentioner	[redacted]	32.1	[redacted]	2.1	Normal
R side curtain airbag	[redacted]	49.6	[redacted]	2.1	Normal
L side curtain airbag	[redacted]	32	[redacted]	2.2	Normal
R side airbag	[redacted]	49.6	[redacted]	2.1	Normal
L side airbag	[redacted]	32	[redacted]	2.2	Normal

Test conditions	Buckle switch for detecting fastening seat belt - OFF				
	Ignition timing		Ignition ON duration		
Items	Spec	Measuring data	Spec	Measuring data	Judgment
	単位[ms]	単位[ms]	単位[ms]	単位[ms]	
R side airbag 1st line	[redacted]	56.5	[redacted]	2.2	Normal
L side airbag 1st line	[redacted]	56.5	[redacted]	2.2	Normal
R side airbag 2nd line	[redacted]	96.6	[redacted]	2.2	Normal
L side airbag 2nd line	[redacted]	96.6	[redacted]	2.2	Normal
R side retractor pretentioner	[redacted]	No ignition	[redacted]	No ignition	Normal
L side retractor pretentioner	[redacted]	No ignition	[redacted]	No ignition	Normal
R side curtain airbag	[redacted]	49.5	[redacted]	2.2	Normal
L side curtain airbag	[redacted]	32	[redacted]	2.2	Normal
R side airbag	[redacted]	49.5	[redacted]	2.2	Normal
L side airbag	[redacted]	32	[redacted]	2.2	Normal

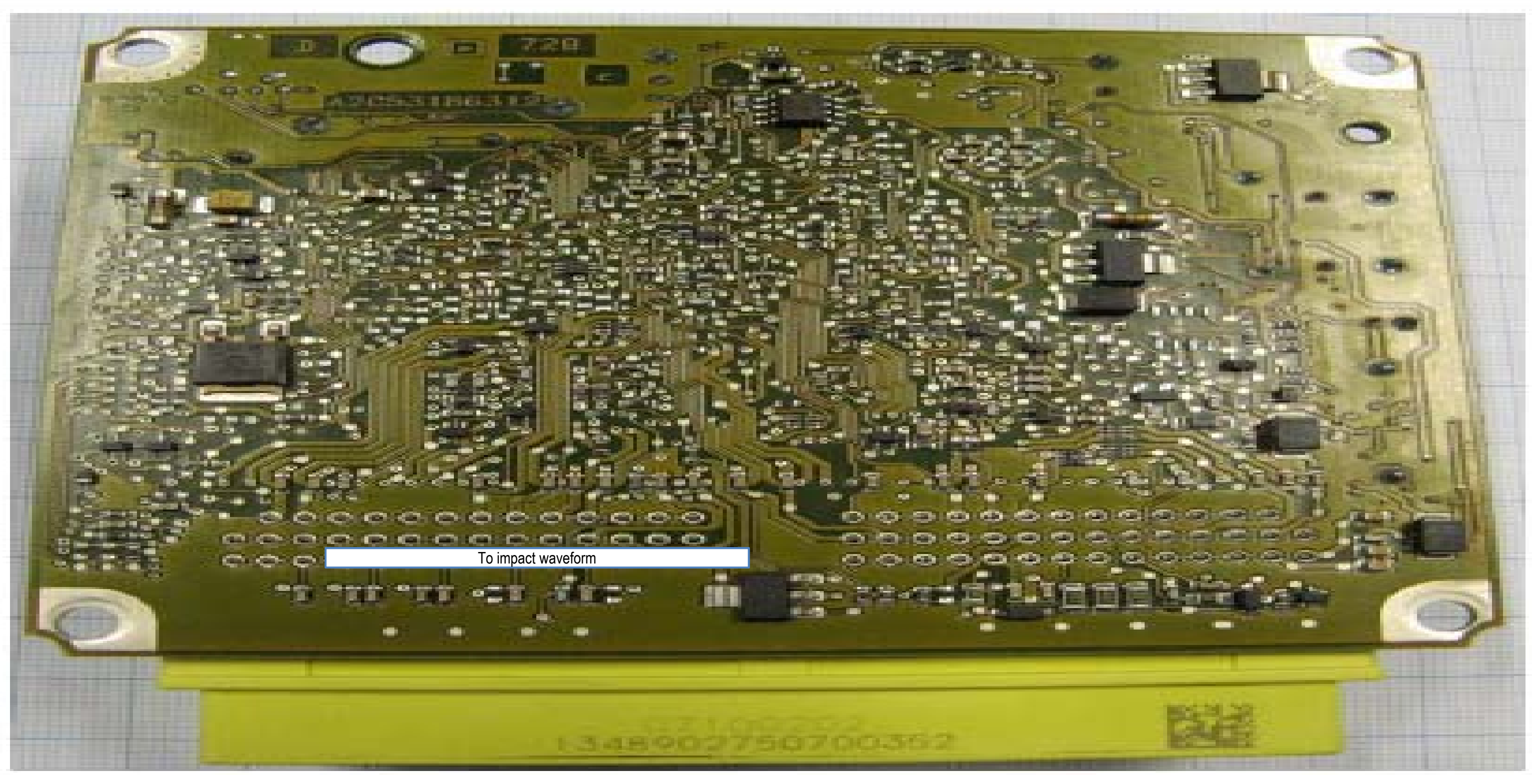
Result: G sensor sensitivity

Unit name, sensor name	Sensor sensitivity		Sensor offset		Judgment
	Spec	Measuring data	Spec (digit)	Measuring data(digit)	
SRS unit X direction	To impact waveform [redacted] %	−4.73 %	To axis [redacted] 度	−1 度	Normal
SRS unit Y direction	To impact waveform [redacted] %	0.51 %	To impact waveform [redacted] 度	±0 度	Normal
Side impact sensor 1	To impact waveform [redacted] %	−3.62 %	To impact waveform [redacted] 度	±0 度	Normal
Side impact sensor 2	To impact waveform [redacted] %	−2.51 %	To impact waveform [redacted] 度	±0 度	Normal
Satellite safing sensor	To impact waveform [redacted] %	−2.24 %	To impact waveform [redacted] 度	±0 度	Normal

Board

TOP

BOTTOM



Attachment : revision history

No.	Date	Contents
初版	2008／05／29	Initial version issued
1	2008／06／02	Design change number added to the C/M. Parts change date at Css updated.
2	2008／06／18	C/M parts application planned date deleted. Analysis report misword corrected.
3		
4		
5		
6		
7		
8		

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-2_MV200504161357749

Supplier Report

Q8-23_MV20080416135749

Conti Analysis

Report_Japanese_REDACTED

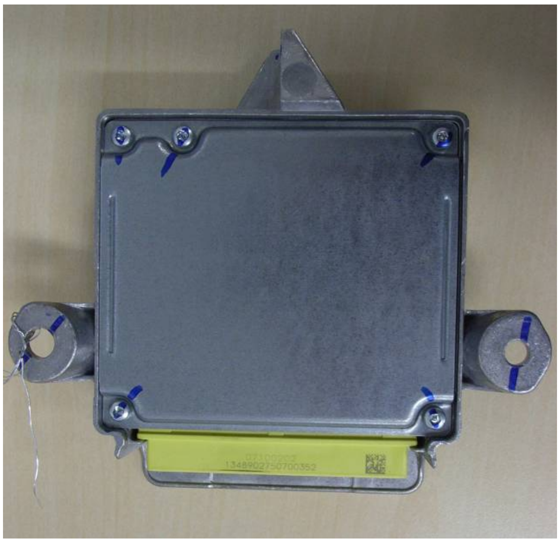
[redacted]

外観確認結果

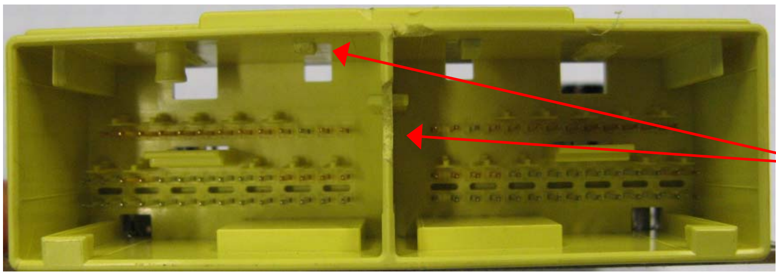
1. SRSユニット

ユニット表

ユニット裏



コネクター



コネクタ　ハウジングに破損あり。

2. サイドインパクトセンサー

シリアルNo.　G0WW0LYMN80

シリアルNo.　G0WW0M03V70

3. サテライトセーフィングセンサー

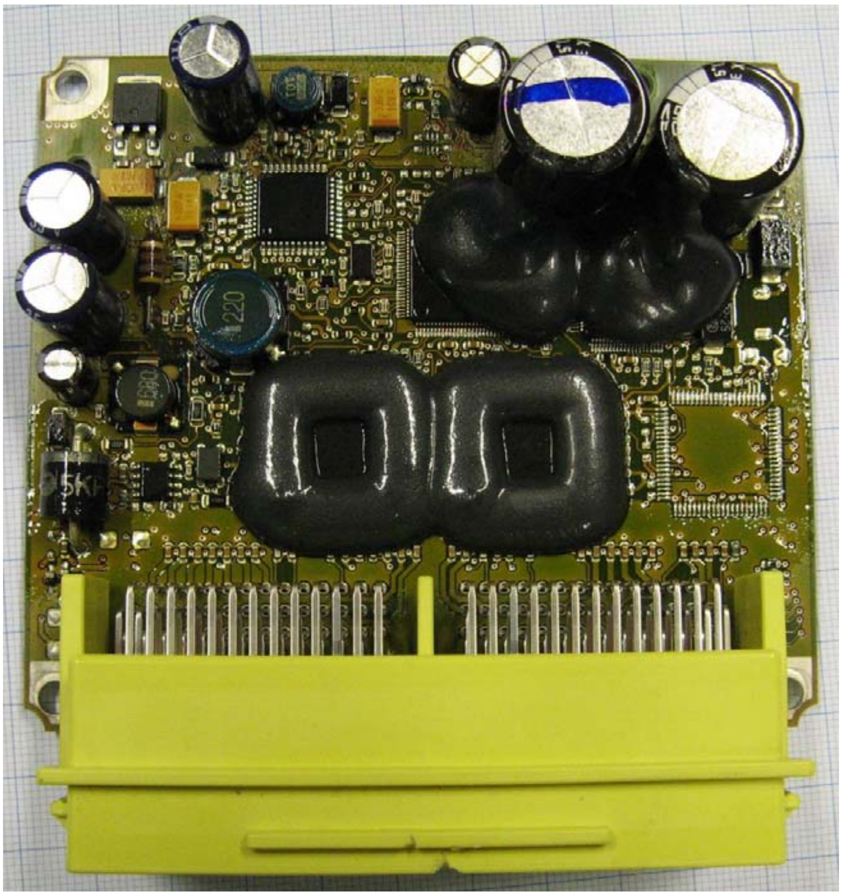
シリアルNo.　L0ZS04GZNX0

[redacted]

[redacted]

基板写真

表



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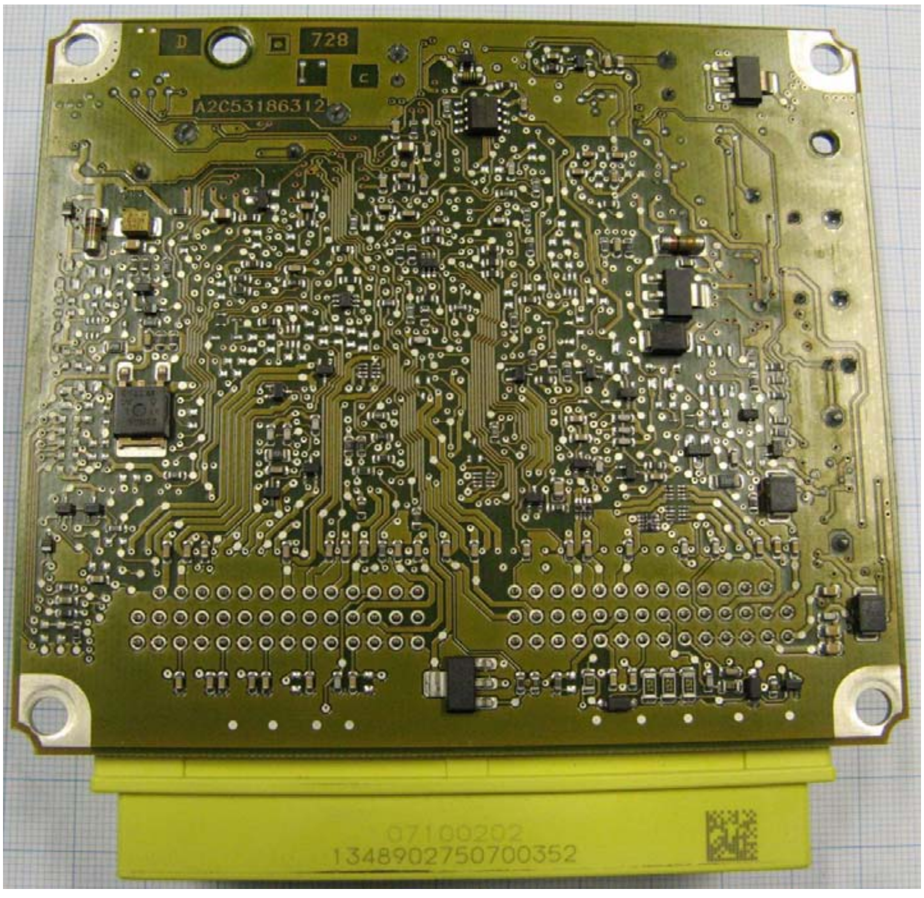


[redacted]

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-2_MV2005041613577749

Supplier Report

Q8-24_MV2008041613574 9
Conti Analysis Report
English_REDACTED

[Analysis report]

Title	Side-curtain SRS and side SRS deploy when closing door (QAH2552)
Part No.	77960-TA0-L010-M4
Part name	SRS unit
Control No.	MV20080416135749

Revised	Date	Revised	Date
9		4	
8		3	
7		2	
6		1	2008/06/18
5		1st edition	2008/06/06

CSC_08_0106_H08050039_A080618 June 18, 2008

Department: Continental Automotive Japan
Chassis & Safety
Passive Safety & ADAS
Quality Assurance

Approved by	Checked by	Issued by

Occurrence information (Symptom, No. of occurrences, Treatment)

1. Title : Side-curtain SRS and side SRS deploy when closing door (QAH2552)
2. Model : CP2 / 08M ACCORD
3. Part No. : 77960-TA0-L010-M4
4. Part production date : December 4, 2007
5. Serial No. of the part : C0FD01EM53%
6. VIN : JHMCP26828C[redacted]
7. Mileage : 1,948 Mile
8. Vehicle production date : January 10, 2008
9. Vehicle registration date : February 18, 2008
10. Occurrence date : March 24, 2008
11. Location : U.S.A.
12. Occurrence situation
- When the customer closed a door, R-side side-curtain airbag deployed.
* North America: 9 cases (HAM unit: 6 cases, Css unit: 3 cases)

13. HONDA AQAO analysis results
[SRS unit]
Appearance check results
(1) Abnormality such as scratch or deformation etc. is not found on appearance.
(2) Abnormality such as connector terminal bend or contaminant attachment etc. is not confirmed.
Operation check results
(1) Any operational failures are not recorded.
(2) There are records of R-side side-airbag and curtain airbag deployments.

Comprehension of facts (Failed parts analysis, Factor analysis, Product quality)

[Failed parts analysis results (Analyzed in Regensburg in Germany)]

[Appearance check]
SRS unit appearance check
Abnormality such as external damages or deformations etc. is not confirmed
Abnormality such as connector terminal bend or contaminant attachment etc. is not confirmed.
Side impact sensor and satellite safing sensor appearance check
Abnormality such as scratch or rust etc. is not confirmed.
Abnormality such as connector terminal bend or contaminant attachment etc. is not confirmed.
(Refer to attachments.)
[SRS unit records check]
Records in memory

	x0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x	00	00	00	00	00	00	0C	00	00	00	00	00	00	00	AA	4A
1x	[redacted]															
8x	[redacted]						00	00	00	00	00	00	00	00	00	00

<- No failure recorded
L-side G trigger recorded
R-side curtain-airbag deployment recorded

Failure record (Fault memory)
Any failures are not recorded in the fault memory.
Crash record (Crash memory)
R-side curtain airbag deployment is recorded.
L-side G trigger is recorded.
[Electrical function verification]
Function verification at each voltage and temperature
SRS unit and each sensor are confirmed to operate normally at each voltage and each temperature.
* Normal condition: Warning lamp shall turn off, and DTC shall not be stored.

Temperature	Voltage	Function test result: SRS unit
Low temp −30℃	10.5V	Normal
	13.5V	Normal
	15.5V	Normal
Normal temp	10.5V	Normal
	13.5V	Normal
	15.5V	Normal
High temp +80℃	10.5V	Normal
	13.5V	Normal
	15.5V	Normal

Temperature	Voltage	Function test result		
		SIS-1	SIS-2	SSS
Low temp −40℃	7.7V	Normal	Normal	Normal
	9V	Normal	Normal	Normal
	12V	Normal	Normal	Normal
Normal temp	7.7V	Normal	Normal	Normal
	9V	Normal	Normal	Normal
	12V	Normal	Normal	Normal
High temp +85℃	7.7V	Normal	Normal	Normal
	9V	Normal	Normal	Normal
	12V	Normal	Normal	Normal

G sensor sensitivity verification using a shaker (thrusting device)
Any abnormalities are not confirmed in crash recording fucntion, ignition abilities (ignition timing, ignition ON time) and G sensor sensitivity.
(Refer to attachments.)
Results: Ignition timing/Ignition ON duration

Test condition	Seat position sensor (NOT NEAR)			
Item	Ignition timing		Ignition ON duration	
	Spec Unit [ms]	Result Unit [ms]	Spec Unit [ms]	Result Unit [ms]
R-side airbag - 1st	[redacted]	56.7	[redacted]	2.2
L-side airbag - 1st	[redacted]	56.7	[redacted]	2.2
R-side airbag - 2nd	[redacted]	96.8	[redacted]	2.1
L-side airbag - 2nd	[redacted]	96.8	[redacted]	2.1
R-side retractor pre-tensioner	[redacted]	49.7	[redacted]	2.2
L-side retractor pre-tensioner	[redacted]	31.7	[redacted]	2.1
R-side side-curtain airbag	[redacted]	49.7	[redacted]	2.2
L-side side-curtain airbag	[redacted]	31.7	[redacted]	2.1
R-side side-airbag	[redacted]	49.7	[redacted]	2.1
L-side side-airbag	[redacted]	31.7	[redacted]	2.1

Results: G sensor sensitivity

Unit name, Sensor name	Sensor sensitivity		Sensor offset	
	Spec	Result	Spec	Result
SRS unit X direction	Impact testing waveform [redacted] %	−3.12 %	On sensing axis [redacted] digits	±0 digits
SRS unit Y direction	Impact testing waveform [redacted] %	0.05 %	On sensing axis [redacted] digits	±0 digits
Side impact sensor 1	Impact testing waveform [redacted] %	−3.05 %	On sensing axis [redacted] digits	±0 digits
Side impact sensor 2	Impact testing waveform [redacted] %	−1.18 %	On sensing axis [redacted] digits	±0 digits
Satellite safing sensor	Impact testing waveform [redacted] %	0.61 %	On sensing axis [redacted] digits	±0 digits

[Visual inspection for the inside of the unit]
Any abnormalities such as contaminant attachment or solder joints etc. are not confirmed inside the unit.
(Refer to the attachments.)

[Conclusion]
From the testing results above, the unit is determined to have operated normally without abnormality.
Failure is not recorded.

Cause identification(Occurrence mechanism, Recreation testing, Why-Why analysis)

We checked data recorded in the SRS unit. From the data, we have determined that, The level of sensed acceleration by door closing exceeded high-speed side crash judgment level, thus, the SRS unit judged to deploy the side-curtain airbag.

Countermeasure (Countermeasure contents, Countermeasure effectiveness, PPA)

Change threshold of SRS unit side impact by design change
(Design change No.: C48-2-1702 Issued on April 23, 2008)

Countermeasure effectiveness confirmation

Why-Why analysis

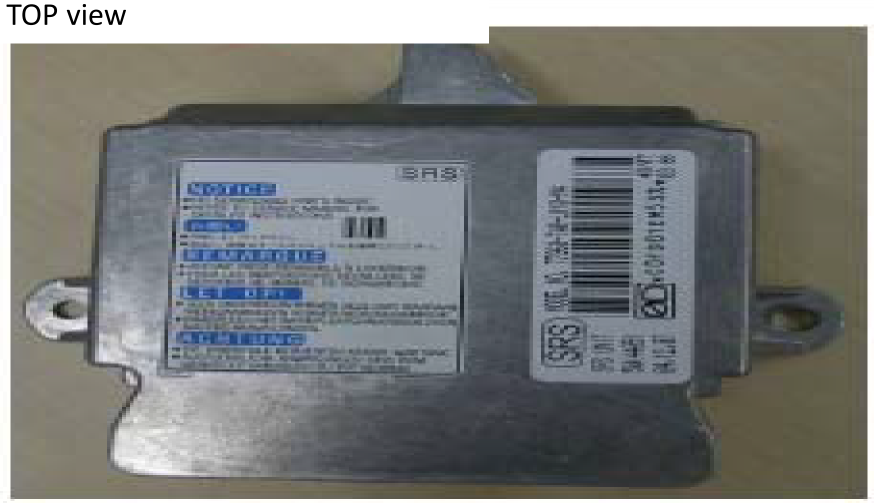
Step	1	2		3	4	5
Content	Side-curtain airbag deployed when the customer closed a door.	~~A~~ The level of sensed acceleration by door closing exceeded high-speed side crash judgment level, thus, the SRS unit judged to deploy the side-curtain airbag.	Occurrence			
			Outflow			

Feedback

Visual check results

1. SRS unit

Unit TOP view



Bottom view

Connector

2. Side impact sensor

シリアルNo.　G0WWOLVUZP0

シリアルNo.　G0WWOLVW4$0

3. Satellite safing sensor

シリアルNo.　L0ZSO4GW9G0

Shaker test

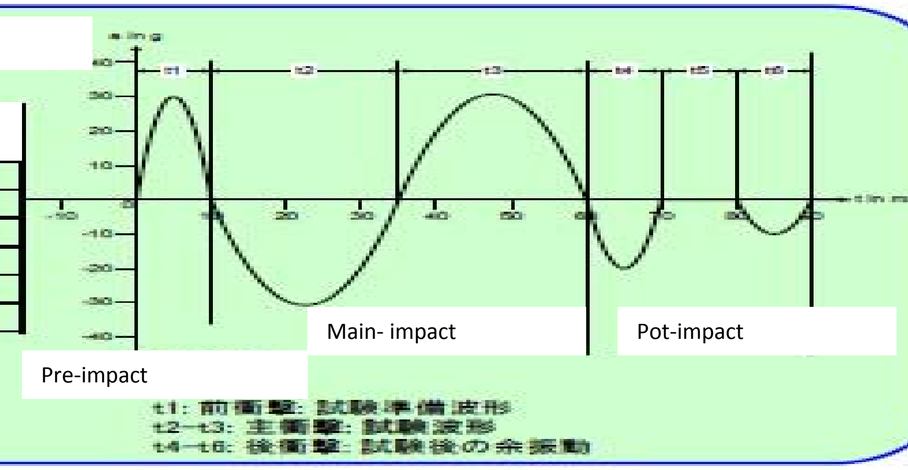
Method

Market returned parts are attached to shaker equipment at 45 degrees against the X, and Y axis. Then the following waveform is applied.
Impact is applied once to confirm sensitivity of X, and Y axis.

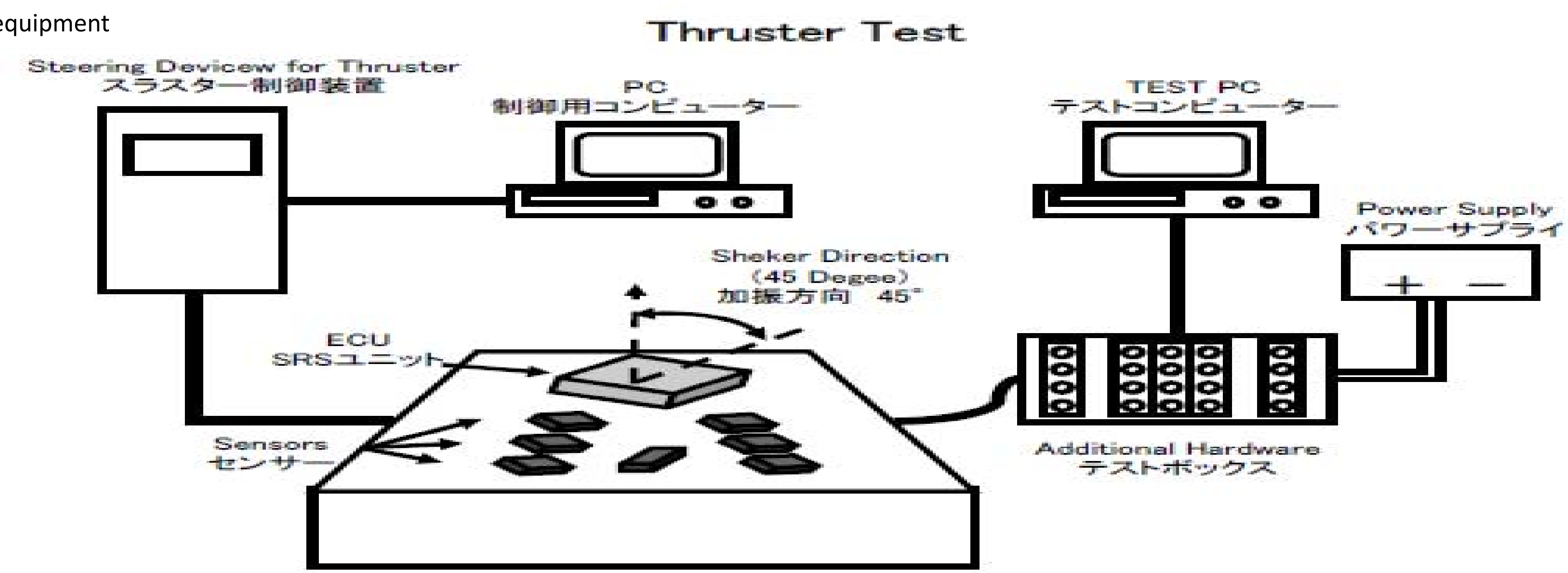
Impact test waveforms

This waveform represents one impact waveform by shaker.

Time		Peak acceleration		
t1	10 ms	28.6 g	29.8 g	30.7 g
t2	25 ms	-35 g	-31.8 g	-28.6 g
t3	25 ms	28.6 g	31.8 g	35 g
t4	10 ms	-21.8 g	-19.8 g	-17.8 g
t5	10 ms		0.0 g	
t6	10 ms	-10.9 g	-9.9 g	8.9 g



Test equipment



*Supplemental explanation
SRS unit, side impact sensor, satellite safing sensor, and front crush sensor are attached on the shaker table, and impact is applied.

Shaker test results

Ignition timing/ignition on duration

Test conditions	seat position sensor - NOT NEAR				Judgment
	Ignition timing		Ignition ON duration		
Items	Spec	Measuring data	Spec	Measuring data	
	単位[ms]	単位[ms]	単位[ms]	単位[ms]	
R side airbag 1st stage	[redacted]	56.7	[redacted]	2.2	Normal
L side airbag 1st stage	[redacted]	56.7	[redacted]	2.2	Normal
R side airbag 2nd stage	[redacted]	96.8	[redacted]	2.1	Normal
L side airbag 2nd stage	[redacted]	96.8	[redacted]	2.1	Normal
R side retractor pretentioner	[redacted]	49.7	[redacted]	2.2	Normal
L side retractor pretentioner	[redacted]	31.7	[redacted]	2.1	Normal
R side curtain airbag	[redacted]	49.7	[redacted]	2.2	Normal
L side curtain airbag	[redacted]	31.7	[redacted]	2.1	Normal
R side airbag	[redacted]	49.7	[redacted]	2.1	Normal
L side airbag	[redacted]	31.7	[redacted]	2.1	Normal

Test conditions	seat position sensor - NEAR				Judgment
	Ignition timing		Ignition ON duration		
Items	Spec	Measuring data	Spec	Measuring data	
	単位[ms]	単位[ms]	単位[ms]	単位[ms]	
R side airbag 1st line	[redacted]	56.5	[redacted]	2.2	Normal
L side airbag 1st line	[redacted]	56.5	[redacted]	2.2	Normal
R side airbag 2nd line	[redacted]	96.6	[redacted]	2.1	Normal
L side airbag 2nd line	[redacted]	156.5	[redacted]	2.2	Normal
R side retractor pretentioner	[redacted]	49.5	[redacted]	2.2	Normal
L side retractor pretentioner	[redacted]	32	[redacted]	2.1	Normal
R side curtain airbag	[redacted]	49.5	[redacted]	2.2	Normal
L side curtain airbag	[redacted]	32	[redacted]	2.1	Normal
R side airbag	[redacted]	49.5	[redacted]	2.1	Normal
L side airbag	[redacted]	32	[redacted]	2.1	Normal

Test conditions	Buckle switch for detecting fastening seat belt - OFF				Judgment
	Ignition timing		Ignition ON duration		
Items	Spec	Measuring data	Spec	Measuring data	
	単位[ms]	単位[ms]	単位[ms]	単位[ms]	
R side airbag 1st line	[redacted]	56.9	[redacted]	2.2	Normal
L side airbag 1st line	[redacted]	56.9	[redacted]	2.2	Normal
R side airbag 2nd line	[redacted]	97	[redacted]	2.2	Normal
L side airbag 2nd line	[redacted]	97	[redacted]	2.2	Normal
R side retractor pretentioner	[redacted]	No ignition	[redacted]	No ignition	Normal
L side retractor pretentioner	[redacted]	No ignition	[redacted]	No ignition	Normal
R side curtain airbag	[redacted]	49.9	[redacted]	2.2	Normal
L side curtain airbag	[redacted]	31.9	[redacted]	2.2	Normal
R side airbag	[redacted]	49.9	[redacted]	2.2	Normal
L side airbag	[redacted]	31.9	[redacted]	2.2	Normal

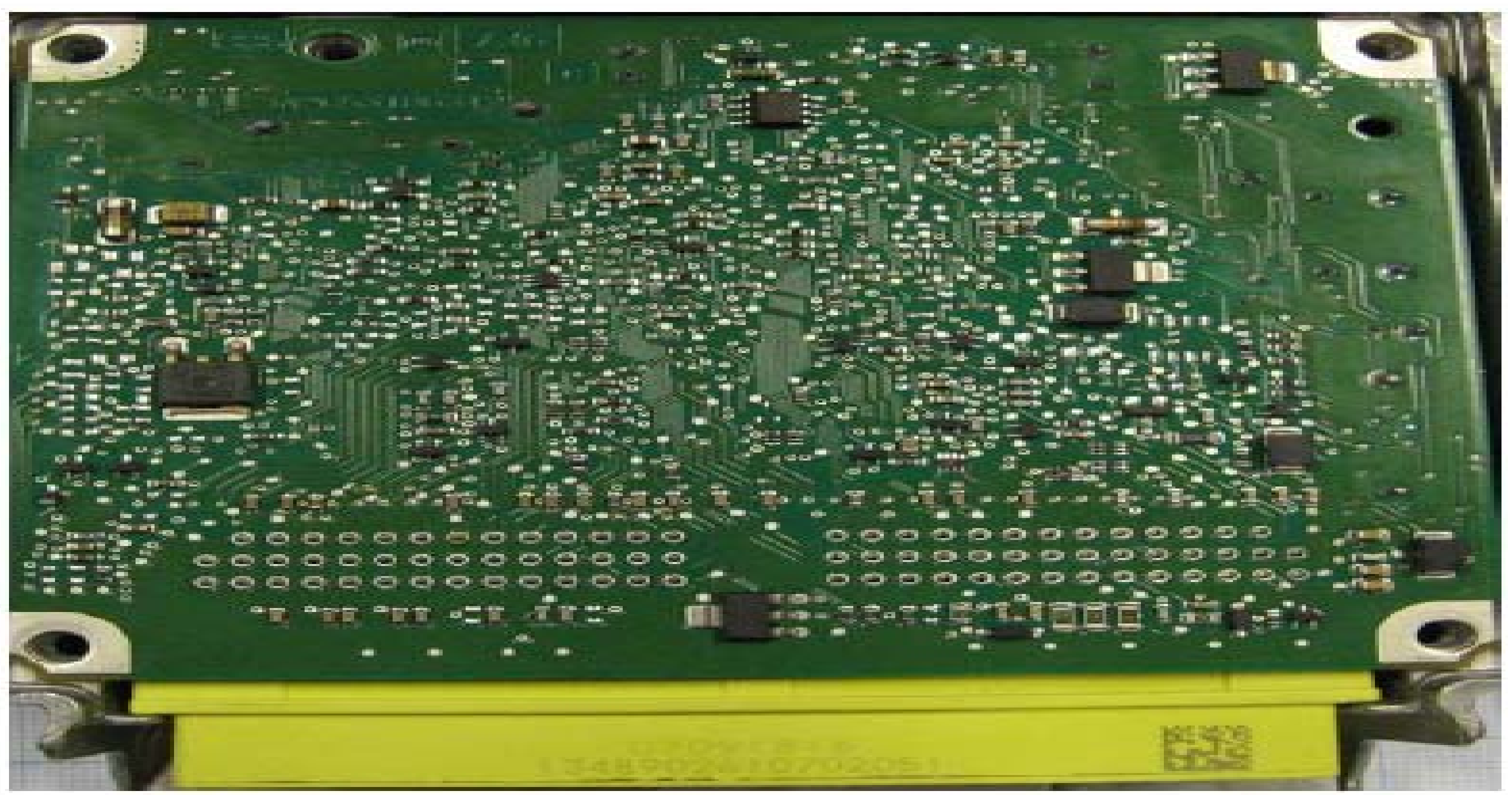
Result: G sensor sensitivity

Unit name, sensor name	Sensor sensitivity		Sensor offset		Judgment
	Spec	Measuring data	Sepc (digit)	Measuring data(digit)	
SRS unit X direction	To impact waveform [redacted] %	−3.12 %	To axis [redacted] 度	±0 度	Normal
SRS unit Y direction	To impact waveform [redacted] %	0.05 %	To impact waveform [redacted] 度	±0 度	Normal
Side impact sensor 1	To impact waveform [redacted] %	−3.05 %	To impact waveform [redacted] 度	±0 度	Normal
Side impact sensor 2	To impact waveform [redacted] %	−1.18 %	To impact waveform [redacted] 度	±0 度	Normal
Satellite safing sensor	To impact waveform [redacted] %	0.61 %	To impact waveform [redacted] 度	±0 度	Normal

Board

TOP

BOTTOM



Attachment : revision history

No.	Date	Contents
初版	2008/06/06	Initial version issued
1	2008/06/18	C/M parts application planned date deleted.
2		
3		
4		
5		
6		
7		
8		

EA14-004

HONDA

11/10/2014

QUESTION 8

Q8-2_MV2005041613577749

Supplier Report

Q8-24_MV20080416135749
Conti Analysis
Report_Japanese_REDACTED

[redacted]

外観確認結果

1. SRSユニット

ユニット表

ユニット裏

コネクター

2. サイドインパクトセンサー

シリアルNo.　G0WWOLVUZP0

シリアルNo.　G0WWOLVW4$0

3. サテライトセーフィングセンサー

シリアルNo.　L0ZSO4GW9G0

[redacted]

[redacted]

基板写真

表

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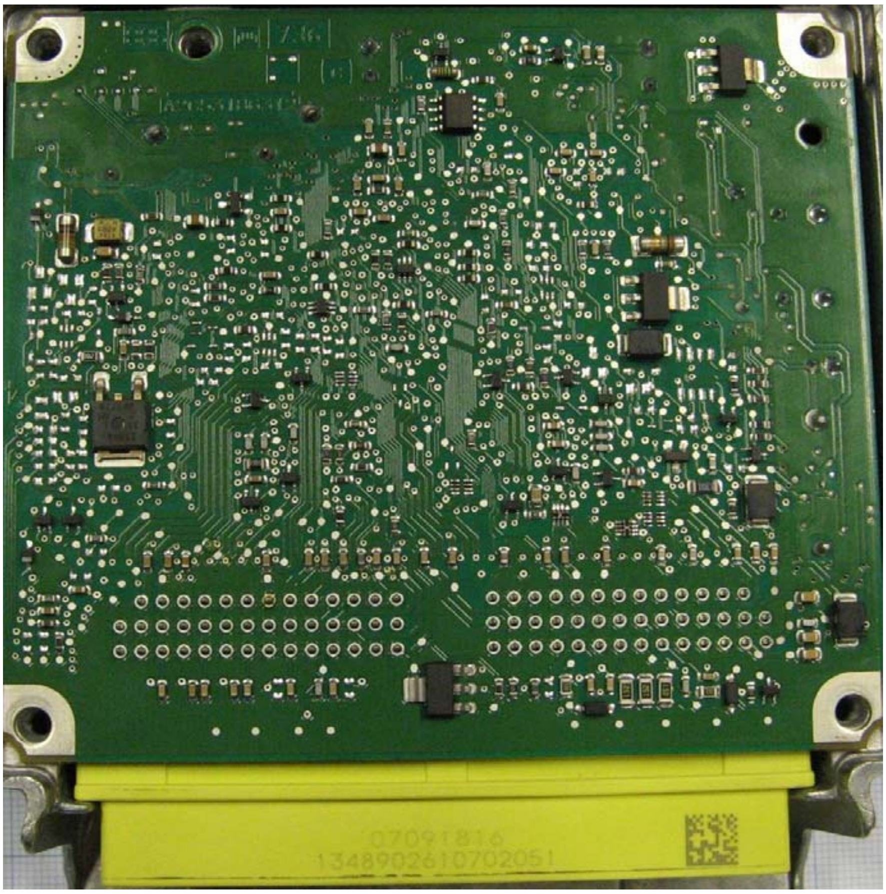

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EA14-004

HONDA

11/10/2014

QUESTION 9

08ACMOU-01

TEST REPORT

SIDE IMPACT PROTECTION

TEST REPORT NO. : 08ACMOU-01

LABORATORY :

Name : Certification & Regulation Compliance Division, Tochigi Office, Honda Motor Co., Ltd.
Address : 1-10-1 Shin-Sayama, Sayama City, Saitama Prefecture, Japan

DATE OF TEST : May 9, 2007 to May 15, 2007

TEST VEHICLE IDENTIFICATION :

Model Year	: 2008
Make	: HONDA
Model	: ACCORD SEDAN
Transmission	: 5A/T
Vehicle Identification Number	: JHMCP26748C[redacted]

TEST DESCRIPTION :

STATIC TEST

Test Type:

Seat-mounted:	X
Side-mounted:	
Roof-rail-mounted:	

Side Air Bag System:

	Front Row	Second Row	Third Row
Seat-mounted:	X		
Side-mounted:			
Roof-rail-mounted:	X	X	
Symmetrical:	X	X	

DYNAMIC TEST

In Accordance With:

X	FMVSS No.214	Report No.:	08AC214-03/05
	ECE No.95	Report No.:	

TEST RESULT :

[X] **PASS** [ ] **FAIL**

SIGNATURE : K. Misonou **DATE :** Aug. 3, 2007

NAME : Kei Misonou

TITLE : Manager of Vehicle Testing Department, Sayama Laboratory

ADDRESS : 1-10-1 Shin-Sayama, Sayama City, Saitama Prefecture, Japan

TABLE OF CONTENTS

TEST VEHICLE SPECIFICATIONS AND CONDITIONS

HYBRID III 3-YEAR-OLD CHILD DUMMY

X	**FRONT ROW** AIR BAG SELECTION	FORWARD FACING ON BOOSTER SEAT	REARWARD FACING	OUTBOARD FACING	INBOARD FACING	LYING ON SEAT, HEAD ON ARMREST	LYING ON SEAT
X	Seat-Mounted	X*1	X			X	X
	Side-Mounted			*1 The side air bag is deactivated through conductive cloth fitted on the dummy whose neck is modified for easy bending, thus simulating real human being, but the side curtain air bag remains activated and contacts the head of the dummy.			
	Roof-Rail-Mounted						
	Dummy ID Number	3391	3391			3391	3391
	Temperature (^{o}C)	21.0	21.3			21.5	21.2
	Humidity (%)	56	30			47	35
	Soak Time (hours)	4	4			4	4
Seat	Seat Slide	14 detents rearward from the first locking detent	9 detents rearward from the first locking detent			24 detents rearward from the first locking detent	24 detents rearward from the first locking detent
Seat	Seat Height	Fixed					
Seat	Seat Back	4 detents rearward from the first locking detent					

	SECOND ROW AIR BAG SELECTION	FORWARD FACING ON BOOSTER SEAT	REARWARD FACING	OUTBOARD FACING	INBOARD FACING	LYING ON SEAT, HEAD ON ARMREST	LYING ON SEAT
	Seat-Mounted						
	Side-Mounted						
	Roof-Rail-Mounted						
	Dummy ID Number						
	Temperature (^{o}C)						
	Humidity (%)						
	Soak Time (hours)						
Seat	Seat Slide						
Seat	Seat Height						
Seat	Seat Back						

TEST VEHICLE SPECIFICATIONS AND CONDITIONS

HYBRID III 3-YEAR-OLD CHILD DUMMY

☐ THIRD ROW AIR BAG SELECTION		FORWARD FACING ON BOOSTER SEAT	REARWARD FACING	OUTBOARD FACING	INBOARD FACING	LYING ON SEAT, HEAD ON ARMREST	LYING ON SEAT
☐	Seat-Mounted						
☐	Side-Mounted						
☐	Roof-Rail-Mounted						
Dummy ID Number							
Temperature (°C)							
Humidity (%)							
Soak Time (hours)							
Seat	Seat Slide						
Seat	Seat Height						
Seat	Seat Back						

TEST VEHICLE SPECIFICATIONS AND CONDITIONS

HYBRID III 6-YEAR-OLD CHILD DUMMY

X FRONT ROW AIR BAG SELECTION			FORWARD FACING ON BOOSTER SEAT	INBOARD FACING ON BOOSTER SEAT
X	Seat-Mounted		X*1	
	Side-Mounted			
	Roof-Rail-Mounted			
Dummy ID Number			3691	
Temperature (°C)			21.8	
Humidity (%)			47	
Soak Time (hours)			4	
Seat	Seat Slide		13 detents rearward from the first locking detent	
Seat	Seat Height		Fixed	
Seat	Seat Back		4 detents rearward from the first locking detent	

*1 The side air bag is deactivated through conductive cloth fitted on the dummy whose neck is modified for easy bending, thus simulating real human being, but the side curtain air bag remains activated and contacts the head of the dummy.

SECOND ROW AIR BAG SELECTION		FORWARD FACING ON BOOSTER SEAT	INBOARD FACING ON BOOSTER SEAT
	Seat-Mounted		
	Side-Mounted		
	Roof-Rail-Mounted		
Dummy ID Number			
Temperature (°C)			
Humidity (%)			
Soak Time (hours)			
Seat	Seat Slide		
Seat	Seat Height		
Seat	Seat Back		

TEST VEHICLE SPECIFICATIONS AND CONDITIONS

HYBRID III 6-YEAR-OLD CHILD DUMMY

THIRD ROW		FORWARD FACING ON BOOSTER SEAT	INBOARD FACING ON BOOSTER SEAT
AIR BAG SELECTION			
Seat-Mounted			
Side-Mounted			
Roof-Rail-Mounted			
Dummy ID Number			
Temperature (^{o}C)			
Humidity (%)			
Soak Time (hours)			
Seat	Seat Slide		
	Seat Height		
	Seat Back		

TEST VEHICLE SPECIFICATIONS AND CONDITIONS

SID-IIs

X FRONT ROW AIR BAG SELECTION		INBOARD FACING	FORWARD FACING	FORWARD FACING ON RAISED SEAT	INBOARD FACING ON RAISED SEAT
X	Seat-Mounted	X			
	Side-Mounted				
	Roof-Rail-Mounted				
Dummy ID Number		6991			
Temperature (^oC)		21.0			
Humidity (%)		50			
Soak Time (hours)		4			
Seat	Seat Slide	24 detents rearward from the first locking detent			
	Seat Height	Fixed			
	Seat Back	4 detents rearward from the first locking detent			

SECOND ROW AIR BAG SELECTION		INBOARD FACING	FORWARD FACING	FORWARD FACING ON RAISED SEAT	INBOARD FACING ON RAISED SEAT
	Seat-Mounted				
	Side-Mounted				
	Roof-Rail-Mounted				
Dummy ID Number					
Temperature (^oC)					
Humidity (%)					
Soak Time (hours)					
Seat	Seat Slide				
	Seat Height				
	Seat Back				

TEST VEHICLE SPECIFICATIONS AND CONDITIONS

SID-IIs

THIRD ROW AIR BAG SELECTION		INBOARD FACING	FORWARD FACING	FORWARD FACING ON RAISED SEAT	INBOARD FACING ON RAISED SEAT
Seat-Mounted					
Side-Mounted					
Roof-Rail-Mounted					
Dummy ID Number					
Temperature (°C)					
Humidity (%)					
Soak Time (hours)					
Seat	Seat Slide				
	Seat Height				
	Seat Back				

TEST RESULTS

HYBRID III 3-YEAR-OLD CHILD DUMMY

X	FRONT ROW	Forward facing on booster seat	Rearward facing	Outboard facing	Inboard facing	Lying on seat, head on armrest	Lying on seat
AIR BAG SELECTION							
X	Seat-Mounted	X*1	X	*1 The side air bag is deactivated through conductive cloth fitted on the dummy whose neck is modified for easy bending, thus simulating real human being, but the side curtain air bag remains activated and contacts the head of the dummy.		X	X
	Side-Mounted						
	Roof-Rail-Mounted						
Suppression System		Suppressed	Not Suppressed			Not Suppressed	Not Suppressed
Head	HIC Max 570	0.7	13.9			25.9	33.3
Upper Neck	Nij Max 1.0	0.08	0.53			0.13	0.16
	Tension Max 1130N	14.1	278.9			40.5	101.8
	Compression Max 1380N	164.1	392.5			224.9	136.3
Thorax	Deflection Max 36mm		2.6				
	Deflection rate Max 8.0m/s		1.20				
Photo No.	Pre Test	1	3			5	7
	Post Test	2	4			6	8

☐	SECOND ROW	Forward facing on booster seat	Rearward facing	Outboard facing	Inboard facing	Lying on seat, head on armrest	Lying on seat
AIR BAG SELECTION							
	Seat-Mounted						
	Side-Mounted						
	Roof-Rail-Mounted						
Suppression System							
Head	HIC Max 570						
Upper Neck	Nij Max 1.0						
	Tension Max 1130N						
	Compression Max 1380N						
Thorax	Deflection Max 36mm						
	Deflection rate Max 8.0m/s						
Photo No.	Pre Test						
	Post Test						

TEST RESULTS

HYBRID III 3-YEAR-OLD CHILD DUMMY

THIRD ROW AIR BAG SELECTION	Forward facing on booster seat	Rearward facing	Outboard facing	Inboard facing	Lying on seat, head on armrest	Lying on seat
Seat-Mounted						
Side-Mounted						
Roof-Rail-Mounted						

Suppression System							
Head	HIC Max 570						
Upper Neck	Nij Max 1.0						
	Tension Max 1130N						
	Compression Max 1380N						
Thorax	Deflection Max 36mm						
	Deflection rate Max 8.0m/s						
Photo No.	Pre Test						
	Post Test						

TEST RESULTS

HYBRID III 6-YEAR-OLD CHILD DUMMY

X FRONT ROW		Forward facing on booster seat	Inboard facing on booster seat
AIR BAG SELECTION			
X	Seat-Mounted	X*1	
	Side-Mounted		
	Roof-Rail-Mounted		

Suppression System		Suppressed	
Head	HIC Max 723	0.9	
Upper Neck	Nij Max 1.0	0.15	
	Tension Max 1490N	23.7	
	Compression Max 1820N	261.2	
Photo No.	Pre Test	9	
	Post Test	10	

*1 The side air bag is deactivated through conductive cloth fitted on the dummy whose neck is modified for easy bending, thus simulating real human being, but the side curtain air bag remains activated and contacts the head of the dummy.

SECOND ROW		Forward facing on booster seat	Inboard facing on booster seat
AIR BAG SELECTION			
	Seat-Mounted		
	Side-Mounted		
	Roof-Rail-Mounted		

Suppression System			
Head	HIC Max 723		
Upper Neck	Nij Max 1.0		
	Tension Max 1490N		
	Compression Max 1820N		
Photo No.	Pre Test		
	Post Test		

TEST RESULTS

HYBRID III 6-YEAR-OLD CHILD DUMMY

THIRD ROW		Forward facing on booster seat	Inboard facing on booster seat
AIR BAG SELECTION			
	Seat-Mounted		
	Side-Mounted		
	Roof-Rail-Mounted		

Suppression System			
Head	HIC Max 723		
Upper Neck	Nij Max 1.0		
	Tension Max 1490N		
	Compression Max 1820N		
Photo No.	Pre Test		
	Post Test		

SIDE IMPACT PROTECTION

TEST RESULTS

SID-IIs

X FRONT ROW AIR BAG SELECTION		Inboard Facing	Forward Facing	Forward Facing on Raised Seat	Inboard Facing on Raised Seat
X	Seat-Mounted	X			
	Side-Mounted				
	Roof-Rail-Mounted				

Suppression System		Not Suppressed			
Head	HIC Max 779	2.9			
Upper Neck	Nij Max 1.0	0.41			
	Tension Max 2070N	6.7			
	Compression Max 2520N	922.5			
Thorax	Deflection Max 34mm	13.8			
	Deflection rate Max 8.2m/s	2.26			
Photo No.	Pre Test	11			
	Post Test	12			

SECOND ROW AIR BAG SELECTION		Inboard Facing	Forward Facing	Forward Facing on Raised Seat	Inboard Facing on Raised Seat
	Seat-Mounted				
	Side-Mounted				
	Roof-Rail-Mounted				

Suppression System					
Head	HIC Max 779				
Upper Neck	Nij Max 1.0				
	Tension Max 2070N				
	Compression Max 2520N				
Thorax	Deflection Max 34mm				
	Deflection rate Max 8.2m/s				
Photo No.	Pre Test				
	Post Test				

SIDE IMPACT PROTECTION

TEST RESULTS

SID-IIs

THIRD ROW	Inboard Facing	Forward Facing	Forward Facing on Raised Seat	Inboard Facing on Raised Seat
AIR BAG SELECTION				
Seat-Mounted				
Side-Mounted				
Roof-Rail-Mounted				

Suppression System					
Head	HIC Max 779				
Upper Neck	Nij Max 1.0				
	Tension Max 2070N				
	Compression Max 2520N				
Thorax	Deflection Max 34mm				
	Deflection rate Max 8.2m/s				
Photo No.	Pre Test				
	Post Test				

PHOTOGRAPHS

HYBRID III 3-YEAR-OLD CHILD DUMMY
FORWARD FACING ON BOOSTER SEAT

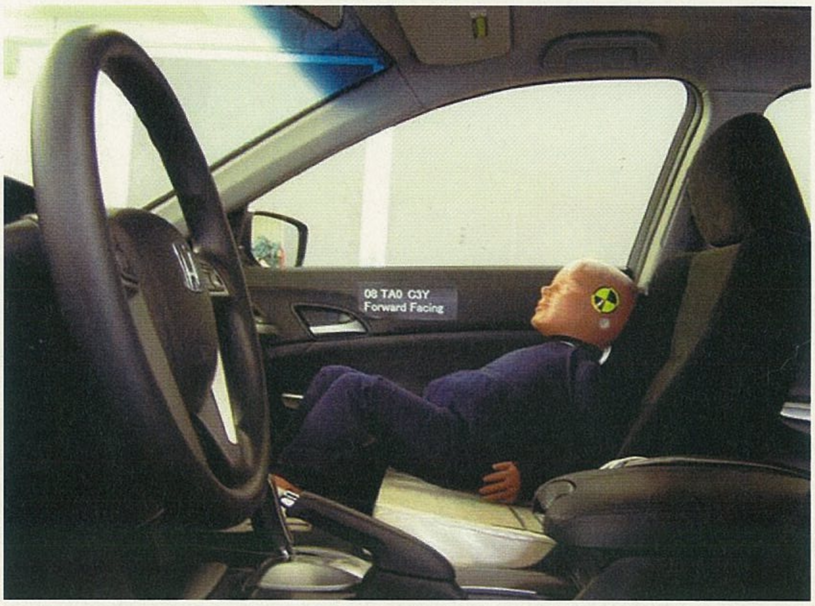

Photo No.1
Pre-Test

The activation of the suppression system was confirmed by using a dummy with conductive cloth on it, which enables the suppression system to operate in the same manner as by real human beings.

HYBRID III 3-YEAR-OLD CHILD DUMMY
FORWARD FACING ON BOOSTER SEAT

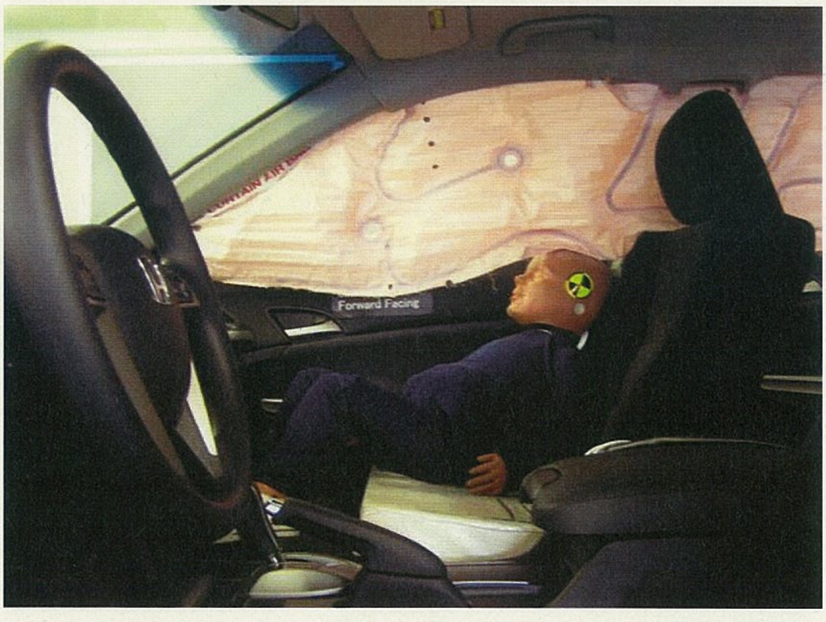

Photo No.2
Post-Test

PHOTOGRAPHS

HYBRID III 3-YEAR-OLD CHILD DUMMY
REARWARD FACING

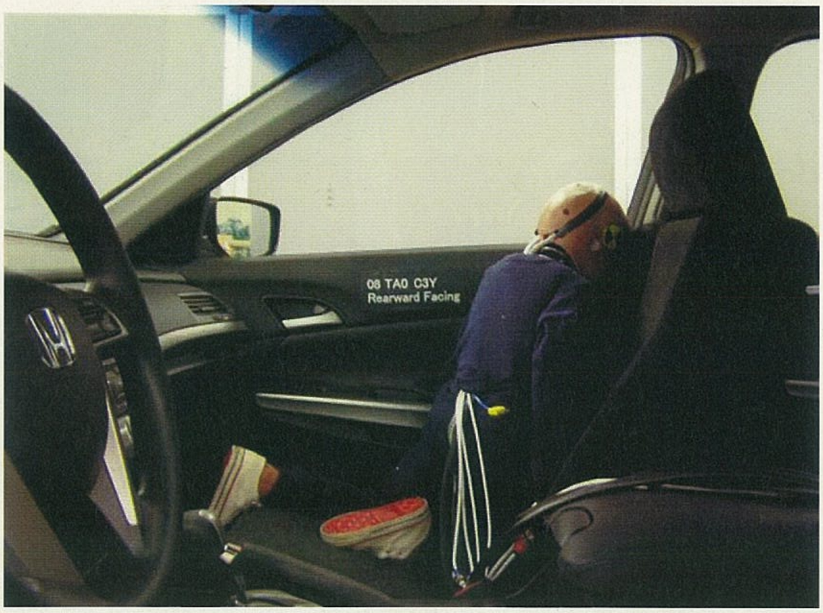

Photo No.3
Pre-Test

HYBRID III 3-YEAR-OLD CHILD DUMMY
REARWARD FACING

Photo No.4
Post-Test

PHOTOGRAPHS

HYBRID III 3-YEAR-OLD CHILD DUMMY
LYING ON SEAT, HEAD ON ARMREST

Photo No.5
Pre-Test

HYBRID III 3-YEAR-OLD CHILD DUMMY
LYING ON SEAT, HEAD ON ARMREST

Photo No.6
Post-Test

PHOTOGRAPHS

HYBRID III 3-YEAR-OLD CHILD DUMMY
LYING ON SEAT

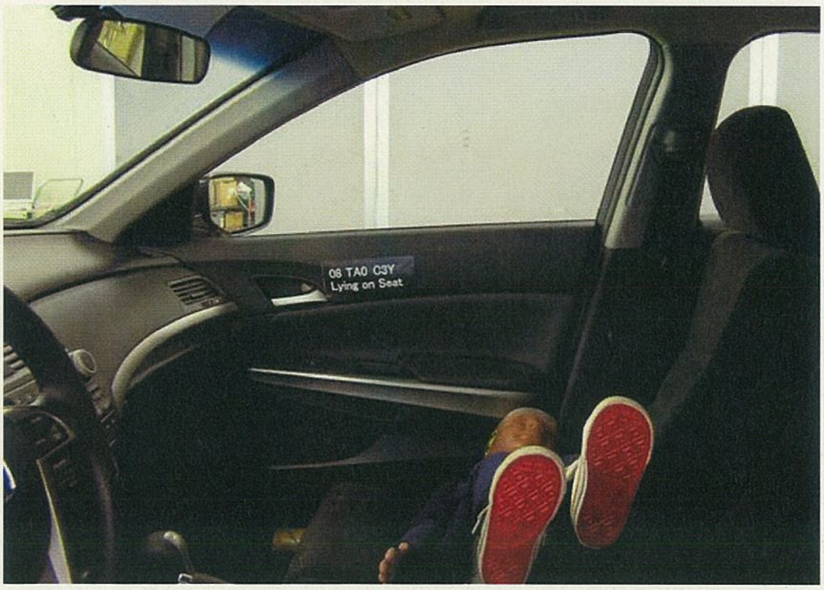

Photo No.7
Pre-Test

HYBRID III 3-YEAR-OLD CHILD DUMMY
LYING ON SEAT

Photo No.8
Post-Test

PHOTOGRAPHS

HYBRID III 6-YEAR-OLD CHILD DUMMY
FORWARD FACING ON BOOSTER SEAT

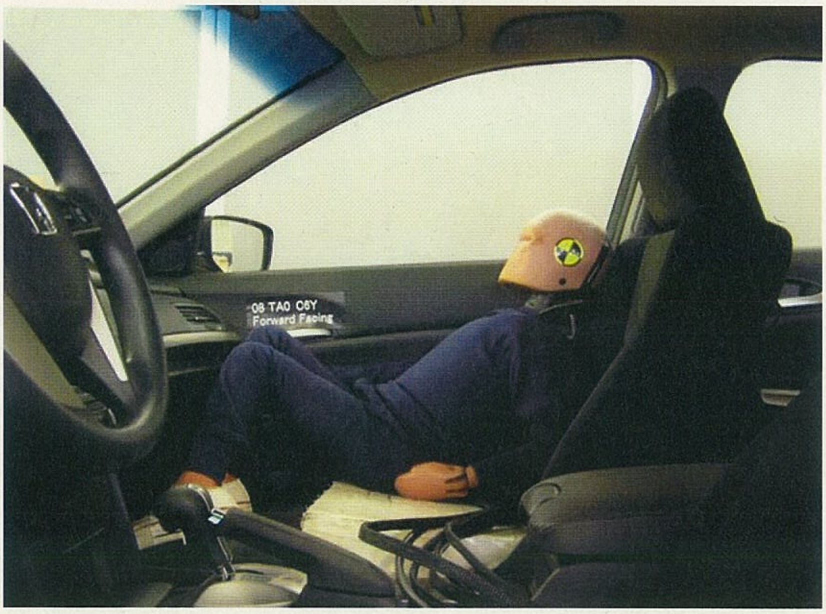

Photo No.9
Pre-Test

The activation of the suppression system was confirmed by using a dummy with conductive cloth on it, which enables the suppression system to operate in the same manner as by real human beings.

HYBRID III 6-YEAR-OLD CHILD DUMMY
FORWARD FACING ON BOOSTER SEAT

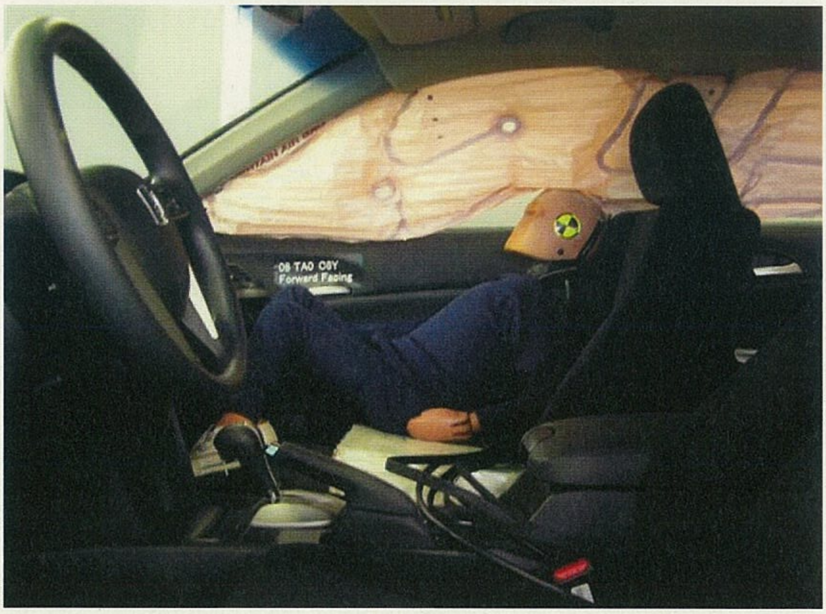

Photo No.10
Post-Test

PHOTOGRAPHS

SID-IIs
INBOARD FACING

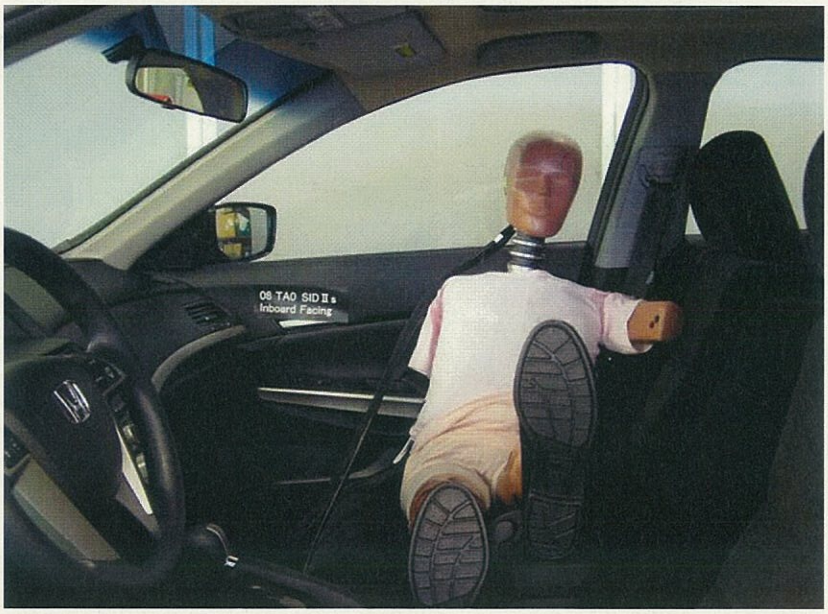

Photo No.11
Pre-Test

SID-IIs
INBOARD FACING

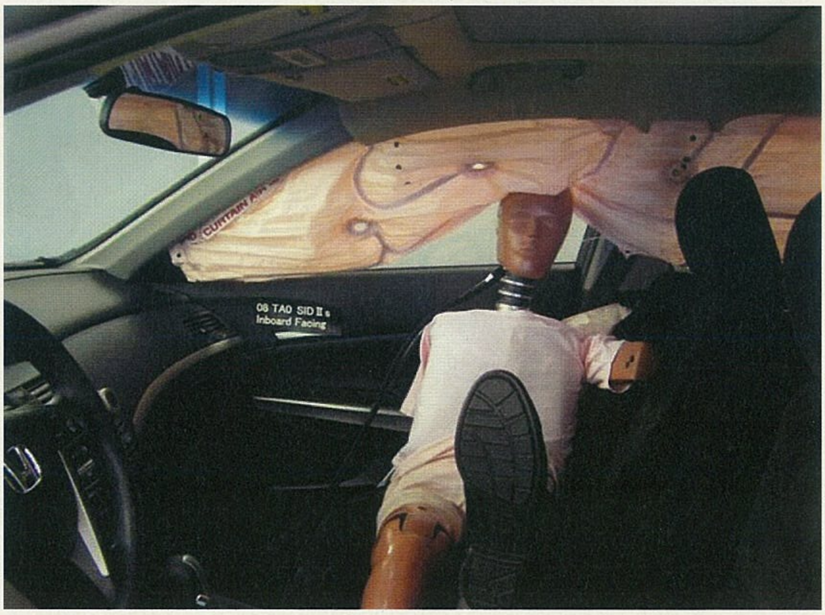

Photo No.12
Post-Test

EA14-004

HONDA

11/10/2014

QUESTION 9

08ACMOU-02

TEST REPORT

TEST REPORT NO. : 08ACMOU-02

SIDE IMPACT PROTECTION

LABORATORY :

Name : Certification & Regulation Compliance Division, Tochigi Office, Honda Motor Co., Ltd.
Address : 1-10-1 Shin-Sayama, Sayama City, Saitama Prefecture, Japan

DATE OF TEST : May 9, 2007 to May 15, 2007

TEST VEHICLE IDENTIFICATION :

Model Year	: 2008
Make	: HONDA
Model	: ACCORD SEDAN
Transmission	: 5A/T
Vehicle Identification Number	: JHMCP26748C[redacted]

TEST DESCRIPTION :

STATIC TEST

Test Type:	
Seat-mounted:	☐
Side-mounted:	☐
Roof-rail-mounted:	X

Side Air Bag System:

	Front Row	Second Row	Third Row
Seat-mounted:	X		
Side-mounted:			
Roof-rail-mounted:	X	X	
Symmetrical:	X	X	

DYNAMIC TEST

In Accordance With:

X	FMVSS No.214	Report No.:	08AC214-03/05
☐	ECE No.95	Report No.:	

TEST RESULT :

[X] **PASS** [ ] **FAIL**

SIGNATURE : K. Misonou **DATE :** Aug. 3, 2007

NAME : Kei Misonou

TITLE : Manager of Vehicle Testing Department, Sayama Laboratory

ADDRESS : 1-10-1 Shin-Sayama, Sayama City, Saitama Prefecture, Japan

TABLE OF CONTENTS

TEST VEHICLE SPECIFICATIONS AND CONDITIONS

HYBRID III 3-YEAR-OLD CHILD DUMMY

X FRONT ROW			FORWARD FACING ON BOOSTER SEAT	REARWARD FACING	OUTBOARD FACING	INBOARD FACING	LYING ON SEAT, HEAD ON ARMREST	LYING ON SEAT
AIR BAG SELECTION								
	Seat-Mounted							
	Side-Mounted							
X	Roof-Rail-Mounted							
Dummy ID Number								
Temperature (^{o}C)								
Humidity (%)								
Soak Time (hours)								
Seat	Seat Slide							
	Seat Height							
	Seat Back							

X SECOND ROW			FORWARD FACING ON BOOSTER SEAT	REARWARD FACING	OUTBOARD FACING	INBOARD FACING	LYING ON SEAT, HEAD ON ARMREST	LYING ON SEAT
AIR BAG SELECTION								
	Seat-Mounted							
	Side-Mounted							
X	Roof-Rail-Mounted							
Dummy ID Number								
Temperature (^{o}C)								
Humidity (%)								
Soak Time (hours)								
Seat	Seat Slide							
	Seat Height							
	Seat Back							

TEST VEHICLE SPECIFICATIONS AND CONDITIONS

HYBRID III 3-YEAR-OLD CHILD DUMMY

☐ THIRD ROW AIR BAG SELECTION		FORWARD FACING ON BOOSTER SEAT	REARWARD FACING	OUTBOARD FACING	INBOARD FACING	LYING ON SEAT, HEAD ON ARMREST	LYING ON SEAT
☐	Seat-Mounted						
☐	Side-Mounted						
☐	Roof-Rail-Mounted						
Dummy ID Number							
Temperature (^{o}C)							
Humidity (%)							
Soak Time (hours)							
Seat	Seat Slide						
	Seat Height						
	Seat Back						

TEST VEHICLE SPECIFICATIONS AND CONDITIONS

HYBRID III 6-YEAR-OLD CHILD DUMMY

X FRONT ROW AIR BAG SELECTION		FORWARD FACING ON BOOSTER SEAT	INBOARD FACING ON BOOSTER SEAT
	Seat-Mounted		
	Side-Mounted		
X	Roof-Rail-Mounted		X
Dummy ID Number			3691
Temperature (°C)			21.0
Humidity (%)			44
Soak Time (hours)			4
Seat	Seat Slide		24 detents rearward from the first locking detent
Seat	Seat Height	Fixed	
Seat	Seat Back	4 detents rearward from the first locking detent	

X SECOND ROW AIR BAG SELECTION		FORWARD FACING ON BOOSTER SEAT	INBOARD FACING ON BOOSTER SEAT
	Seat-Mounted		
	Side-Mounted		
X	Roof-Rail-Mounted		X
Dummy ID Number			3691
Temperature (°C)			21.7
Humidity (%)			44
Soak Time (hours)			4
Seat	Seat Slide		Fixed
Seat	Seat Height	Fixed	
Seat	Seat Back	Fixed	

TEST VEHICLE SPECIFICATIONS AND CONDITIONS

HYBRID III 6-YEAR-OLD CHILD DUMMY

THIRD ROW AIR BAG SELECTION		FORWARD FACING ON BOOSTER SEAT	INBOARD FACING ON BOOSTER SEAT
	Seat-Mounted		
	Side-Mounted		
	Roof-Rail-Mounted		
Dummy ID Number			
Temperature (°C)			
Humidity (%)			
Soak Time (hours)			
Seat	Seat Slide		
	Seat Height		
	Seat Back		

TEST VEHICLE SPECIFICATIONS AND CONDITIONS

SID-IIs

X FRONT ROW AIR BAG SELECTION		INBOARD FACING	FORWARD FACING	FORWARD FACING ON RAISED SEAT	INBOARD FACING ON RAISED SEAT
	Seat-Mounted				
	Side-Mounted				
X	Roof-Rail-Mounted			X	X
Dummy ID Number				6991	6992
Temperature (°C)				21.0	20.6
Humidity (%)				38	49
Soak Time (hours)				4	4
Seat	Seat Slide			150 mm rearward from the forwardmost position	240 mm rearward from the forwardmost position
	Seat Height	Highest position			
	Seat Back	20 degrees rearward from the forwardmost positior			

X SECOND ROW AIR BAG SELECTION		INBOARD FACING	FORWARD FACING	FORWARD FACING ON RAISED SEAT	INBOARD FACING ON RAISED SEAT
	Seat-Mounted				
	Side-Mounted				
X	Roof-Rail-Mounted			X	X
Dummy ID Number				6991	6992
Temperature (°C)				21.0	21.0
Humidity (%)				38	56
Soak Time (hours)				4	4
Seat	Seat Slide			Fixed	Fixed
	Seat Height	Fixed			
	Seat Back	Fixed			

TEST VEHICLE SPECIFICATIONS AND CONDITIONS

SID-IIs

THIRD ROW AIR BAG SELECTION		INBOARD FACING	FORWARD FACING	FORWARD FACING ON RAISED SEAT	INBOARD FACING ON RAISED SEAT
Seat-Mounted					
Side-Mounted					
Roof-Rail-Mounted					
Dummy ID Number					
Temperature (°C)					
Humidity (%)					
Soak Time (hours)					
Seat	Seat Slide				
	Seat Height				
	Seat Back				

TEST RESULTS

HYBRID III 3-YEAR-OLD CHILD DUMMY

X	FRONT ROW AIR BAG SELECTION	Forward facing on booster seat	Rearward facing	Outboard facing	Inboard facing	Lying on seat, head on armrest	Lying on seat
	Seat-Mounted						
	Side-Mounted						
X	Roof-Rail-Mounted						

Suppression System							
Head	HIC Max 570						
Upper Neck	Nij Max 1.0						
	Tension Max 1130N						
	Compression Max 1380N						
Thorax	Deflection Max 36mm						
	Deflection rate Max 8.0m/s						
Photo No.	Pre Test						
	Post Test						

X	SECOND ROW AIR BAG SELECTION	Forward facing on booster seat	Rearward facing	Outboard facing	Inboard facing	Lying on seat, head on armrest	Lying on seat
	Seat-Mounted						
	Side-Mounted						
X	Roof-Rail-Mounted						

Suppression System							
Head	HIC Max 570						
Upper Neck	Nij Max 1.0						
	Tension Max 1130N						
	Compression Max 1380N						
Thorax	Deflection Max 36mm						
	Deflection rate Max 8.0m/s						
Photo No.	Pre Test						
	Post Test						

TEST RESULTS

HYBRID III 3-YEAR-OLD CHILD DUMMY

THIRD ROW		Forward facing on booster seat	Rearward facing	Outboard facing	Inboard facing	Lying on seat, head on armrest	Lying on seat
AIR BAG SELECTION							
	Seat-Mounted						
	Side-Mounted						
	Roof-Rail-Mounted						

Suppression System							
Head	HIC Max 570						
Upper Neck	Nij Max 1.0						
	Tension Max 1130N						
	Compression Max 1380N						
Thorax	Deflection Max 36mm						
	Deflection rate Max 8.0m/s						
Photo No.	Pre Test						
	Post Test						

TEST RESULTS

HYBRID III 6-YEAR-OLD CHILD DUMMY

X	FRONT ROW	Forward facing on booster seat	Inboard facing on booster seat
	AIR BAG SELECTION		
	Seat-Mounted		
	Side-Mounted		
X	Roof-Rail-Mounted		X

Suppression System			Not Suppressed
Head	HIC Max 723		9.1
Upper Neck	Nij Max 1.0		0.43
	Tension Max 1490N		62.7
	Compression Max 1820N		713.0
Photo No.	Pre Test		1
	Post Test		2

X	SECOND ROW	Forward facing on booster seat	Inboard facing on booster seat
	AIR BAG SELECTION		
	Seat-Mounted		
	Side-Mounted		
X	Roof-Rail-Mounted		X

Suppression System			Not Suppressed
Head	HIC Max 723		0.6
Upper Neck	Nij Max 1.0		0.24
	Tension Max 1490N		9.3
	Compression Max 1820N		405.9
Photo No.	Pre Test		3
	Post Test		4

TEST RESULTS

HYBRID III 6-YEAR-OLD CHILD DUMMY

☐	THIRD ROW	Forward facing on booster seat	Inboard facing on booster seat
AIR BAG SELECTION			
☐	Seat-Mounted		
☐	Side-Mounted		
☐	Roof-Rail-Mounted		

Suppression System			
Head	HIC Max 723		
Upper Neck	Nij Max 1.0		
	Tension Max 1490N		
	Compression Max 1820N		
Photo No.	Pre Test		
	Post Test		

TEST RESULTS

SID-IIs

X FRONT ROW AIR BAG SELECTION		Inboard Facing	Forward Facing	Forward Facing on Raised Seat	Inboard Facing on Raised Seat
	Seat-Mounted				
	Side-Mounted				
X	Roof-Rail-Mounted			X	X

Suppression System				Not Suppressed	Not Suppressed
Head	HIC Max 779			8.4	14.4
Upper Neck	Nij Max 1.0			0.34	0.82
	Tension Max 2070N			75.7	152.0
	Compression Max 2520N			966.6	1518.9
Thorax	Deflection Max 34mm				
	Deflection rate Max 8.2m/s				
Photo No.	Pre Test			5	7
	Post Test			6	8

X SECOND ROW AIR BAG SELECTION		Inboard Facing	Forward Facing	Forward Facing on Raised Seat	Inboard Facing on Raised Seat
	Seat-Mounted				
	Side-Mounted				
X	Roof-Rail-Mounted			X	X

Suppression System				Not Suppressed	Not Suppressed
Head	HIC Max 779			0.7	2.1
Upper Neck	Nij Max 1.0			0.19	0.26
	Tension Max 2070N			7.3	28.5
	Compression Max 2520N			615.7	478.9
Thorax	Deflection Max 34mm				
	Deflection rate Max 8.2m/s				
Photo No.	Pre Test			9	11
	Post Test			10	12

TEST RESULTS

SID-IIs

THIRD ROW AIR BAG SELECTION		Inboard Facing	Forward Facing	Forward Facing on Raised Seat	Inboard Facing on Raised Seat
	Seat-Mounted				
	Side-Mounted				
	Roof-Rail-Mounted				

Suppression System					
Head	HIC Max 779				
Upper Neck	Nij Max 1.0				
	Tension Max 2070N				
	Compression Max 2520N				
Thorax	Deflection Max 34mm				
	Deflection rate Max 8.2m/s				
Photo No.	Pre Test				
	Post Test				

PHOTOGRAPHS

HYBRID III 6-YEAR-OLD CHILD DUMMY
INBOARD FACING ON BOOSTER SEAT

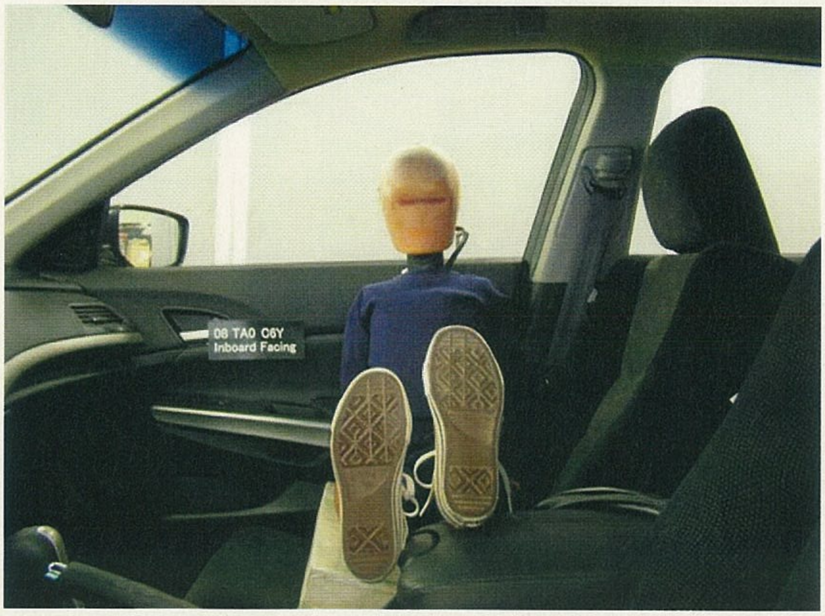

Photo No.1
Pre-Test

HYBRID III 6-YEAR-OLD CHILD DUMMY
INBOARD FACING ON BOOSTER SEAT

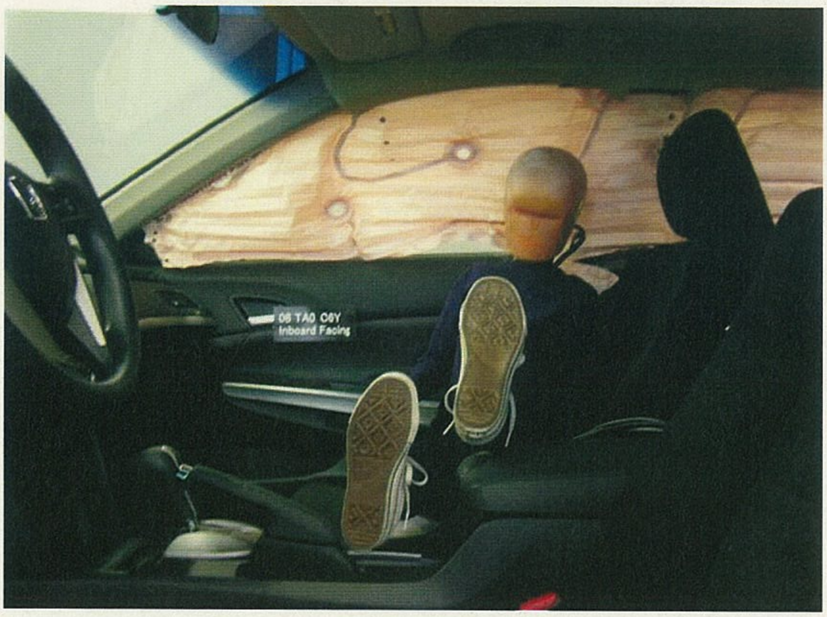

Photo No.2
Post-Test

PHOTOGRAPHS

HYBRID III 6-YEAR-OLD CHILD DUMMY
INBOARD FACING ON BOOSTER SEAT

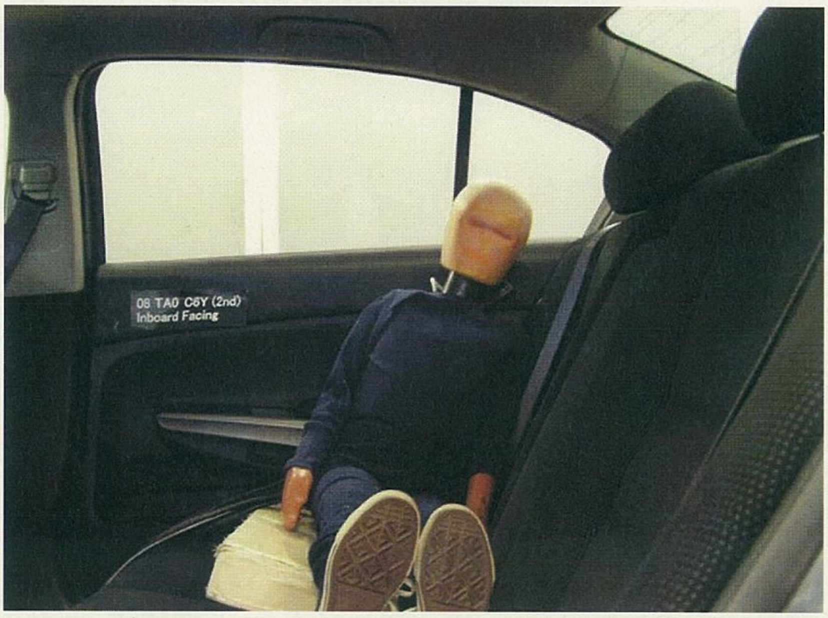

Photo No.3
Pre-Test

HYBRID III 6-YEAR-OLD CHILD DUMMY
INBOARD FACING ON BOOSTER SEAT

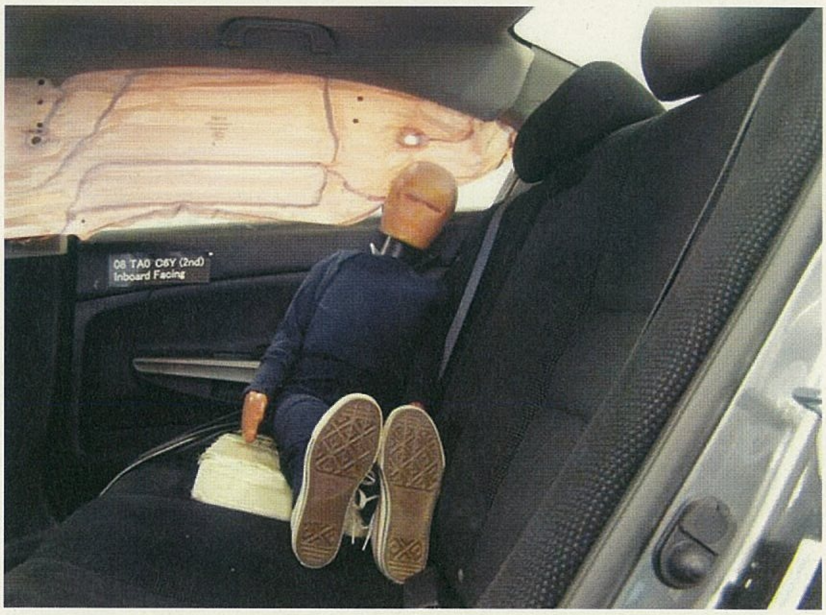

Photo No.4
Post-Test

PHOTOGRAPHS

SID-IIs
FORWARD FACING ON RAISED SEAT

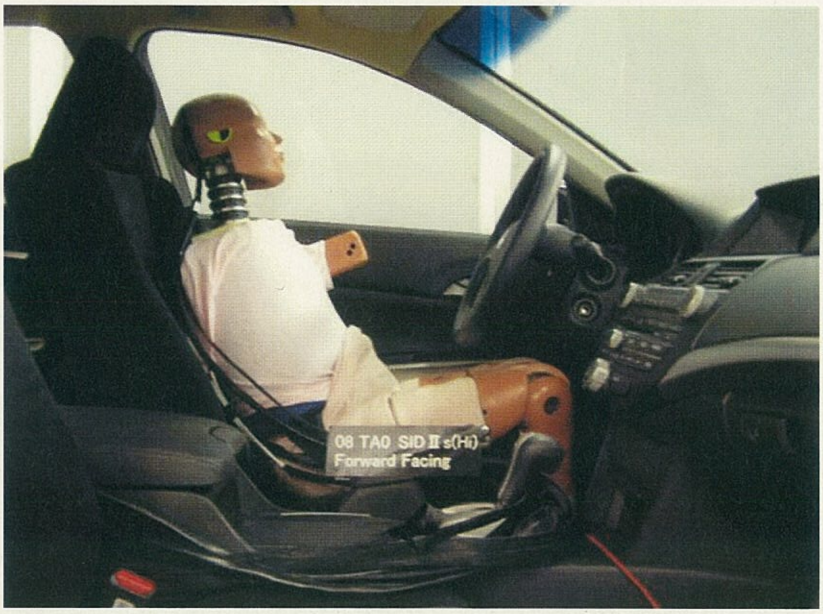

Photo No.5
Pre-Test

SID-IIs
FORWARD FACING ON RAISED SEAT

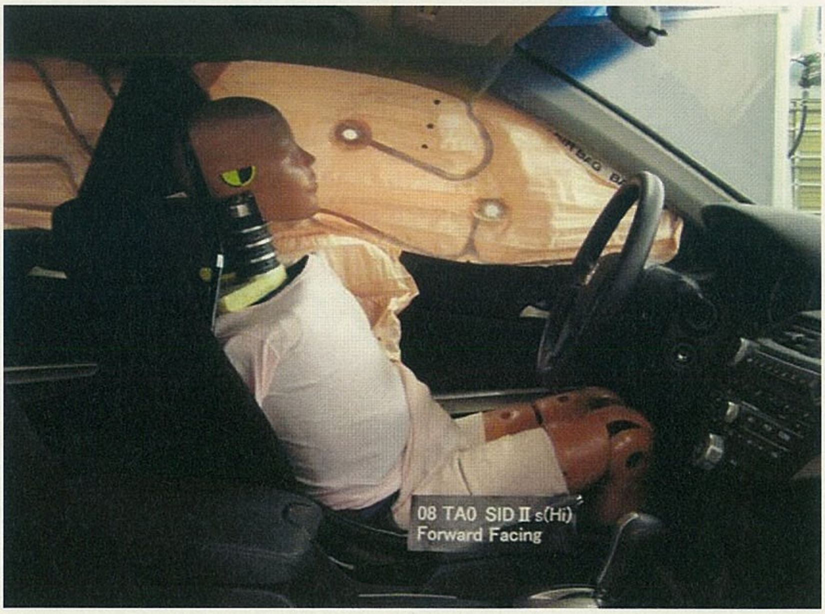

Photo No.6
Post-Test

PHOTOGRAPHS

SID-IIs
INBOARD FACING ON RAISED SEAT

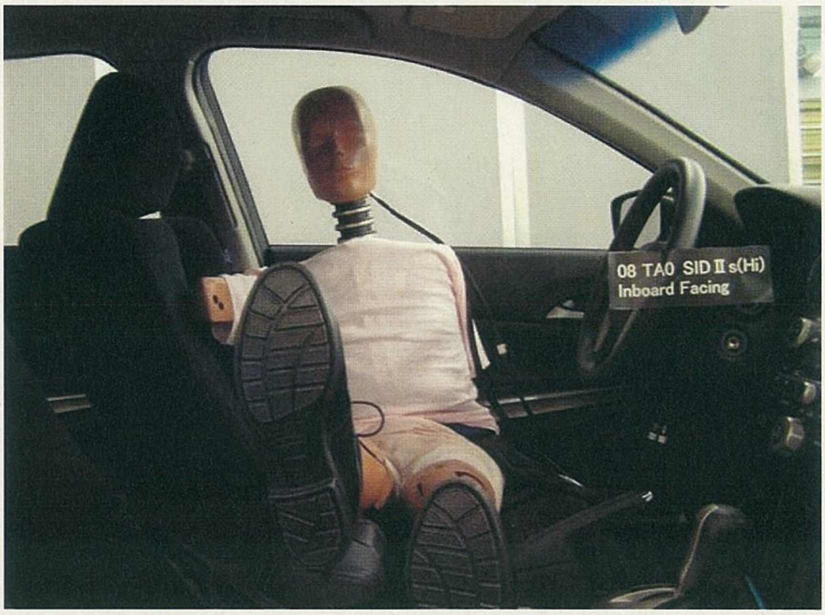

Photo No.7
Pre-Test

SID-IIs
INBOARD FACING ON RAISED SEAT

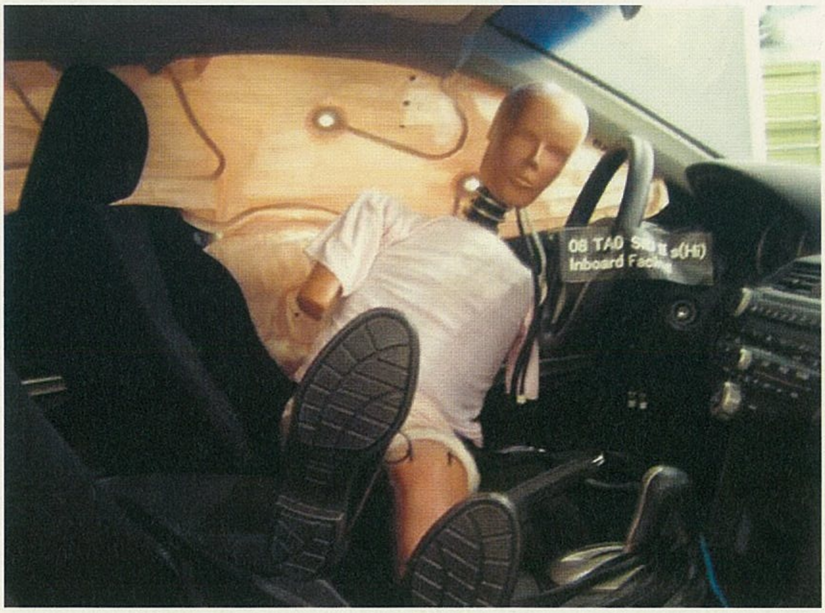

Photo No.8
Post-Test

PHOTOGRAPHS

SID-IIs
FORWARD FACING ON RAISED SEAT

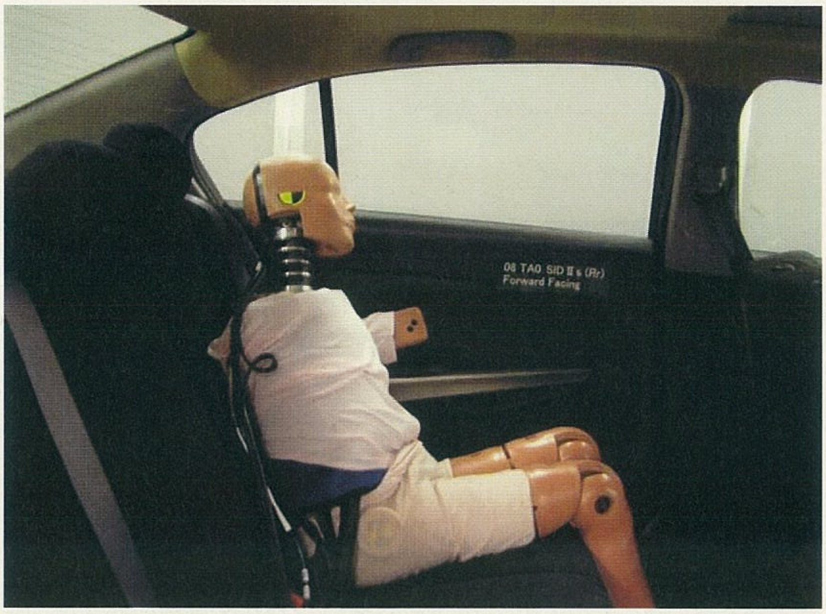

Photo No.9
Pre-Test

SID-IIs
FORWARD FACING ON RAISED SEAT

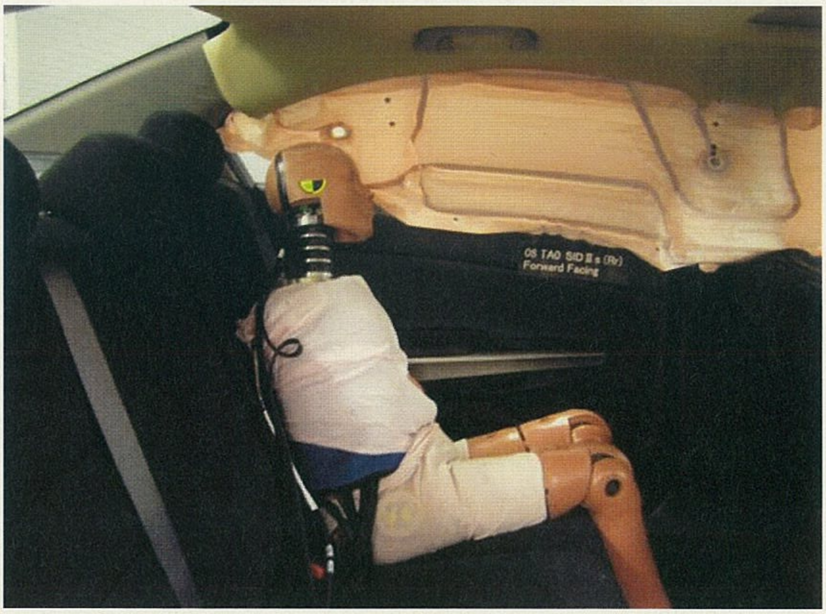

Photo No.10
Post-Test

PHOTOGRAPHS

SID-IIs
INBOARD FACING ON RAISED SEAT

Photo No.11
Pre-Test

SID-IIs
INBOARD FACING ON RAISED SEAT

Photo No.12
Post-Test

EA14-004

HONDA

11/10/2014

QUESTION 10

Q10 a-h

a	The date or approximate date on which the modification or change was incorporated into vehicle production;	Css Production: June 30th, 2008 HAM Production: June 5th, 2008
b	A detailed description of the modification or change;	Changing of the crash parameters
c	The reason(s) for the modification or change;	Product improvement
d	The part number(s) (service and engineering) ofthe original component;	77960-TA0-A01 UNIT ASSY,SRS 77960-TA0-L01 UNIT ASSY,SRS
e	The part number(s) (service and engineering) of the modified component;	77960-TA0-A02 UNIT ASSY,SRS 77960-TA0-L02 UNIT ASSY,SRS
f	Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;	77960-TA0-A01: withdrawn date 07/06/2009 77960-TA0-L01: withdrawn date 11/12/2008
g	When the modified component was made available as a service component;	77960-TA0-A02: available date 06/09/2008 77960-TA0-L02: available date 06/24/2008
h	Whether the modified component can be interchanged with earlier production components.	Yes

EA14-004

HONDA

11/10/2014

QUESTION 10

Q10 Mass Production Spec Notice Supplemental Sheet

仕様通知附表

DESIGN CHANGE NOTICE

CTL.BLOCK	

製作所 PLANT	作成 AS OF	FAMILY	通知 № D/C №	PAGE
C	08-06-23	C42	C48-2-1702	1

№		LEVEL	NEW PART No. / OLD PART No. / PART NAME	HNS	SP 互換 概略 種類	SN I/C.ABILITY DRW.ID	C REASON SIZE	BLOCK SECTION ITEM No. 個/親 QTY.
1	A	1	77960-TA0 -A020-M4		4	S		
	B	U	77960-TA0 -A011-M4				NY	F47
	C		UNIT ASSY,SRS		01			77960
	D			S	M		M	
2	A	2	7796Z-TA0 -A020-M4		4	N		
	B	U	7796Z-TA0 -A011-M4				NY	
	C		SPEC,UNIT ASSY SRS		01			
	D				Z		4	1M
3	A	2	77960-TA0 -ZZ12-M4		4	N		
	B	U	77960-TA0 -ZZ11-M4				YY	
	C		DWG,UNIT ASSY SRS		02			
	D			S	Z		5	1M
4	A							
	B							
	C							
	D							
5	A							
	B							
	C							
	D							
6	A							
	B							
	C							
	D							
7	A							
	B							
	C							
	D							

№		手配区分 LOC.GR. 新 NEW	旧 OLD	切換順位 S	基本機種 MODEL	E/F	OP	派生上桁 TYPE	0	1	2	3	4	5	6	7	8	9	手配区分 LOC.GR. 新 NEW	旧 OLD	切換順位 S	基本機種 MODEL	E/F	OP	派生上桁 TYPE	0	1	2	3	4	5	6	7	8	9	順位 SEQ	仮本 T/F	切換年月 EFECTIVE	等級 RANK	ロット LOT
1	A	**SEPPEN TEKIYO*** "APPLICATION/QUANTITY CHANGE" ***																																						
	B	AA		1	TA5A	2		AA		1					1				AA		1	TA5A	2		AB		1					1				1	2	080616	Y	
	C	AA		1	TA5A	2		AC	1					1					AA		1	TA5A	2		AD	1	1				1	1						"		
	D	AA		1	TA5A	2		CA			1					1			AA		1	TA5A	2		CB		1					1						"		
2	A	AA		1	TA5A	2		CC	1					1					AA		1	TA5A	2		CD	1	1				1	1						"		
	B	AA		1	TA5A	2		LA		1									AA		1	TA5A	2		LB		1											"		
	C	AA		1	TA5A	2		LC							1				AA		1	TA5A	2		LD							1						"		
	D	AA		1	TA5A	2		LE	1										AA		1	TA5A	2		LF						1							"		
3	A	AA		1	TA5A	2		LG	1	1									AA		1	TA5A	2		LH						1	1						"		
	B	AA		1	TA5Z	2		AA		1					1				AA		1	TA5Z	2		AB		1					1						"		
	C	AA		1	TA5Z	2		AC	1					1					AA		1	TA5Z	2		AD	1	1				1	1						"		
	D	AA		1	TA5Z	2		CA			1					1			AA		1	TA5Z	2		CB		1					1						"		
4	A	AA		1	TA5Z	2		CC	1					1					AA		1	TA5Z	2		CD	1	1				1	1						"		
	B	AA		1	TA5Z	2		LA		1									AA		1	TA5Z	2		LB		1											"		
	C	AA		1	TA5Z	2		LC							1				AA		1	TA5Z	2		LD							1						"		
	D	AA		1	TA5Z	2		LE	1										AA		1	TA5Z	2		LF						1							"		
5	A	AA		1	TA5Z	2		LG	1	1									AA		1	TA5Z	2		LH						1	1						"		
	B	AA		1	TA6A	2		AA						1					AA		1	TA6A	2		AB						1	1						"		
	C	AA		1	TA6A	2		CA						1					AA		1	TA6A	2		CB						1	1						"		
	D	AA		1	TA6A	2		LA						1					AA		1	TA6A	2		LB						1	1						"		
6	A	AA		1	TA6Z	2		AA						1					AA		1	TA6Z	2		AB						1	1						"		
	B	AA		1	TA6Z	2		CA						1					AA		1	TA6Z	2		CB						1	1						"		
	C	AA		1	TA6Z	2		LA						1					AA		1	TA6Z	2		LB						1	1						"		
	D																																							
7	A																																							
	B																																							
	C																																							
	D																																							

手配系列 PROCESS LOCATION

D/C PART №	LOC.GR. PT	CUR	連 NEWS	依存度 SHR%	実施年月日 BEINING DATE	手配記号 LOCATION	P T	属 A	色 C	M L	段 G	手配記号 LOCATION	P T	属 A	色 C	M L	段 G	手配記号 LOCATION	P T	属 A	色 C	M L	段 G	手配記号 LOCATION	P T	属 A	色 C	M L	段 G	手配記号 LOCATION	P T	属 A	色 C	M L	段 G	手配記号 LOCATION	P T	属 A	色 C	M L	段 G
77960-TA0 -A020-M4	C		AA	1100	080424	LP		4			*																														
7796Z-TA0 -A020-M4	C		AA	1100	080424	LP		4			*																														
77960-TA0 -ZZ12-M4	C		CC	1100	080424	LP		4			*																														

概略コード　D/C REASON　０１変更　０２改訂　０３新設新図　０４流用　０５量試　０６暫定　０７部番変更　０８材質変更　０９名　１０廃止　１１設変中止　１２旧図復活　１３整備図　１４適用変更　１５個数変更　１７管理修正　１８未出図発行　２５部番統合
３１廃止部品の変更　３２廃止部品の改訂　３３割込新設　４０構成変更　４１構成流用復活　５０次変Ａ－Ｂ　６０改廃設変　７０親離れ　７１親新設　７２ケ／親変更　７３Ｃマーク新設　７４Ｃマーク廃止　８０２／４／汎内廃止　８１ＳＳ／２／４／汎内廃止　８２色別親変更　８３素材共用新設
８４素材共用廃止　８５適用機種指定　８６使用先親設定　９０手配系列変更　９１内外作変更　９２色別適用変更　９３ＫＤ現調変更　９４ベース機種適用流用　９５機種廃止　９６適用日程変更　９７Ｍ／Ｌ変更　９８ＯＰ適用変更　９９部番区分変更　【７００】

仕様通知附表
DESIGN CHANGE NOTICE

CTL.BLOCK

製作所 PLANT	作成 AS OF	FAMILY	通知 № D/C №	PAGE
C	08-06-23	C42	C48-2-1702	2

№		LEVEL	NEW PART No. / OLD PART No. / PART NAME	HNS	SP 互換 I/C.ABILITY 概略 種類	SN REASON DRW.ID	C SIZE	BLOCK SECTION ITEM No. 個/親 QTY.	手配区分 LOC.GR. 新 NEW	旧 OLD	切換順位 S	基本機種 MODEL	E/F	OP	派生上桁 TYPE	0	1	2	3	4	5	6	7	8	9	手配区分 LOC.GR. 新 NEW	旧 OLD	切換順位 S	基本機種 MODEL	E/F	OP	派生上桁 TYPE	0	1	2	3	4	5	6	7	8	9	順位 SEQ	仮本 T/F	切換年月 EFECTIVE	等級 RANK	ロット LOT
1	A	1	77960-TA0 -K020-M4		4	S			**SEPPEN TEKIYO*** "APPLICATION/QUANTITY CHANGE" ***																																						
	B	U	77960-TA0 -K011-M4				NY	F47	BB		1	TA5A	2		KA		1					1				BB		1	TA5A	2		KB		1					1				1	2	080616	Y	
	C		UNIT ASSY,SRS		01			77960	BB		1	TA5A	2		KC	1					1					BB		1	TA5A	2		KD		1					1						"		
	D			S	M		M		BB		1	TA5A	2		KE		1					1				BB		1	TA5A	2		KF	1					1							"		
2	A	2	7796Z-TA0 -A020-M4		4	N			BB		1	TA5Z	2		KA		1					1				BB		1	TA5Z	2		KB		1					1						"		
	B	U	7796Z-TA0 -A011-M4				NY		BB		1	TA5Z	2		KC	1					1					BB		1	TA5Z	2		KD		1					1						"		
	C		SPEC,UNIT ASSY SRS		01				BB		1	TA5Z	2		KE		1					1				BB		1	TA5Z	2		KF	1					1							"		
	D				Z		4	1M	BB		1	TA6A	2		KA						1					BB		1	TA6A	2		KB						1							"		
3	A	2	77960-TA0 -ZZ12-M4		4	N			BB		1	TA6Z	2		KA						1					BB		1	TA6Z	2		KB						1							"		
	B	U	77960-TA0 -ZZ11-M4				YY																																								
	C		DWG,UNIT ASSY SRS		02																																										
	D			S	Z		5	1M																																							
4	A																																														
	B																																														
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	D																																														
5	A																																														
	B																																														
	C																																														
	D																																														
6	A																																														
	B																																														
	C																																														
	D																																														
7	A																																														
	B																																														
	C																																														
	D																																														

手配系列 PROCESS LOCATION

D/C PART №	LOC.GR. PT	CUR	NEWS	連 S	依存度 SHR%	実施年月日 BEINING DATE	手配記号 LOCATION	P T	属 A	色 C	M L	段 G	手配記号 LOCATION	P T	属 A	色 C	M L	段 G	手配記号 LOCATION	P T	属 A	色 C	M L	段 G	手配記号 LOCATION	P T	属 A	色 C	M L	段 G	手配記号 LOCATION	P T	属 A	色 C	M L	段 G	手配記号 LOCATION	P T	属 A	色 C	M L	段 G
77960-TA0 -K020-M4	C		BB	1	100	080424	LP		4			*																														
7796Z-TA0 -A020-M4	C		AA	1	100	080424	LP		4			*																														
77960-TA0 -ZZ12-M4	C		CC	1	100	080424	LP		4			*																														

概略コード　D/C REASON　０１変更　０２改訂　０３新設新図　０４流用　０５量試　０６暫定　０７部番変更　０８材質変更　０９名　１０廃止　１１設変中止　１２旧図復活　１３整備図　１４適用変更　１５個数変更　１７管理修正　１８未出図発行　２５部番統合
３１廃止部品の変更　３２廃止部品の改訂　３３割込新設　４０構成変更　４１構成流用復活　５０次変Ａ－Ｂ　６０改廃設変　７０親離れ　７１親新設　７２ケ／親変更　７３Ｃマーク新設　７４Ｃマーク廃止　８０２／４／汎内廃止　８１ＳＳ／２／４／汎内廃止　８２色別親変更　８３素材共用新設
８４素材共用廃止　８５適用機種指定　８６使用先親設定　９０手配系列変更　９１内外作変更　９２色別適用変更　９３ＫＤ現調変更　９４ベース機種適用流用　９５機種廃止　９６適用日程変更　９７Ｍ／Ｌ変更　９８ＯＰ適用変更　９９部番区分変更　【７００】

仕様通知附表
DESIGN CHANGE NOTICE

CTL.BLOCK

製作所 C PLANT　08-06-23 作成 AS OF

FAMILY	通知 № D/C №	PAGE
C42	C48-2-1702	3

№		LEVEL	NEW PART No. / OLD PART No. / PART NAME	HNS	SP / 互換 / 概略 / 種類	SN / I/C.ABILITY / DRW.ID	C / REASON / SIZE	BLOCK SECTION / ITEM No. / 個/親 QTY.	手配区分 LOC.GR. 新 NEW	旧 OLD	切換順位 S	基本機種 MODEL	E/F	OP	派生上桁 TYPE	派生機種 TYPE 0	1	2	3	4	5	6	7	8	9	手配区分 LOC.GR. 新 NEW	旧 OLD	切換順位 S	基本機種 MODEL	E/F	OP	派生上桁 TYPE	派生機種 TYPE 0	1	2	3	4	5	6	7	8	9	適用指示 APPL-INSTRUC. 順位 SEQ	仮本 T/F	切換年月 EFECTIVE	等級 RANK	ロット LOT
1	A	1	77960-TA0 -L020-M4		4	S			**SEPPEN TEKIYO*** "APPLICATION/QUANTITY CHANGE" ***																																						
	B	U	77960-TA0 -L010-M4				NY	F47	AA		1	TA0Z	2		AA							1				AA		1	TA0Z	2		AB							1				1	2	080714	D	
	C		UNIT ASSY,SRS		01			77960	AA		1	TA0Z	2		AC						1					AA		1	TA0Z	2		AD						1							"		
	D			S	Z		5		AA		1	TA0Z	2		LC							1				AA		1	TA0Z	2		LD							1						"		
2	A	2	7796Z-TA0 -L020-M4		4	N			AA		1	TA0Z	2		LF						1					AA		1	TA0Z	2		LH						1							"		
	B	U	7796Z-TA0 -L010-M4				NY		24		2	TA0A	2		AA							'1				24		2	TA0A	2		AB							'1				2	2	080721	Y	
	C		SPEC,UNIT ASSY SRS		01				24		2	TA0A	2		AC						'1					24		2	TA0A	2		AD						'1							"		
	D				Z		4	1M	24		2	TA0A	2		LC							'1				24		2	TA0A	2		LD							'1						"		
3	A								24		2	TA0A	2		LF						'1					24		2	TA0A	2		LH						'1							"		
	B																																														
	C																																														
	D																																														
4	A								***KYUU TEKIYO*** "PREVIOUS APPLICATION" ***																																						
	B							F47		AA		TA0A	2		AA							1					AA		TA0A	2		AB							1								
	C							77960		AA		TA0A	2		AC						1						AA		TA0A	2		AD						1									
	D									AA		TA0A	2		LC							1					AA		TA0A	2		LD							1								
5	A									AA		TA0A	2		LF						1						AA		TA0A	2		LH						1									
	B																																														
	C																																														
	D																																														
6	A																																														
	B																																														
	C																																														
	D																																														
7	A																																														
	B																																														
	C																																														
	D																																														

手配系列 PROCESS LOCATION

D/C PART №	LOC.GR. PT	CUR	NEWS	連 S	依存度 SHR%	実施年月日 BEINING DATE	手配記号 LOCATION	P T	属 A	色 C	M L	段 G	手配記号 LOCATION	P T	属 A	色 C	M L	段 G	手配記号 LOCATION	P T	属 A	色 C	M L	段 G	手配記号 LOCATION	P T	属 A	色 C	M L	段 G	手配記号 LOCATION	P T	属 A	色 C	M L	段 G	手配記号 LOCATION	P T	属 A	色 C	M L	段 G
77960-TA0 -L020-M4	C		AA	1	100	080424	3261		1				AF		2																											
7796Z-TA0 -L020-M4	C		AA	1	100	080424	3261		3																																	

概略コード　D/C REASON　０１変更　０２改訂　０３新設新図　０４流用　０５量試　０６暫定　０７部番変更　０８材質変更　０９名　１０廃止　１１設変中止　１２旧図復活　１３整備図　１４適用変更　１５個数変更　１７管理修正　１８未出図発行　２５部番統合
３１廃止部品の変更　３２廃止部品の改訂　３３割込新設　４０構成変更　４１構成流用復活　５０次変Ａ－Ｂ　６０改廃設変　７０親離れ　７１親新設　７２ケ／親変更　７３Ｃマーク新設　７４Ｃマーク廃止　８０２／４／汎内廃止　８１ＳＳ／２／４／汎内廃止　８２色別親変更　８３素材共用新設
８４素材共用廃止　８５適用機種指定　８６使用先親設定　９０手配系列変更　９１内外作変更　９２色別適用変更　９３ＫＤ現調変更　９４ベース機種適用流用　９５機種廃止　９６適用日程変更　９７Ｍ／Ｌ変更　９８ＯＰ適用変更　９９部番区分変更　【７００】

仕様通知附表
DESIGN CHANGE NOTICE

CTL.BLOCK

製作所 C PLANT　　作成 08-06-23 AS OF

FAMILY	通知 № D/C №	PAGE
C42	C48-2-1702	4

№		LEVEL	NEW PART No. / OLD PART No. / PART NAME	HNS	SP 互換 概略 種類	SN I/C.ABILITY REASON DRW.ID	C SIZE	BLOCK SECTION ITEM No. 個/親 QTY.
1	A	1	77960-TA0 -X020-M4		4	S		
	B	U	77960-TA0 -X011-M4				NY	F47
	C		UNIT ASSY,SRS		01			77960
	D			S	M		M	
2	A	2	7796Z-TA0 -A020-M4		4	N		
	B	U	7796Z-TA0 -A011-M4				NY	
	C		SPEC,UNIT ASSY SRS		01			
	D				Z		4	1M
3	A	2	77960-TA0 -ZZ12-M4		4	N		
	B	U	77960-TA0 -ZZ11-M4				YY	
	C		DWG,UNIT ASSY SRS		02			
	D			S	Z		5	1M
4	A							
	B							
	C							
	D							
5	A							
	B							
	C							
	D							
6	A							
	B							
	C							
	D							
7	A							
	B							
	C							
	D							

№	手配区分 LOC.GR. 新 NEW	旧 OLD	切換順位 S	基本機種 MODEL	E/F	OP	派生上桁 TYPE	0	1	2	3	4	5	6	7	8	9	手配区分 LOC.GR. 新 NEW	旧 OLD	切換順位 S	基本機種 MODEL	E/F	OP	派生上桁 TYPE	0	1	2	3	4	5	6	7	8	9	順位 SEQ	仮本 T/F	切換年月 EFECTIVE	等級 RANK	ロット LOT
1A	**SEPPEN TEKIYO*** "APPLICATION/QUANTITY CHANGE" ***																																						
1B	BB		1	TA5A	2		XA							1				BB		1	TA5A	2		XB								1			1	2	080616	Y	
1C	BB		1	TA5Z	2		XA							1				BB		1	TA5Z	2		XB								1					"		
1D	BB		1	TA6A	2		XA							1				BB		1	TA6A	2		XB						1							"		
2A	BB		1	TA6Z	2		XA							1				BB		1	TA6Z	2		XB						1							"		

手配系列 PROCESS LOCATION

D/C PART №	LOC.GR. PT	CUR	連 NEWS	依存度 SHR%	実施年月日 BEINING DATE	手配記号 LOCATION	P 属 TA	色 C	M L	段 G	手配記号 LOCATION	P 属 TA	色 C	M L	段 G	手配記号 LOCATION	P 属 TA	色 C	M L	段 G	手配記号 LOCATION	P 属 TA	色 C	M L	段 G	手配記号 LOCATION	P 属 TA	色 C	M L	段 G	手配記号 LOCATION	P 属 TA	色 C	M L	段 G
77960-TA0 -X020-M4	C		BB	1100	080424	LP	4			*																									
7796Z-TA0 -A020-M4	C		AA	1100	080424	LP	4			*																									
77960-TA0 -ZZ12-M4	C		CC	1100	080424	LP	4			*																									

概略コード　D/C REASON　０１変更　０２改訂　０３新設新図　０４流用　０５量試　０６暫定　０７部番変更　０８材質変更　０９名　１０廃止　１１設変中止　１２旧図復活　１３整備図　１４適用変更　１５個数変更　１７管理修正　１８未出図発行　２５部番統合
３１廃止部品の変更　３２廃止部品の改訂　３３割込新設　４０構成変更　４１構成流用復活　５０次変Ａ－Ｂ　６０改廃設変　７０親離れ　７１親新設　７２ケ／親変更　７３Ｃマーク新設　７４Ｃマーク廃止　８０２／４／汎内廃止　８１ＳＳ／２／４／汎内廃止　８２色別親変更　８３素材共用新設
８４素材共用廃止　８５適用機種指定　８６使用先親設定　９０手配系列変更　９１内外作変更　９２色別適用変更　９３ＫＤ現調変更　９４ベース機種適用流用　９５機種廃止　９６適用日程変更　９７Ｍ／Ｌ変更　９８ＯＰ適用変更　９９部番区分変更　【７００】

END

EA14-004

HONDA

11/10/2014

QUESTION 10

Q10-1 Mass Production Spec Notice English_Redacted

MASS PRODUCTION SPEC. NOTICE

SOKIMA NO. F47-5209

PIC TEL. 37821

(1/2)

Revision No. C48-2-,702

Dept. 4G2 Gr. CF	Ueda / Nakashima / Tadokoro / Moriguchi / Shindo / Omoto	Sugamata / Ishikara	Issue Date 23-APR-08	Cont. Dept Osugi

TITLE	08M ACCORD KA/KC/KL/KX/KK SRS UNITの衝突パラメータ変更 08M ACCORD KA/KC/KL/KX/KK SRS UNIT CHANGE OF CRASH PARAMETER

Content

Related Request No. QAH2552

[redacted] title.
Issue for following P/N.

① 77960-TA0-E712-M4 P/N. UNIT ASSY SRS
② 77960-TA0-L020-M4 UNIT ASSY SRS
③ 7796Z-TA0-A020-M4 SPEC. UNIT ASSY SRS
④ 7796Z-TA0-L020-M4 SPEC. UNIT ASSY SRS

3. 詳細は附表に記す。 Supplemental for details

Confirmed By: Sato

Application Request, supplement to Mfg., HS & HB

Production Plant: Please start applying the countermeasure with available vehicles. To be delivered to MAP 5/6, Css, 5/12

±0 / ±0

Mfg. Proc.				
A	B	C	D	E
Request to H.B.				
I	II	III	IV	*

ORIG. DWG.					
A0	A1	A2	A3	A4	SPEC
2	—	—	—	—	2 Sec. 564 Page

Related Revision No.: —

AMN	—	SL	1
SMN	—	IH	—
HPS	—		
Package No	X-2008-03728		

1.Planned Effective Date 2.Planned Vehicle 3.In Detail 4.Other

Signature

Signature

INTRODUCTORY CATEGORY

RECD DATE	. .	Initial	Tentative DATE	. .	Initial	Official DATE	. .	Initial

DIST.	S.S	C.S	Y.S	M.S	K.S	TA.S	BG	HB	HS	HAC	KN	MAP	ELP	AEP	HCM	HUM	HATC

02051

SUPPLEMENTAL

Revision No. C48-2-1702

2/2

No.	Part Name	Description
	SPEC,UNIT ASSY SRS 77962-TA0-A020 L020 -M4	P276 8.2.2.1 Parameters in SRS. • parameter version. a2px-ECU17s.Par ⇒ a2px-ECU21S.par • parameter ID [redacted] ⇒ [redacted] • B-Pillar SIS HS-Path-min. [redacted] ⇒ [redacted] P270 Table 8-3

14	Front ; a2pxu-12f-ECU.Par Side ; a2pxu-ECUY-17s.Par

⇓

14	Front ; a2pxu-12f-ECU.Par Side ; a2pxu-ECUY-17s.Par
15	Front ; a2pxu-12f-ECU.Par Side ; a2pxu-ECUY-21s.Par

Table 8-4

24	Front ; a2pxu-12f-ECU.Par Side ; a2pxu-ECUY-17s.Par

⇓

24	Front ; a2pxu-12f-ECU.Par Side ; a2pxu-ECUY-17s.Par
25	Front ; a2pxu-12f-ECU.Par Side ; a2pxu-ECUY-21s.Par

98092

EA14-004

HONDA

11/10/2014

QUESTION 10

Q10-1 Mass Production Spec Notice Japanese_Redacted

SUKTMA NO

[redacted]

SUPPLEMENTAL

No.	Part Name	Description
	SPEC, UNIT ASSY SRS 77962-TA0-A020 L020 -M4	P276 8.2.2.1 Parameters in SRS. • parameter version. a2PX-ECU17S.Par ⇒ a2PX-ECU21S.Par • parameter ID [redacted] ⇒ [redacted] • B-Pillar SIS HS_Path_min. [redacted] ⇒ [redacted]

P270

Table 8-3

14	Front ; a2pxu_12f_ECU.Par Side ; a2pxu_ECUY-17s.Par

⇓

14	Front ; a2pxu-12f_ECU.Par Side ; a2pxu-ECUY-17s.Par
15	Front ; a2pxu 12f_ECU Par Side ; a2pxu-ECUY-21s.Par

Table 8-4

24	Front ; a2pxu-12f_ECU Par Side ; a2pxu_ECUY_17s.Par

⇓

24	Front ; a2pxu-12f-ECU.Par Side ; a2pxu-ECUY-17s Par
25	Front ; a2pxu-12f-ECU, Par Side ; a2pxu_ECUY-21s, Par

EA14-004

HONDA

11/10/2014

QUESTION 11

Specifications (need to make confidential)

Supplier contacts

Name: Kathleen Kane
Title: Head of Quality Management
Department: Passive Safety & Sensorics NAFTA
Tel: [redacted]
Mobile: [redacted]
e-mail to [redacted]

EA14-004

HONDA

11/10/2014

QUESTION 11

Specifications (need to make confidential)

Supplier contacts

Mike Rains
Director-Product Safety
TK Holdings Inc.
2500 Takata Drive
Auburn Hills, Mi 48326
[redacted]

EA14-004

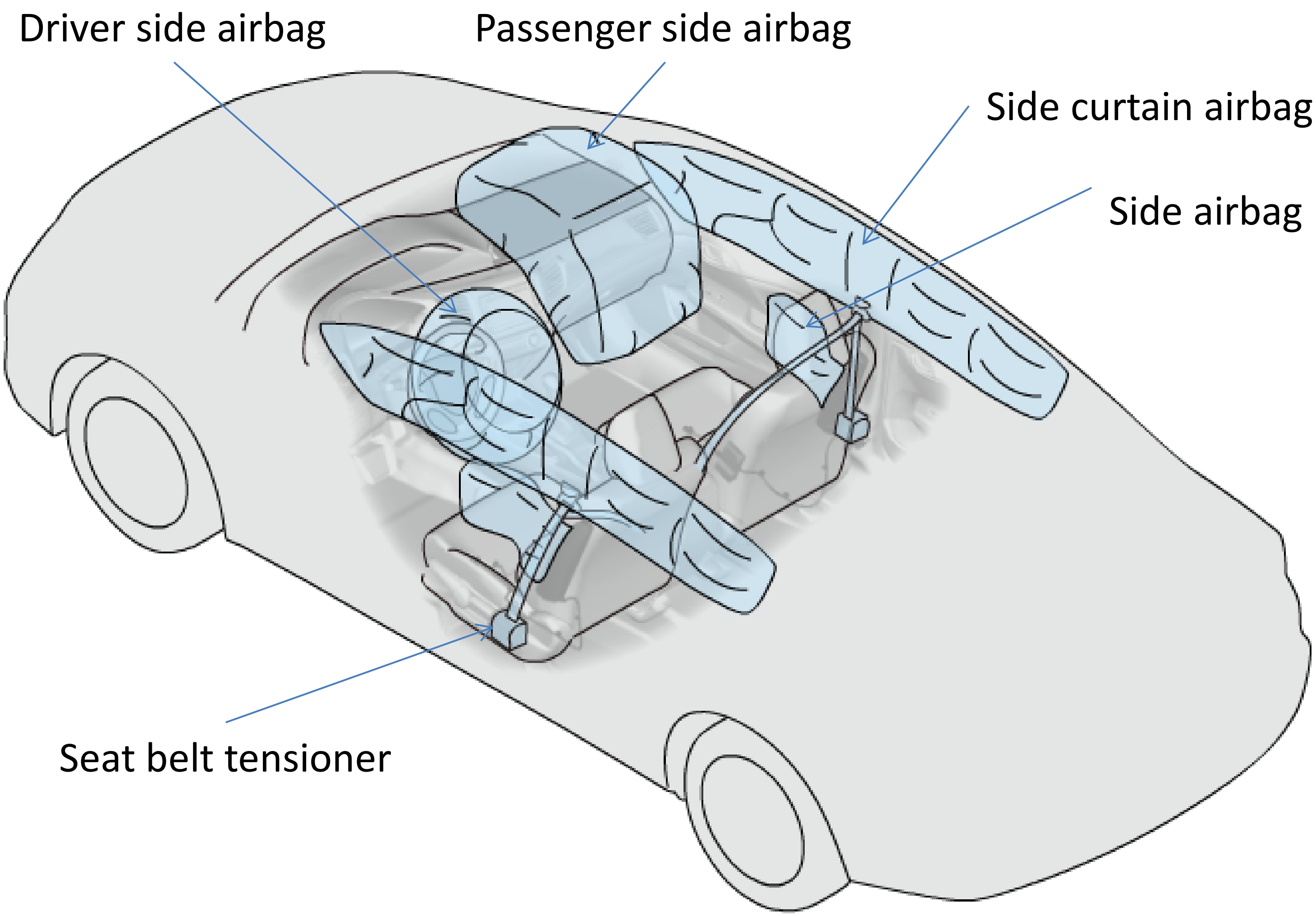
HONDA

11/10/2014

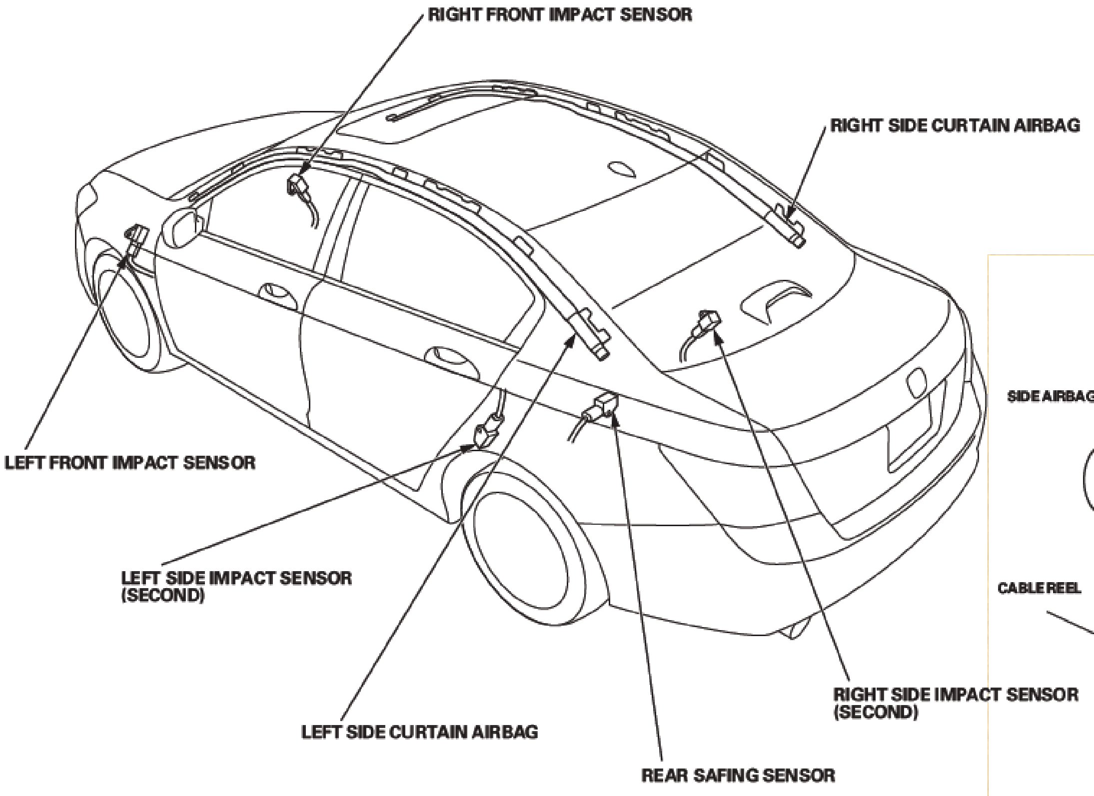
QUESTION 11

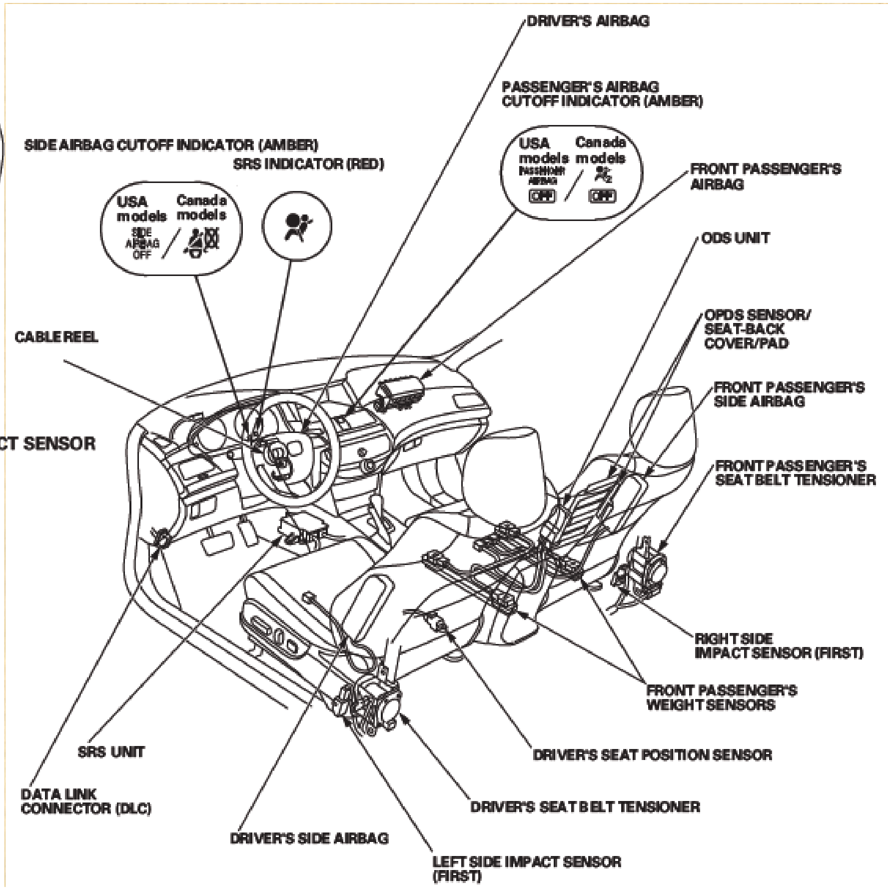
E_Brief explanation for SRS_rev 20140326 △20141003

SRS System Overview

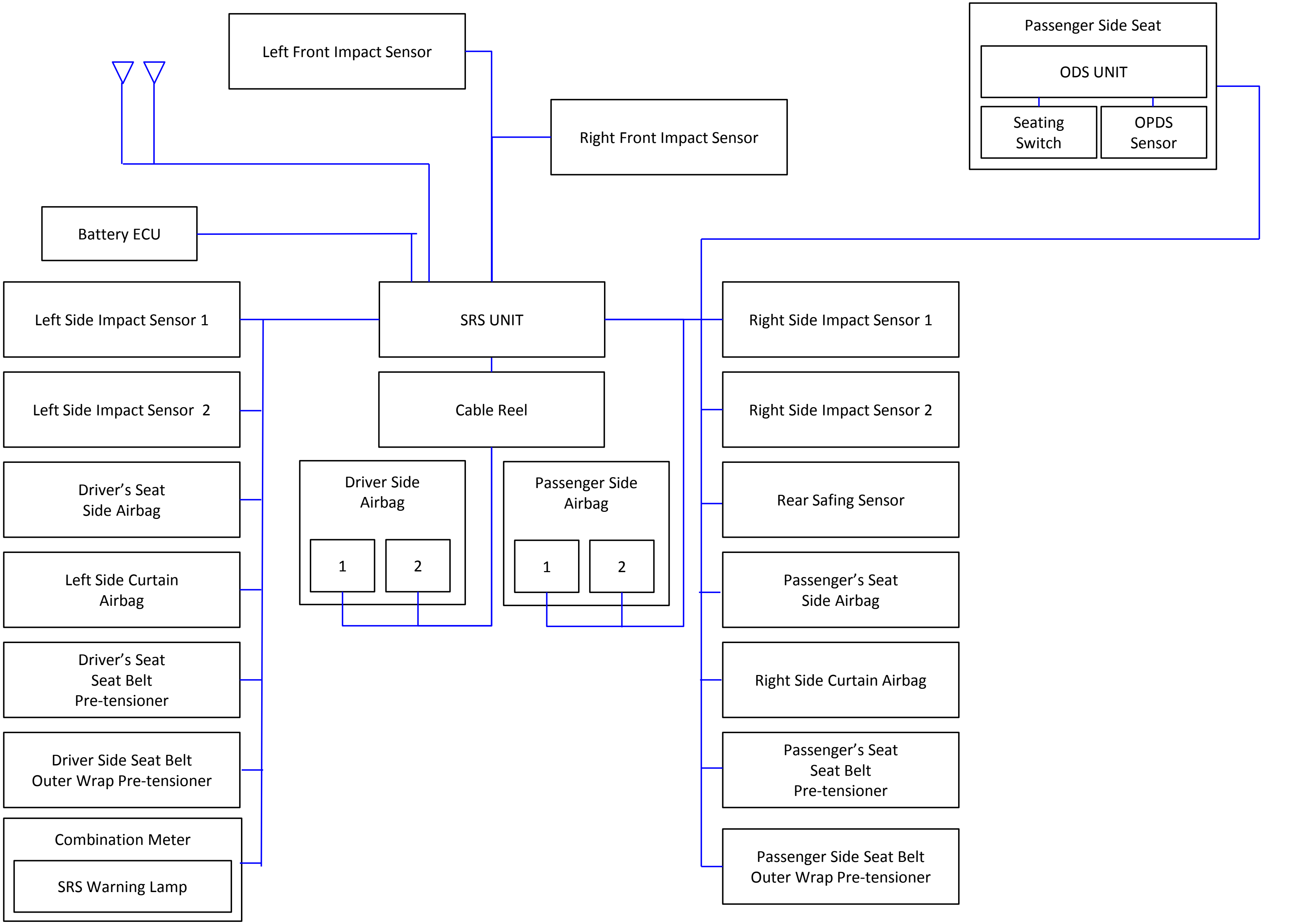


SRS System Overview



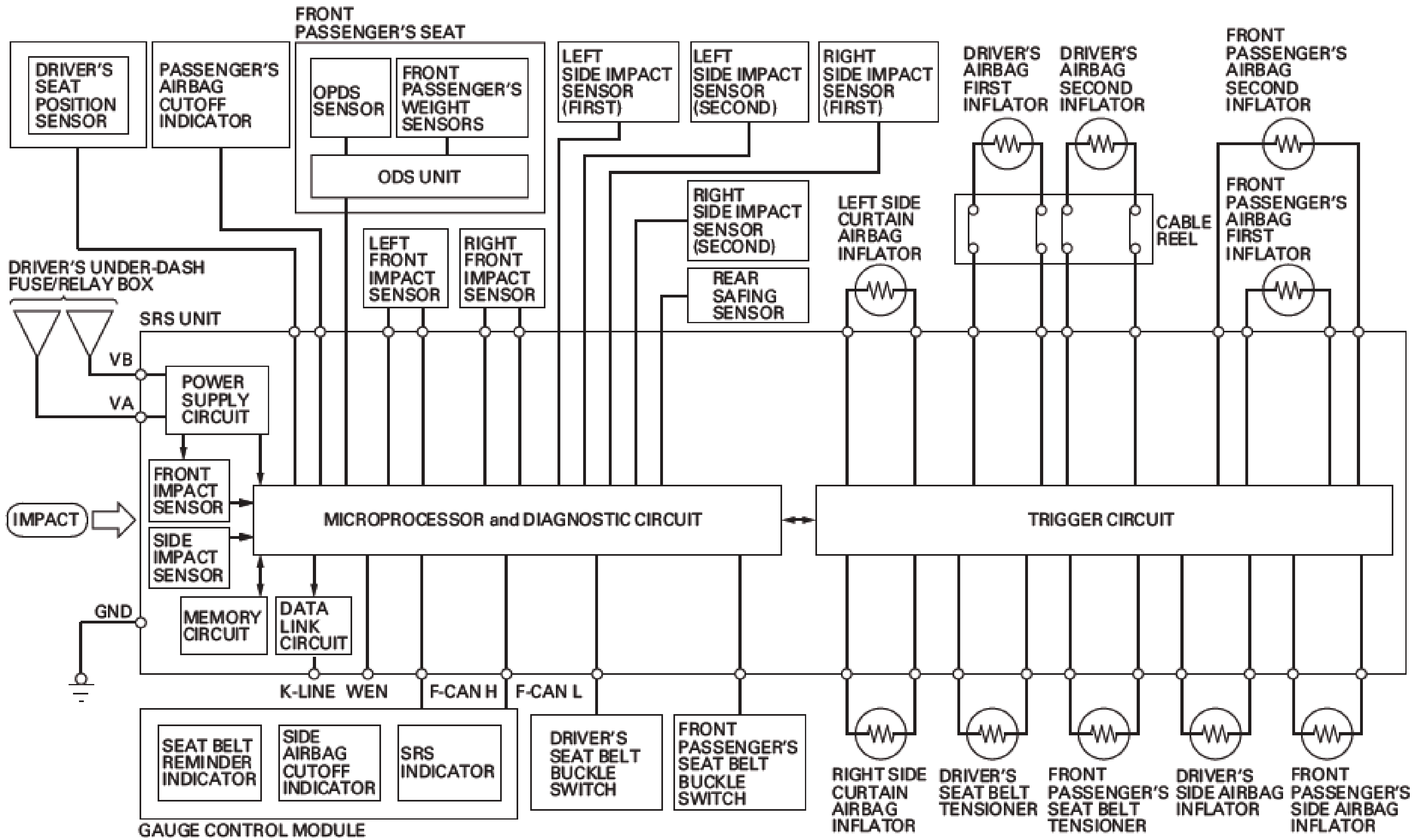


System Block Diagram (Simplified)



System Block Diagram (ACCORD 4-Door)

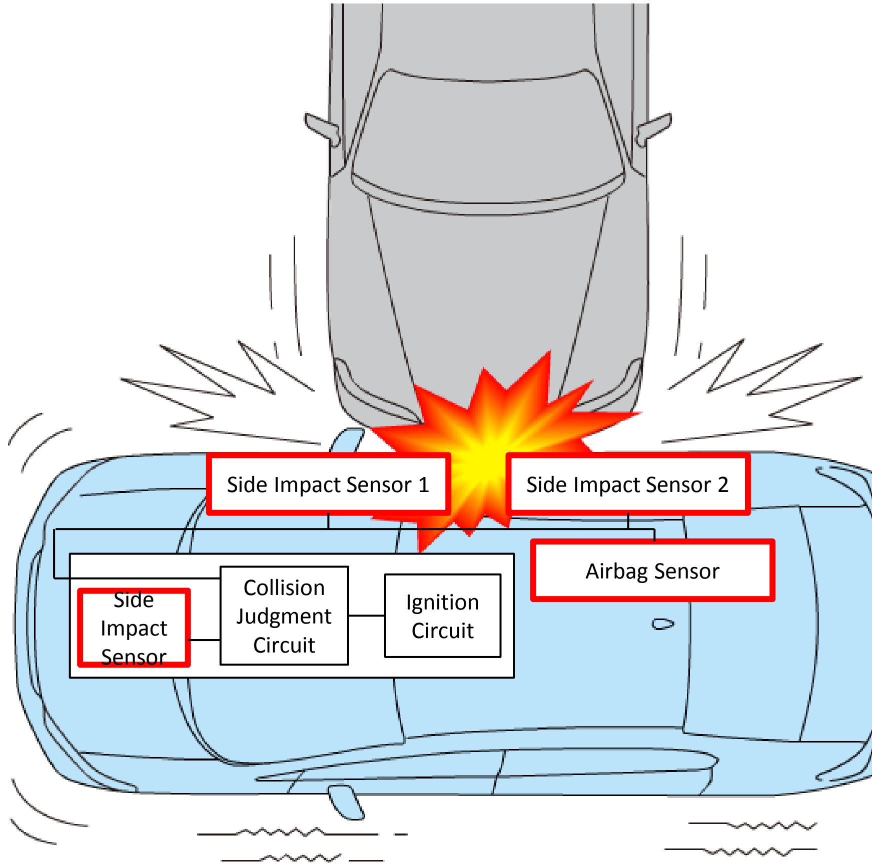
4-Door



Side Airbag and Side Curtain Airbag Operation Process

The impact generated by side collision will be transmitted to side impact sensor, airbag sensor, and SRS unit.

The collision judgment circuit inside of SRS unit determines if the output from side impact sensor and airbag sensor exceed the threshold, and send operation command if the output of side impact sensor inside of SRS unit exceeds the threshold.



Collision judgment circuit sends operation command to ignition circuit, and side airbag and side curtain airbag are activated.

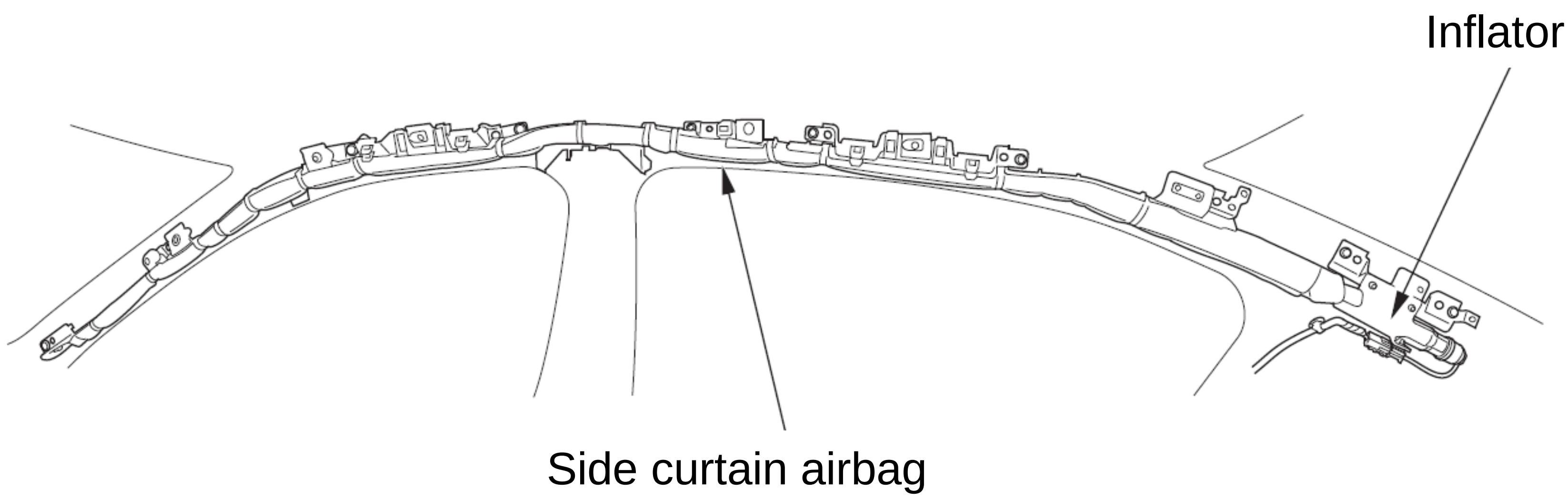
Side airbag is designed to be inflated by 2 different pressure in order to reduce the risk of injury when the airbags are deployed.

The side airbag and side curtain airbag where impact was input will be activated.
However, to protect the head of passenger, side airbag and side curtain airbag may be deployed even with the front collision when certain lateral force is applied.

Side Curtain Airbag

The side curtain airbag is stored compact in the roof side portion and provided with gas by the inflator installed in the rear pillar via the roof side.

(1) The side impact sensor or the rear safing sensor must activate and send electrical signals to the microprocessor.
(2) The microprocessor must compute the signals and trigger the side curtain airbag and the side airbag inflators.
(3) The triggered inflators must ignite and deploy the side curtain airbag and the side airbag at the same time.



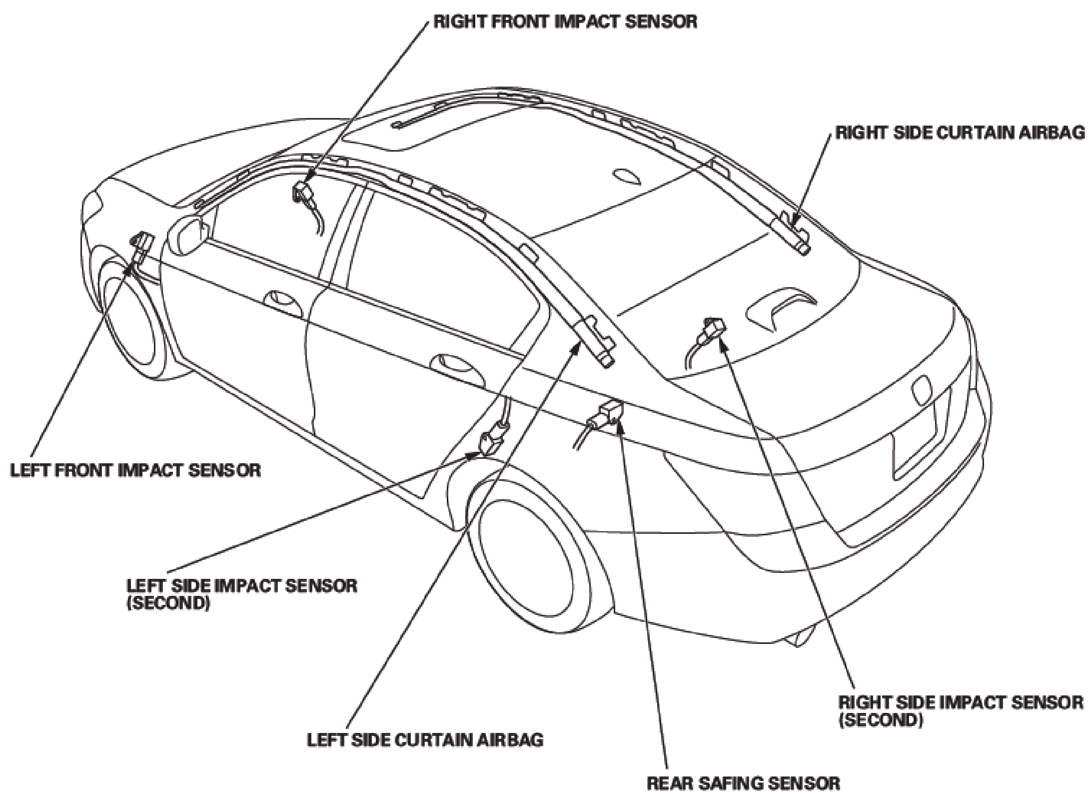
Side Impact Sensor & Rear Safing Sensor

Side Impact Sensor(s)

Side impact sensors are installed on the right and left side of the floor closed to the side faces of a vehicle, detecting impacts applied to areas close to the front door and rear door. When a vehicle collides and an impact higher than that assumed is applied, each side impact sensor converts the impact into an electrical signal and send it to the unit.

Rear Safing Sensor

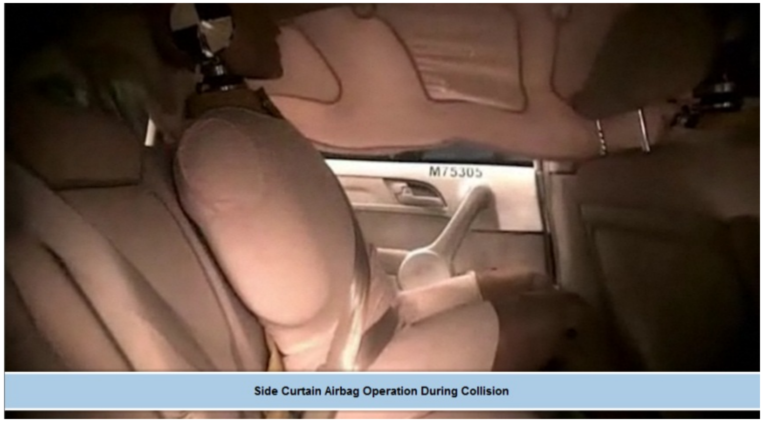
The rear safing sensor is located under the rear seat cushion. The rear safing sensor performs the same basic function as the safing sensor in the SRS unit. It measures sideways G force, such as the force the vehicle would receive in a side collision in the rear, and sends that information to the SRS unit. The SRS unit uses that information, and the information from the side impact sensors to determine the side that is impacted and the force. If the threshold is met, the SRS unit deploys the side airbag, the side curtain airbag, and the front seat belt tensioner on that side.



SRS System Overview

Driver's Seat
Side Airbag

Rear Left Seat
Side Curtain Airbag



EA14-004

HONDA

11/10/2014

QUESTION 11

Design change sheet

Q11-1 Mass Production Spec Notice C47-2-2083_E_REDACTED

[redacted]

[redacted]

[redacted]

EA14-004

HONDA

11/10/2014

QUESTION 11

Design change sheet

Q11-1 Mass Production Spec Notice C47-2-2083_J_REDACTED

[redacted]

[redacted]

[redacted]

EA14-004

HONDA

11/10/2014

QUESTION 11

Design change sheet

Q11-2 Mass Production Spec Notice C47-2-2260_E_REDACTED

[redacted]

[redacted]

[redacted]

EA14-004

HONDA

11/10/2014

QUESTION 11

Design change sheet

Q11-2 Mass Production Spec Notice C47-2-2260_J_REDACTED

[redacted]

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EA14-004

HONDA

11/10/2014

QUESTION 11

Design change sheet

Q11-3 Mass Production Spec Notice C48-2-0790_E_REDACTED

[redacted]

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[redacted]

EA14-004

HONDA

11/10/2014

QUESTION 11

Design change sheet

Q11-3 Mass Production Spec Notice C48-2-0790_J_REDACTED

[redacted]

[redacted]

[redacted]

[redacted]

EA14-004

HONDA

11/10/2014

QUESTION 11

Design change sheet

Q11-4 Mass Production Spec Notice C48-2-1702 08M ACCORD SRS UNIT_E_REDACTED

[redacted]

[redacted]

EA14-004

HONDA

11/10/2014

QUESTION 11

Design change sheet

Q11-4 Mass Production Spec

Q11-4 Mass Production Spec

Notice C48-2-1702 08M

ACCORD SRS

UNIT_J_REDACTED

[redacted]

[redacted]

EA14-004

HONDA

11/10/2014

QUESTION 11

Specifications (need to make confidential)

TWG GUIDE LINE

RECOMMENDED PROCEDURES FOR EVALUATING OCCUPANT INJURY RISK FROM DEPLOYING SIDE AIRBAGS

Prepared by

The Side Airbag Out-of-Position Injury Technical Working Group
(A joint project of Alliance, AIAM, AORC, and IIHS)

Adrian K. Lund (IIHS), Chairman

(First Revision – July 2003)

Contents

Foreword

This document provides the results of the deliberations of the Side Airbag OOP Injury Technical Working Group. The working group was sponsored by the Alliance of Automobile Manufacturers (Alliance), Association of International Automobile Manufacturers (AIAM), Automotive Occupant Restraints Council (AORC), and Insurance Institute for Highway Safety (IIHS) for the purpose of developing a common understanding of the risks associated with side airbag deployments and ways to minimize those risks. The principal part of this report is a set of recommended procedures for assessing the risks, which begins in Section 3. In the Introduction, we provide background on the formation of the Technical Working Group, its goals, and its limitations. In addition, we review the substance of the Working Group's deliberations, including the data and philosophies that guided the development of the recommendations.

It is the expectation of the Technical Working Group's members that these recommendations will be followed by manufacturers and their suppliers for future airbag designs, and we are confident that following the recommendations will reduce the already small risk of injury from interactions with side airbags even further. However, three limitations of the Working Group's efforts are important to note:

- Some level of inflation injury is inherent with any inflatable restraint system that reduces the risk of injury in side impacts. The group's work reflects the best current information on how to measure the risk of significant injury from the airbag inflation itself and assure that it is very small, but the risk cannot be made zero.

- The level of scientific understanding is not the same for all of the potential OOP injury risks. Scientists are more confident in the evidence supporting the conclusions about some of the injury values described in this report than in others. The group was concerned that misplaced confidence in some of the injury values with limited scientific support might result in delaying or discarding some side airbag systems that hold promise for reducing the risk of significant injuries in severe side impact crashes.

- Research on side airbag inflation injury is an ongoing, worldwide effort. The final recommendations may need revision, as new information becomes available. The sponsoring groups have agreed to periodically reconvene the Technical Working Group to review the adequacy of the recommendations.

1 Introduction

Airbags to protect occupants in side impacts are appearing in the new car market rapidly. Introduction of these devices can reduce the incidence of serious injury in side impact crashes, especially those airbag devices that interpose themselves between the heads of occupants and outside structures (trees, poles, other vehicles) that intrude into the occupant compartment during the crash. In 1998, side impacts of passenger vehicles resulted in 9,482 fatalities, 2,891 in single vehicle crashes and 6,591 in multiple-vehicle crashes. Occupants of passenger cars are particularly vulnerable when their car is struck in the side by large and tall vehicles; side airbags offer one major countermeasure to this risk in the face of the growing popularity of light truck vehicles.

However, airbags also introduce new energy into the crash, a situation that can exacerbate rather than ameliorate injury likelihood under some conditions. Those conditions are typically labeled as occupant out-of-position (OOP) situations. With frontal airbags, 150 fatalities have occurred to OOP occupants in crashes of such low speed that only minor or moderate injuries would have been expected without airbags. National Highway Traffic Safety Administration (NHTSA) data suggest that the incidence of these injuries is declining, as airbag designs evolve and as occupants become more aware of their risk and the simple countermeasures to reduce them ("buckle up – kids in the back"). Although no deaths or serious injuries have occurred from side airbags to date, it is imperative that automakers and the safety community take measures that minimize the potential negative side effects of side airbags as they are introduced into new cars.

1.1 Historical Background

The Side Airbag OOP Injury Technical Working Group was formed in an effort to meet this goal. Its genesis began when concerns were expressed about the aggressiveness of side airbags, which brought the issue of side airbag risks to the public's attention. The NHTSA, which had been gathering information about side airbags as well, scheduled a public meeting for April 19, 1999 to discuss the rising issue. On April 15, 1999, just prior to the public meeting, NHTSA received a petition from the Center for Auto Safety asking the agency to develop regulatory test requirements that could assure that side airbags would not pose risks to vehicle occupants that happened to be in the path of inflating airbags.

At the April 19 public meeting, more test results were presented which demonstrated the high forces that could be experienced by out-of-position occupants. However, concerns about these test results were balanced by other crash test data showing that side airbags were an important crash injury countermeasure. Furthermore, real-world crash investigation programs sponsored by both NHTSA and Transport Canada included examples of severe crashes in which side airbags apparently prevented serious injuries. Neither organization had yet discovered any cases of serious injuries or deaths caused by side airbags. Nevertheless, most participants at the meeting recognized the need to coordinate information about the new technology of side airbags and promising procedures for assessing their potential risks to out of position occupants.

On May 21, 1999 the NHTSA's administrator, Ricardo Martinez, M.D., sent a letter to the Alliance of Automobile Manufacturers (Alliance) and the Association of International Automobile Manufacturers (AIAM) asking that the industry develop public standards which their member companies would follow as they developed future side airbag systems that did not pose serious injury risks to vehicle occupants. Dr. Martinez also indicated it was important that the deliberations of the industry be:

- Comprehensive of the hardware and risks involved,
- Open and inclusive of different interest groups, and
- Timely.

In response, Alliance and AIAM asked the Insurance Institute for Highway Safety (IIHS) and the Automotive Occupant Restraints Council (AORC) to join them in sponsoring a technical working group comprised of crash safety and biomechanics experts to develop recommended procedures and performance requirements. Inclusion of AORC assured that the airbag supplier industry, which has a separate body of expertise, had a significant voice in the deliberations. IIHS was asked to chair the technical working group, in part because of its involvement in the analysis of frontal airbag out-of-position problems and because of independence from the auto industry and suppliers.

The first meeting of the Side Airbag OOP Injury Technical Working Group (TWG) was held in the Detroit area, Michigan, on July 21, 1999. Organizations and companies represented at that meeting and subsequent meetings included Alliance; AIAM; AORC; Autoliv; BMW; Bosch; Breed; DaimlerChrysler; Delphi; Ford; General Motors; Honda; Hyundai; IIHS; Dale Kardos and Associates; Mazda; Mitsubishi; Nissan; Porsche; Simula; Subaru; Takata; Toyota; TRW; and Volkswagen. Thus, automakers and airbag suppliers were represented. In addition, the TWG invited NHTSA and Transport Canada to attend the meetings, so that the knowledge of these two government organizations could inform the deliberations. Finally, Nationwide Insurance and George Washington University were included in the working group because of technical background and ties to other consumer information and testing organizations. Thus, participation in the TWG was as broad as possible, with the provision that participants outside the involved industries should have technical backgrounds that allow them to contribute to the technical discussions. Although not members of the TWG, Erika Jones of Mayer, Brown, and Platt (at the request of the Alliance), and Charles Lockwood of AIAM were present for some meetings to provide advice on antitrust and other legal questions that might arise from the activities of the TWG.

1.2 Information Considered by the Technical Working Group

The deliberations of the TWG benefited greatly from the expertise of its membership.

- Members serving on Working Group 3 of the International Organization for Standardization (ISO) Technical Committee 22, Subcommittee 10, which also has been considering procedures for evaluation of side airbags, kept the TWG apprised of parallel activities there. The preliminary work of the ISO Group provided the TWG with a head start on its consideration of test procedures. However, based on information provided the TWG, primarily test data from Transport Canada, several test positions were replaced with new positions that seemed both more realistic and more likely to reveal potentially aggressive side airbags. It is the understanding of the TWG that the ISO test procedures (TR 14933) have been modified to parallel the procedures recommended here.

As part of the ISO Working Group 3 activities, several auto manufacturers have been conducting tests of different child dummies. Results of that testing were important in the TWG's choice and specification of test dummies in its recommendations.

- Airbag supplier companies updated the TWG on their efforts to develop side airbags that meet the conditions being considered. One important implication of their information concerns the inherent relationship between the expected effectiveness of side airbags in serious crashes and the risk of OOP injury. Suppliers indicated they were developing side airbag prototypes that satisfied the OOP test criteria, but these airbags were clearly lower in power. There were no estimates as to the degree to which side airbag effectiveness was compromised, however, because no comparative tests were being conducted. According to suppliers, they are being asked to demonstrate only that new side airbag designs will produce good scores in the FMVSS 214 compliance test or the Lateral Impact New Car Assessment Program (LINCAP), in addition to satisfying the OOP tests.

  Another important issue addressed by the suppliers' data is that of test-to-test repeatability. High repeatability (or low variability) is necessary for airbag system developers to be confident that low scores on one test are predictive of low scores on subsequent tests. The higher the variability, the harder it is to have confidence in the performance of a system regarding a particular injury criterion. Supplier information suggests that some of the neck injury tests included in the current recommendations have relatively low repeatability, meaning that it would be necessary to design well below any selected injury threshold if a manufacturer wanted to assure that most airbags in mass production will meet the criterion. A point frequently emphasized by suppliers is that setting injury risk targets very low for OOP testing could greatly reduce the effectiveness of side airbags in real crashes, because the energy levels will have been set very low.

- The NHTSA reported on its Special Crash Investigations that involved side airbag vehicles. Following the experience with frontal airbags, the agency has maintained a concentrated effort to monitor the real-world experience with side airbags in order to be aware as early as possible of any untoward incidents. As of October, their program had investigated 37 crashes of vehicles with side airbags. Those investigations indicated that the side airbags already on the road at this time are performing well in the real world. Side airbags appeared to have prevented serious or fatal injury in a number of cases, including two where children were present. So far, no fatal injuries have been attributed to occupant interaction with side airbags; the cause of all fatal injuries in these side impacts has been severe intrusion. One serious injury, that to a 76 year old male driver, appears to have been caused by the side airbag, although there is continuing discussion about the case with the CIREN team that initiated the investigation. Side airbags are causing some injuries, but these tend to be minor or moderate. Overall, real-world experience has shown no serious problem with side airbags at this time; however, the number of deployment incidents is still quite small.

- Transport Canada has performed numerous crash tests and static side airbag deployment tests to study both out of position injury risk and the effectiveness of side airbags in severe side impacts. Based on their data, the TWG decided to replace two of the child OOP tests that had been proposed initially by ISO Working Group 3 with two tests that Transport Canada had developed. These tests, which address the OOP injury risk from side airbags that deploy from seat backs, appeared to adopt realistic risk positions and had been carefully specified by Transport Canada.

Transport Canada has also conducted a number of full-scale side impact crash tests of vehicles with side airbags. These tests, in which the side airbag car is struck in the side by a utility vehicle, show impressive performance of the systems. In one test, a child dummy seated in the rear seat of a vehicle equipped with rear seat side airbags appeared to receive good protection from the side airbag, which prevented the child dummy's head from contacting the stiff structure of the rear door.

- Recognized world leaders in the specification and quantification of injury risk from forces experienced during car crashes participated in the TWG. One of the difficulties faced by the TWG was to specify methods of testing for injury risk with dummies that were not designed in anticipation of the test conditions. For example, several of the recommended tests use frontal crash test dummies to assess risk from airbags that are more likely to deploy into the side of a human. The presence of these experts allowed the TWG to consider thoughtfully the problems in using these dummies and to reach reasonable recommendations for their use in assessing the risk of OOP injury from side airbags.

2 Scope of the Recommendations

Side airbags are inflatable devices intended to help reduce the crash injury risk of vehicle occupants adjacent to the struck side of the vehicle. Side airbags work by interposing an inflatable cushion between vehicle occupants and the vehicle's side structure, which is pushed into the occupant by the striking vehicle or stationary roadside object (e.g. tree or pole). During the inflation process, an airbag releases considerable energy and, as a result, substantial forces can be developed between the deploying airbag and the nearby occupant. The interaction forces may be greater than intended by the airbag designer when the seat occupant or part of the seat occupant blocks the path of the inflating airbag. This situation may occur for a normally seated occupant whose outboard arm would be near a side airbag. Normally seated occupants may also be forced out-of-position by pre-crash events such as braking or hard maneuvering. Finally, some vehicle occupants drive or ride in positions different from those considered normal. A passenger sleeping with his/her head against the vehicle side, for example, may experience side airbag forces different from a normally seated passenger. The TWG recognizes these as circumstances to be considered in assessing side airbag systems. Other circumstances could also occur that are beyond the consideration of this TWG. For example, unrestrained occupants in a complex rollover crash may achieve positions unanticipated by these recommended procedures. However, the TWG does not believe the circumstances of this group should unnecessarily restrict the availability of side airbags to protect the remainder of the population.

This report describes the test devices (dummies), instrumentation, test procedures, and performance guidelines that should be used for assessing the injury risk of interactions between a deploying side airbag and a vehicle occupant. They do not address the issue of secondary impacts because the TWG believes the primary risk occurs during interaction with the side airbag. The test procedures are sufficiently broad to cover airbags which deploy from the door or side trim panel, the armrest, the seat back or cushion, the roof support pillars or roof rail area as well as occupants ranging in size from young children through adults. Most of the performance criteria are established to assure that the risks of life-threatening injuries to the head, neck, thorax and abdomen are low, but they also include criteria that minimize the risks of less serious injuries to the arm and pelvis. The test procedures described in this report provide as comprehensive an evaluation as possible for current state-of-the-art airbag designs. However, only sound engineering judgment can guarantee the comprehensive evaluation of any design. Additional tests, with slight variations of the recommended dummy positions, may be needed to ensure the robustness of the occupant interaction measurements.

2.1 Issues Not Addressed by the Technical Working Group

The TWG agreed with NHTSA that its deliberations should have a timely conclusion. To that end, the focus was on assuring that all those involved in the development of side airbags evaluated the potential risk according to the best knowledge of the industry. To achieve this focus, it was agreed that the TWG would ***not*** address several important issues:

- **Methods for assessing the effectiveness of side airbags**. This issue was outside the scope of the TWG's mission, described above. However, the TWG notes that methods to evaluate the effectiveness of side airbags have been described elsewhere and include vehicle crash tests and impact simulation.

- **Schedules for implementation of the recommended evaluation procedures by individual manufacturers**. It is expected that all side airbag systems currently under development or those developed in the future will be designed according to the recommended procedures. While the real-world experience with side airbags to date has been very positive, there have not been enough deployments to assess the OOP injury risk of side airbags from accident data. The majority view of the TWG is that new systems should be designed according to these recommendations for further limiting out-of-position occupant injury risk largely because new technology is emerging that is expected to meet the guidelines while still providing effective side impact protection. Thus, new systems should be designed according to these recommendations for the simple reason that they now can be. This does not mean that older systems pose an unreasonable risk.

- **Dissemination of information about out of position injury risk and compliance with the recommendations**. The TWG recognizes that there is considerable public interest in the potential risk of side airbags to out-of-position occupants. However, communicating the actual risk of out-of-position injury in a meaningful way is complex, and this issue falls outside the expertise of the TWG. Moreover, there is likely to be variation in the degree to which these recommendations will be applied to side airbag systems that are already in vehicles, so this issue must be addressed by individual manufacturers.

3 Recommendations

The recommendations of the TWG address three substantive areas:

- The tools or test devices (crash test dummies) best suited for assessing injury risk from the close-range deployment of side airbags.

- Performance criteria against which to assess the injury risk indicated by the forces measured on the test devices.

- A standard set of test procedures (occupant positions) for assessing side airbag inflation-injury risk associated with various side airbag designs.

3.1 Test Devices

The Side Airbag Out-of-Position Injury Technical Working Group focused principally on the risk of injury to small women, adolescents, and children. Even these occupants have low risk of injury from side airbag systems because the small size of side airbags means that occupants must be in the deployment path and near the module when the airbags deploy. Larger adults and infants are expected to be at even lower risk due to size and/or position in the vehicle seat. Given generally lower injury risk as occupant size increases, the small female should experience the maximum risk faced by an adult. For infants and toddlers (1-2 years), it is expected that the majority will increasingly be restrained in appropriate child restraints. The locations of these restraints place them out of the path of deploying side airbags.

These observations led the Technical Working Group (TWG) to conclude that the risk of side airbag inflation injury can be assessed using dummies representing the small female (and adolescents), the 6-year-old child, and the 3-year-old child. However, the TWG encourages vehicle manufacturers and their suppliers to verify whether these conclusions are appropriate for a given vehicle configuration. If a particular system places a larger adult's head nearer the airbag deployment area than achieved by the small female or places a restrained child in a child seat in the deployment path, then this new risk should be assessed.

In assessing OOP injury risk, the TWG is recommending the use of child dummies developed for frontal impact testing and a small adult dummy developed for side impact testing. In reality, OOP injury risk can occur from forces applied in many directions – frontal, lateral, from the rear, from above – directions for which these dummies may not provide direct injury measures. There are relatively few test devices available for assessing some of these injury risks (for example, lateral forces or forces from the rear). Nevertheless, the TWG has concluded that appropriate positioning of the dummies that are available, such that the force transducers are oriented as designed with respect to the direction of force from the deploying airbags, can provide meaningful assessment of OOP injury risk. This conclusion reflects, in part, the fact that some of the risk will occur to occupants whose position in the vehicle exposes them to the types of forces that the dummies were designed to measure (i.e., frontal forces for frontal dummies). It also reflects the fact that each side airbag system will be subject to multiple tests. This should become more apparent as the reader considers the array of tests described in Section 3.3.

The test dummies recommended for use at this time by the TWG are described in the following sections. They are also listed In Table 1, which includes an indication of the required instrumentation to measure the injury risks specified elsewhere in this document.

3.1.1 Hybrid III 3-Year-Old Child Dummy

This dummy represents an average 3-year-old-child and was developed for evaluation of child restraint systems and frontal impact countermeasures. The dummy's specifications are described in SAE Engineering Aid 31 and 49 CFR Part 572 Subpart P. The Q3 dummy, developed by TNO, also was considered by the TWG. The Q3 was supposedly designed to have both front and lateral biofidelity. However, testing of the Q3 by members of the TWG showed that it lacks the necessary durability and repeatability to be used in evaluating side airbag OOP injury risk, and its lateral impact biofidelity is no better than the Hybrid III 3-year-old child dummy. As a result, the TWG recommends using the Hybrid III 3-year-old dummy. This is consistent with the current recommendation of ISO/TC22/SC12/WG5.

3.1.2 Hybrid III 6-Year-Old Child Dummy

This dummy represents an average 6-year-old child and was developed for evaluation of child restraint systems and frontal impact countermeasures. The dummy's specifications are described in SAE Engineering Aid 29 (1998) and 49 CFR Part 572 Subpart N. The Hybrid III 6-year old is the only 6-year old child dummy available at this time. The TWG believes its suitability is similar to that of the Hybrid III 3-year old dummy. However, the 6-year old dummy does require the development of a neck shield because of a non-humanlike junction at the back of the head and the neck in which the inflating airbag could become partially trapped. This junction could produce nonbiofidelic load patterns on the dummy, particularly the neck transducers.

Use of the Hybrid III 6-year old dummy is consistent with the recommendation of ISO/TC22/SC12/WG5.

3.1.3 SID-IIs

This dummy represents a 5th percentile adult female as well as typical 12-13-year-old adolescents. It was designed specifically for the evaluation of side impact countermeasures; hence, it is normally equipped with laterally oriented measuring devices. Daniel et al (1995) describes the dummy's specifications. Use of the SID-IIs is consistent with the recommendation of ISO/TC22/SC12/WG5.

3.1.4 Hybrid III 5th Percentile Adult Female Dummy

This dummy represents a 5th percentile adult female as well as typical 12-13-year-old adolescents. It was designed for the evaluation of front impact countermeasures. The dummy's specifications are described in SAE Engineering Aid 25 (1994) and 49 CFR Part 572 Subpart O. In the context of these recommendations, the Hybrid III small female dummy is a suitable substitute for the SID-IIs in tests of roof-rail-mounted airbags. For roof-rail airbags, the principal injury risks concern the head and neck, which are identical for SID-IIs and the Hybrid III 5th percentile female. Tests of systems that pose a risk of injury to the thorax, abdomen, or pelvis should be tested with the SID-IIs.

Table 1 Test Devices (Dummies) and Recommended Instrumentation for Assessing OOP Injury Risk for Side Airbags

Dummy	Body Region	Instrumentation Measure
Hybrid III 3-Year-Old Child Dummy	Head	3 accelerations (x,y,z)
	Neck	
	Upper	3 forces and 3 moments (x,y,z)
	Lower	3 forces and 3 moments (x,y,z)
	Thorax	
	Upper spine (~T1)	3 accelerations (x,y,z)
	Sternum	
	Upper	1 acceleration (x)
	Center	1 deflection (x)
	Lower	1 acceleration (x)
	Spine (~T4)	3 accelerations (x,y,z)
	Spine at level of Rib 3	1 acceleration (x)
	Lower spine (~T12)	3 accelerations (x,y,z)
Hybrid III 6-Year-Old Child Dummy	Head	3 accelerations (x,y,z)
	Neck	
	Upper	3 forces and 3 moments (x,y,z)
	Lower	3 forces and 3 moments (x,y,z)

	Thorax	
	Upper spine (~T1)	1 acceleration (x)
	Sternum	
	Upper	1 acceleration (x)
	Center	1 deflection (x)
	Lower	1 acceleration (x)
	Spine at level of Rib 1	1 acceleration (x)
	Spine (~T4)	3 accelerations (x,y,z)
	Lower spine at level of Rib 6	1 acceleration (x)
Hybrid III 5th Percentile Adult Female	Head	3 accelerations (x,y,z)
	Neck	
	Upper	3 forces and 3 moments (x,y,z)
	Lower	3 forces and 3 moments (x,y,z)
SID-IIs	Head	3 accelerations (x,y,z)
	Neck	
	Upper	3 forces and 3 moments (x,y,z)
	Lower	3 forces and 3 moments (x,y,z)
	Thorax	
	Upper spine (~T1)	3 accelerations (x,y,z)
	Ribs	3 accelerations (y) and deflections (y)
	Spine box, opposite each rib	3 accelerations (y)
	Abdomen	
	Ribs	2 accelerations (y) and deflections (y)
	Spine box, opposite each rib	2 accelerations (y)
	Lower spine (~T12)	3 accelerations (x,y,z)
	Pelvis	3 accelerations (x,y,z)
	Acetabulum	1 force (y)
	Pubic symphysis	1 force (y)
	Iliac	1 force (y)
5th percentile Arm	Humerus	2 moments (x,y)
	Ulna	2 moments (x,y)

3.1.5 Instrumented Arm for 5th Percentile Adult Female Dummy

The instrumented arm for small female dummies was developed through the cooperation of the SAE Human Biomechanics and Simulation Standards Committee; Mechanical Simulation Subcommittee and Robert A, Denton, Inc. It is designed to fit both the Hybrid III 5th percentile adult female dummy and the SID-IIs.

3.1.6 Dummy Preparation for Side Airbag Tests

3.1.6.1 General

The dummy should be in good condition and able to meet its performance certification requirements. The dummy shall be dressed in tight fitting cotton knit shirt and pants. The skullcap seam shall be taped with 4mm or electrical tape to prevent the airbag from getting caught in the seam. The dummy's head skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.

3.1.6.2 Dummy Test Temperature

The test dummy temperature should be within a temperature range of 20.6-22.2 °C at a relative humidity of 10-70 percent after a soak period of at least 4 hours prior to its application in a test, or that specified for the dummy by the dummy manufacturer.

3.1.6.3 Instrumentation

3.1.6.3.1 General

Measurements needed for the assessment of airbag-inflation injury risk using each of the approved anthropomorphic test devices are shown in Table 1. All measurements should be recorded and filtered according to the latest version SAE J211. These measurements should be recorded continuously and synchronously throughout the tests defined in Section 3.3, so that injury measures may be calculated. The TWG recommends that sternum and rib deflection rate be calculated from the integration of the difference between rib/sternum and spine accelerations. Differentiation of displacement measures is an acceptable alternative. It should be noted that either method can produce spurious rates depending on the amount of noise in the original signals and the methods of integration and differentiation. Appendix B contains the recommended procedure for the calculation using the difference between rib/sternum and spine accelerations.

Dummy interactions with the side airbags should also be monitored by high-speed cameras (or equivalent video equipment) operating at a minimum speed of 1000 frames per second (3000 fps is recommended). The cameras should be positioned so that the field-of-view encompasses the test setup and includes the anticipated movement of the dummy during the test.

3.1.6.3.2 Electrical Grounding

The test dummy, vehicle, and all related instrumentation must be grounded. The test dummy shall be grounded with cables attached to the dummy's head, thorax, abdomen, and pelvis, which shall be connected to earth ground during all testing. Between tests, the dummy may be sprayed with an anti-static spray. These are both very important due to the high likelihood for electrostatic discharges as a result of the inflating airbag.

3.2 Dummy Injury Values

In establishing injury values for the various dummy measurements, the TWG wanted to address the risks of life threatening and/or permanent impairment injuries. The TWG also considered the possibility of limiting the risk of non-life-threatening injuries such as fractures to the upper extremities. Many members of the TWG expressed concerns that the level of scientific understanding is not the same for all of the potential OOP injury risks, and that inclusion of injury values with limited scientific support might result in delaying or discarding some side airbag systems that hold promise for reducing the risk of significant injuries in severe side impact crashes. Given the potential of side airbags to reduce the risk of serious injury to occupants, the TWG wanted to avoid this outcome.

As a result, the TWG defined two distinct classes of injury values, Injury Reference Values and Injury Research Values. Those values which the majority of the TWG believed have a strong scientific basis are classified as Injury Reference Values and are listed in Table 2. Those injury values currently with less scientific support or insufficient test experience to allow full confidence in their accuracy are classified as Injury Research Values and are listed in the Appendix in Table A1. The TWG recommends that future side airbag systems be designed according to the Injury Reference Values. The TWG also recommends considering the Injury Research Values when designing future side airbag systems, and accommodating them in those designs where feasible. However, the TWG agreed that a future side airbag designed according to the Injury Reference Values need not be discarded solely to accommodate an Injury Research Value.

It bears noting here that injury risk assessment based on anthropomorphic dummy responses is a reasonable method for assessing injury risks to humans and it is widely used in the automotive engineering community. It is, nevertheless, an imperfect science that occasionally yields invalid results for a variety of reasons. The TWG agreed that whenever a test result is obtained in excess of a reference value, and if there is reason to question the validity of this result, the manufacturer (or other testing entity) should use additional analyses to assess the validity of the result, just as would be done if an apparently invalid result were obtained in any sort of dynamic or static testing. If, however, the result is validated, then appropriate countermeasures should be pursued.

3.2.1 Dummy Injury Reference Values

The principal risks from deploying side airbags are expected to be injuries to the head, neck, and thorax. As discussed in the introduction, the risk of such injuries cannot be made zero with any inflatable restraint systems, but should be kept as small as feasible without sacrificing promising side airbag systems.

On a practical level, this corresponded to choosing injury values for the various dummy measures that would indicate approximately a 5 percent risk of AIS 4 or greater injury for the head and thorax or AIS 3 or greater for the neck. AIS stands for Abbreviated Injury Scale, which scores injuries in terms of their threat to life from 1, minor, to 6, currently unsurvivable; AIS 3 refers to serious injuries and AIS 4 to severe injuries. The lower AIS value chosen for the neck risk reflects the concern that these injuries have been the most common fatal injury in frontal airbag/OOP interactions and the fact the neck tension risk curve is very steep; in other words, neck injury risk can increase dramatically with only a small increase in tension force applied to the neck.

There was extensive discussion in the TWG about the meaning of the injury values. It is important to understand that the 5 percent risk level does not imply a 5 percent risk of injury to all occupants. Rather, it means that even in the rare event that a side airbag deploys ***and*** the occupant is as severely out of position as specified in these tests ***and*** if the dummy responses are below the specified injury values, the risk of serious or severe injury from the airbag is very low. Thus, the actual risks to occupants from the deploying side airbags that produce dummy responses that are at or below the proposed Injury Reference Values are exceedingly small.

The Injury Reference Values recommended by the TWG are summarized in Table 2. Details about their derivation are given in the following sections.

3.2.1.1 Head Injuries

The most widely accepted measure of head injury risk is the Head Injury Criterion (HIC). The recommended Injury Reference Values for HIC are the same as given in the Alliance (1999) recommendation to NHTSA for the OOP assessment of frontal airbags. For the average sized adult male, HIC of 700 corresponds approximately to a 5 percent risk of an AIS 4 or greater injury (Mertz et al., 1997). This value was scaled to give the Injury Reference Values for the other size occupants noted in Table 2. The scaling method used takes into account size and brain tissue strength variation with age as described by Mertz et al. (1997). For all dummy sizes, the time interval of the search for the maximum HIC value should not exceed 15 ms. The TWG agreed that the HIC values in Table 2 should be treated as Injury Reference Values since their basis is an injury risk curve.

Table 2 Dummy Injury Reference Values for Out-of-Position Testing of Side Airbags

	Dummy			
Body Region/Injury Measure	**Hybrid III 3-Year-Old Child**	**Hybrid III 6-Year-Old Child**	**Hybrid III Small Female**	**SID-IIs**
Head				
15 ms HIC	570	723	779	779
Upper Neck				
N_{ij}	1	1	1	1
Intercepts				
F_T (N)	2120	2800	3880	3880
F_C (N)	2120	2800	3880	3880
M_F (Nm)	68	93	155	155
M_E (Nm)	27	37	61	61
Tension (N)	1130	1490	2070	2070
Compression (N)	1380	1820	2520	2520
Thorax				
Deflection (mm)	36	40	—	34
Deflection rate (m/s)	8.0	8.5	—	8.2

3.2.1.2 Neck Injuries

Based on the frontal airbag OOP injury data, the TWG believes neck injuries will be the most critical OOP injury risk from side airbags. Experience with frontal airbags indicates that rupture of the connective tissues between the head and neck (occipital condyles – atlas region) is a primary cause of the fatalities observed among OOP children and adults. Accordingly, the TWG considered a number of neck injury indicators that can be measured at the upper neck load cells of the dummy necks.

One approach is to impose limits on the peak force and moment values that are measured by the upper neck load transducer located at the dummy's head/neck interface, occipital condyles. Limit values for these measurements were proposed by AAMA (1998) for OOP assessment of frontal airbags.

A second approach is to place limits on an index. The N_{ij} combines the effects of the forces and moments as was proposed by Prasad and Daniel (1984) for tension and extension moment. In its rulemaking activities regarding the assessment of OOP injury risk from frontal airbags, NHTSA proposed using the N_{ij} concept and extended the analysis to include the combinations of tension-flexion, compression-flexion, and compression-extension. In its comments on the NHTSA proposal, the Alliance (1999) developed injury risk curves for the combined effect of tension-extension moment based on its re-analysis of the animal injury/dummy response correlation data of Mertz et al. (1982) and Prasad and Daniel (1984). The Alliance recommended setting the limit for tension-extension moment at 2 percent risk of AIS ≥3 neck injury. The 5 percent risk line was not chosen as the limit line because 5 animals with AIS ≥3 neck injury were below the 5 percent limit line. There were no animals with AIS ≥3 neck injury below the proposed 2 percent limit line.

In addition, the Alliance was concerned that the N_{ij} concept allowed high axial forces when the bending moments were low. Because the most sensitive indicator of animal neck injury was peak neck tension (Mertz et al., 1997), the Alliance proposed to limit peak tension and peak compression. The limits for peak neck tension were set at 3 percent risk of AIS ≥3 neck injury. The limits for peak neck compression were set at the currently used Injury Assessment Reference Values (IARV). These peak force limits are the same as those proposed by AAMA (1998). NHTSA agreed with the Alliance proposal and incorporated these limits into FMVSS 208 for regulating the OOP performance of frontal airbags.

The TWG reviewed the two approaches and chose to use the combined index, $N_{ij}=1$ and the peak force limits, that were proposed by the Alliance and are now the upper neck limit requirement of FMVSS 208 for OOP regulation of frontal airbags. The intercept values of the N_{ij} limit lines and the peak tension and peak compression limit values are given in Table 2.

Some manufacturers and suppliers have expressed concern that extension and flexion bending moments measured on a dummy in a given test may not always reflect neck injury risk to the corresponding human. As noted above, injury risk assessment on anthropomorphic dummies is a reasonable surrogate for assessing injury risks to humans and it is widely used in the automotive engineering community. It is, nevertheless, an imperfect science that occasionally yields invalid results for a variety of reasons. For this reason, the TWG agreed in general that whenever a test result is obtained in excess of a reference value, and if there is reason to question the validity of this result, the manufacturer (or other testing entity) should use additional analyses to assess the validity of the result. If, however, the result is validated, then appropriate countermeasures should be pursued. Therefore, if a manufacturer or other testing entity obtains an extension or flexion bending moment in excess of the reference values and has reason to question the validity of that result, the response should be the same as the general guidance adopted by the TWG; namely, to use additional analyses to assess the validity of the result and, if the result is validated, to take appropriate actions.

3.2.1.3 Thoracic Injuries

The TWG recommends that chest compression and compression rate be treated as thoracic Injury Reference Values for OOP testing of side airbags. The Injury Reference Values for the 3-year-old and 6-year-old dummies are the same as those recommended by the AAMA (1998) for frontal airbag OOP testing and are based on research reported in Mertz et al. (1997). The peak compression Injury Reference Value for the SID-IIs was obtained by scaling the BioSID (50th percentile male side impact dummy) IARV (Mertz, 1993; NATO, 1996). The chest compression rate Injury Reference Value recommended for the SID-IIs is the same as the Hybrid III 5th percentile female sternal deflection rate associated with approximately a 5 percent risk of AIS 4+ thoracic injury in frontal impacts (AAMA, 1998; Mertz et al., 1997). The latter recommendation is based on animal tests that have shown that injury severities corresponding to thoracic compression rates are similar for frontal and side impacts (Mertz et al., 1982).

3.3 Test Procedures

Current systems of side airbags include at least one of three types of side airbags: those that deploy from the seat backs (seat-mounted), those that deploy from the door or rear quarter panel, typically just below the window sill (side-mounted), and those that deploy from the roof rail above the door (roof-mounted). The test positions to assess OOP injury risk for these different side airbag designs and/ or combinations of these designs are shown in Table 3. For each side airbag type, test positions have been suggested for each of the three test devices (3-year-old child, 6-year-old child, and small female/adolescent). The tests specified for the small female are relevant to driver and passenger seating positions fitted with side airbags, while those for the 3-year-old and 6-year-old child dummies are relevant only to passenger positions. If driver and passenger side airbag systems are mirror images of one another (front or rear seats), then specified tests need be conducted on only one side of the vehicle.

These static tests were developed to evaluate the inflation-injury risk of side airbags. The test dummy positions were chosen to block the deployment path of the deploying airbag and also to align the dummy's measurement systems to measure the effects of the resulting dummy-airbag interaction. Evaluations should be conducted with representative seats and door trim panels located in the vehicle design position. Systems that include more than one type of airbag should be tested with all side airbags deployed according to the deployment strategy of the vehicle.

In general, these test positions have been chosen to represent nominal "worst case" occupant positions, relative to the side airbags. They represent potentially dangerous rather than common positions occurring among the traveling public. Each manufacturer should evaluate whether that is the case for their particular system and modify the test positions as appropriate. The TWG recommends that manufacturers assess whether additional OOP tests of their systems are appropriate that vary the test positions somewhat from those specified in these recommendations. Test data discussed during the TWG's meetings show that even minor deviations in dummy positioning can greatly change the results of OOP testing. The positions recommended by the TWG provide a generalized point for evaluating side airbag OOP injury potential and each manufacturer must assess whether to vary from the specified procedures and whether additional testing is necessary for their system. Variations from the recommended positions should still be in a reasonable range that represents typical "worst case" conditions.

3.3.1 General Seat Preparation Procedure

The TWG emphasizes that these instructions apply to initial positioning efforts. Test engineers must determine if these instructions are consistent with their particular system and modify them as appropriate to meet the objectives of the individual test.

1. To aid dummy positioning, identify and mark the centerline of the seat back and seat cushion. For seat mounted airbag systems, draw a horizontal line on the seat corresponding to the top edge of the side airbag module.

2. Tests are to be conducted with the seat in the rearmost and lowest adjustment. The seat back should be adjusted to the manufacturer's design angle or to achieve a torso angle of 25 degrees as measured on the SAE J826 H-Point machine. If any of these adjustments is found to interfere with the inflation of the airbag or with the stated test objective, then the seat track position and or seat back angle may be adjusted the minimum amount necessary to avoid obstruction and fulfill the required test objective with the seat still in a nominally normal position for travel.

3. The head restraint is adjusted to its full-down position.

4. The upper safety belt anchor is adjusted to its highest position. The seat belt may be taped to the B-pillar to avoid entanglement with the side airbag.

5. All windows on the tested (inflation) side of the vehicle should be in the closed position, unless otherwise specified.

3.3.2 Suppression Systems

Some manufacturers may choose to limit the risk of OOP injury risk through suppression systems. Suppression systems may deactivate the side airbags when occupants are too near the deployment area or when the occupants are particularly vulnerable to injury (i.e., small children). If a suppression system would deactivate the airbag in one or more of the test scenarios described in Sections 3.3.3 and following, those test scenarios need not be performed. However, the TWG notes that the manufacturer should review whether that particular scenario should be replaced with another. For example, a side airbag might be suppressed for a 3-year-old child but still be potentially injurious to a 6-year-old child in a position similar to that which had been intended to be tested with the dummy representing the 3-year-old child. In this case a similar test set-up using the 6-year-old dummy should be evaluated.

Table 3 Recommended Test Procedures

	Section	Test Position	Body Region	Airbag Designs				
			Monitored and of interest	Seat back	Door/ quarter-panel (QP)	Roof-rail	Roof-rail & seat back	Roof-rail & door/ quarter-panel (QP)
Hybrid III 3-Year-Old	3.3.3.1	Forward facing on booster seat	Head, neck					
	3.3.3.2	Rearward facing	Head, neck, thorax					
	3.3.3.3	Lying on seat, Head on armrest – for seat mounted bag	Head, neck				*	
	3.3.3.4	Lying on seat – for seat mounted bag	Head, neck				*	
	3.3.4.1	Outboard facing	Head, neck, thorax					
	3.3.4.2	Inboard facing	Head, neck					
	3.3.4.3	Lying on seat, Head on armrest – for door/QP mounted bag	Head, neck					*
	3.3.4.4	Lying on seat – for door/QP mounted bag	Head, neck					*
Hybrid III 6-Year-Old	3.3.3.5	Forward facing on booster seat	Head, neck					
	3.3.5.1	Inboard facing on booster seat	Head, neck					
SID-IIs	3.3.3.6	Inboard facing – for seat mounted bag	Head, neck, thorax, abdomen, pelvis					
	3.3.3.7	Arm on armrest with instrumented arm	Arm, forearm				**	**
	3.3.4.5	Forward facing	Head, neck, thorax, abdomen, pelvis					
SID-IIs or Hybrid III 5th	3.3.5.2	Forward facing with raised seat	Head, neck					

	3.3.5.3	Inboard facing with raised seat	Head, neck					

*The chart shows for typical side airbag systems (in columns) the recommended tests (shaded cells in each column). Vehicles with more than one type of side airbag at a seating position should be evaluated using tests with all airbags deploying according to the deployment strategy of the vehicle. In tests identified by an asterisk (*), the evaluation can be based on thorax bag deployment alone, if the roof rail airbag would clearly not interact with the dummies. In tests of the arm injury potential (identified by **), the injury potential may be based on thorax bag deployment alone.

3.3.3 Tests for Seat-Mounted Airbags

3.3.3.1 Forward Facing Hybrid III 3-Year-Old Child Dummy on Booster Block (Passenger Positions with Seat-Mounted Airbags)

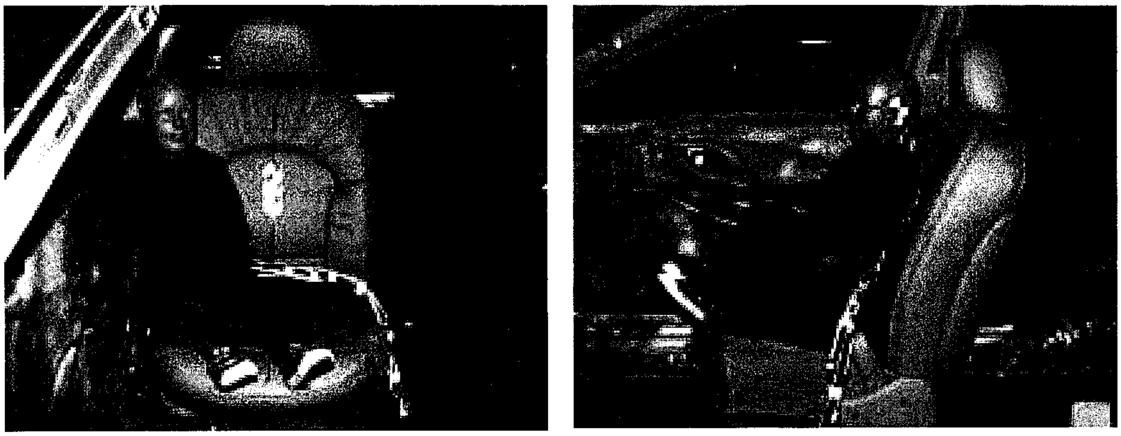

Figure 3.3.3.1.1 Forward Facing Hybrid III 3-year-old Child Dummy on Booster Block Leaning Against Door Trim Panel

Test Objective: To maximize the head/neck interaction by aligning the neck with the top of the side airbag module.

Test Procedure: The booster foam block dimensions are 300 mm deep by 450 mm wide by 75 mm thick. The foam has a density of 40-80 g/l. A typical foam material is expanded polypropylene (EPP).

Verify that the seat has been positioned to 3.3.1. Locate and mark on the seat cushion two points for heel placement at 20-50 mm from the leading edge of seat cushion and 75 mm from the centerline on each side. Center the foam block on seat cushion so that it contacts the seat back bolsters. Do not tape or otherwise attach the booster to the seat. The dummy positioned in the vehicle is shown in Figure 3.3.3.1.1. Specific positioning instructions are as follows:

1. The dummy shall be dressed in tight fitting cotton knit shirt and pants. The skullcap seam shall be taped with 4 mm wide electrical tape to prevent the airbag from getting caught in the seam. The dummy's head skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.
2. Seat the dummy on the outboard edge of foam block, aligning the upper spine with the deployment trajectory of the airbag, for example: the leading edge of the seat bolster or the airbag module. If the dummy upper spine can not be aligned due to interference with the pillar/ side trim adjust the seat track position accordingly.
3. Place the dummy's head in between the seat bolster and pillar/side trim to minimize the fore-aft clearance between the neck and the seatback. The head should remain in its neutral orientation and should not be forced into flexion or extension.
4. Place heels at heel placement points (previously marked on seat cushion).
5. With feet held in position, slide pelvis forward and parallel to the centerline of the vehicle, until the head/neck junction (i.e., lower edge of the skin at the base of the head) is aligned vertically with the top edge of the airbag module.
6. Reposition heels over placement points, if necessary.

7. With the vehicle door closed and the dummy's outboard arm raised (to clear armrest), slide the pelvis and upper torso outboard until pelvis or torso contact the door. The neck/torso junction may shift down no more than 20 mm during the process.
8. Place the outboard arm on the armrest.
9. Flex the inboard arm such that the upper arm contacts with the seatback and the fingertips contact the booster seat.
10. Deploy the side airbag(s) and record the following dummy channels: head acceleration (Ax, Ay, Az) and upper and lower neck forces and moments (Fx, Fy, Fz, Mx, My, Mz).

3.3.3.2 Rearward Facing Hybrid III 3-Year-Old Child Dummy (Passenger Positions with Seat-Mounted Airbags)

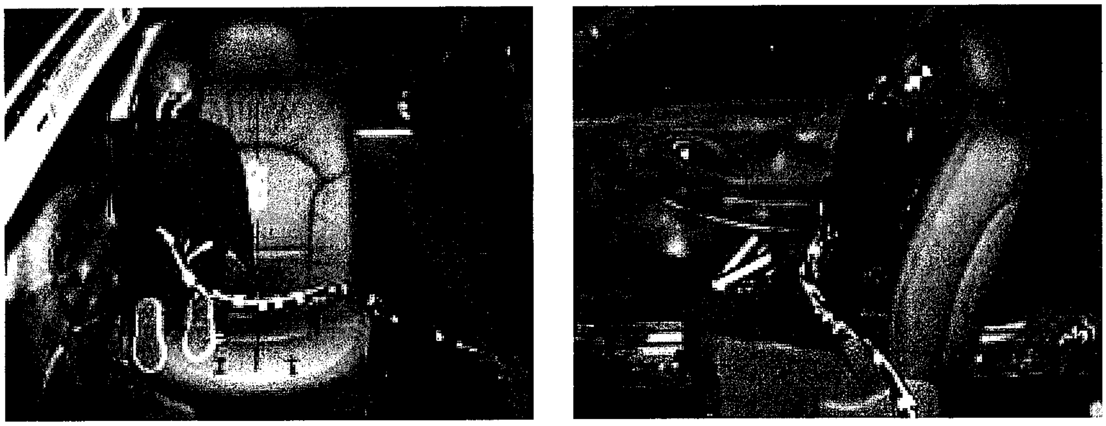

Figure 3.3.3.2.1 Rearward Facing Hybrid III 3-Year-Old Child Dummy Leaning Against Door

Test Objective: To maximize chest interaction by aligning the sternum with the top of the seat-mounted side airbag module.

Test Procedure: Verify that the seat has been positioned to 3.3.1. The dummy positioned in the vehicle is shown in Figure 3.3.3.2.1. Specific positioning instructions are as follows:

1. The dummy shall be dressed in tight fitting cotton knit shirt and pants. The skullcap seam shall be taped with 4 mm wide electrical tape to prevent the airbag from getting caught in the seam. The dummy's head skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.
2. Place the dummy along the outboard edge of the seat cushion, kneeling and facing rearward. Its feet may overhang the front edge of the seat cushion.
3. Align the vertical centerline of the dummy's sternum as close as possible with the leading edge of the seat back bolster or forward most contour line. The sternum should contact the seat. If the dummy sternum cannot be aligned due to interference with the pillar adjust the seat track position to ensure that the test objective is met.
4. Place the dummy's head in between the seat bolster and pillar/side trim to maximize contact between the sternum and the seatback. The head should remain in its neutral orientation and should not be forced into flexion or extension.
5. Position the outboard leg at the outboard edge of the seat cushion and parallel to the seat centerline. For seat cushions with bolsters, the outboard leg should be placed as close to the outboard edge of the seat cushion bolster as possible, while remaining on the cushion.
6. Slide the outboard knee and lower leg toward the seat bight (i.e., seat back/seat cushion junction) until the top edge of the upper rib is aligned horizontally with the top edge of the airbag module. The sternum should be in contact with the leading edge of the seat back bolster. In vehicles where the dummy fails to reach the top edge of the airbag module, place the outboard knee at the seat bight, at the outboard edge of the seat cushion.
7. Align the inboard leg such that it is parallel to the centerline of the seat cushion. Slide the inboard knee and lower leg towards the seat bight until a line drawn through both shoulder bolts is perpendicular to the vehicle centerline.
8. Rotate the inboard arm towards the seat back until the thumb contacts the seat back.
9. Rotate the outboard arm and hand to hang down as close to vertical as possible.

10. Deploy the side airbag(s) and record the following dummy channels: head acceleration (Ax, Ay, Az), upper and lower neck forces and moments (Fx, Fy, Fz, Mx, My, Mz), chest acceleration (Ax, Ay, Az), mid-sternum deflection (Dx), upper and lower sternum accelerations (Ax) and upper and lower spine accelerations (Ax, Ay, Az). Sternum accelerations are measured so that, in combination with spine acceleration, they can be used to calculate the compression rate indicated by the sternum deflection.

3.3.3.3 Hybrid III 3-Year-Old Child Dummy Lying on Seat with Head on Armrest (Passenger Positions with Seat-Mounted Airbags)

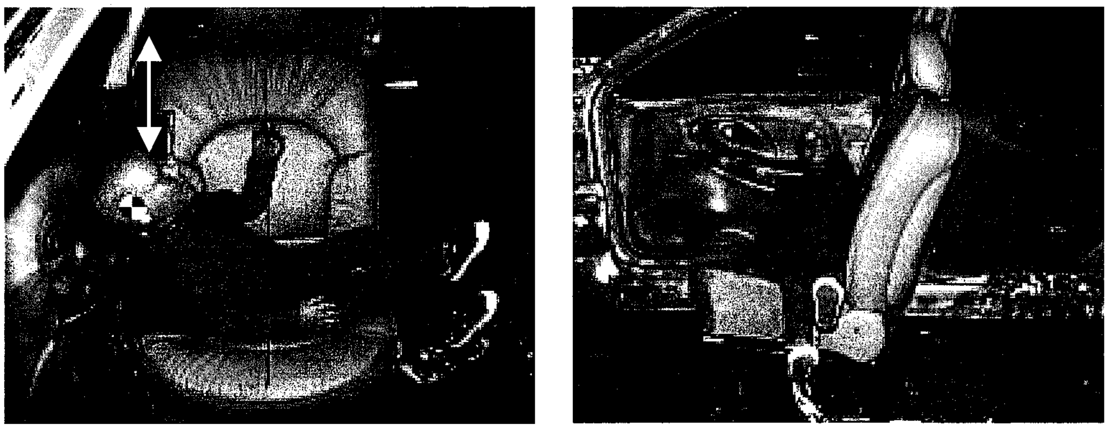

Figure 3.3.3.3.1 Hybrid III 3-Year-Old Child Dummy Lying Across Seat with Head on Door Trim Panel

Test Objective: To maximize the head interaction by aligning the head with the vertical centerline of the airbag module.

Test Procedure: A foam wedge, which is wide enough to support the dummy across the full width of its back (approximately 300 mm), is used to support the dummy's weight. The remaining dimensions of the wedge should be chosen to allow the dummy's head to touch the armrest without applying a significant downward force. The foam's density should be 40-80 g/l. A typical foam material is expanded polypropylene (EPP).

Verify that the seat has been positioned to 3.3.1. The dummy's position in the vehicle is shown in Figure 3.3.3.3.1. Specific positioning instructions are as follows:

1. The dummy shall be dressed in tight fitting cotton knit shirt and pants. The skullcap seam shall be taped with 4 mm wide electrical tape to prevent the airbag from getting caught in the seam. The dummy's head skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.
2. Place the dummy on the seat lying on its back with its arms at its sides so that its rearmost arm contacts the seatback.
3. Bending the dummy at the waist, with the back of the head touching the armrest slide it inboard/outboard until the CG of the head aligns with the vertical centerline of the module (armrest contact must be maintained). Support the dummy's back with a wedge-shaped foam block so that the head remains in a neutral position (i.e., head should not be forced into flexion or extension) and does not exert a significant downward force (< 5N) on the armrest.
4. Adjust the dummy's arm closest to the front edge of the seat so that it is parallel to the torso and rests on the foam block with the fingertips just touching the seat cushion.
5. Adjust the rearmost upper arm to an orientation 45 degrees forward of the torso centerline and the forearm on the same side to an orientation 90 degrees to the upper arm.
6. Deploy the side airbag(s) and record the following dummy channels: head acceleration (Ax, Ay, Az) and upper and lower neck forces and moments (Fx, Fy, Fz, Mx, My, Mz).

3.3.3.4 Hybrid III 3-Year-Old Child Dummy Lying on Seat (Passenger Positions with Seat-Mounted Airbags)

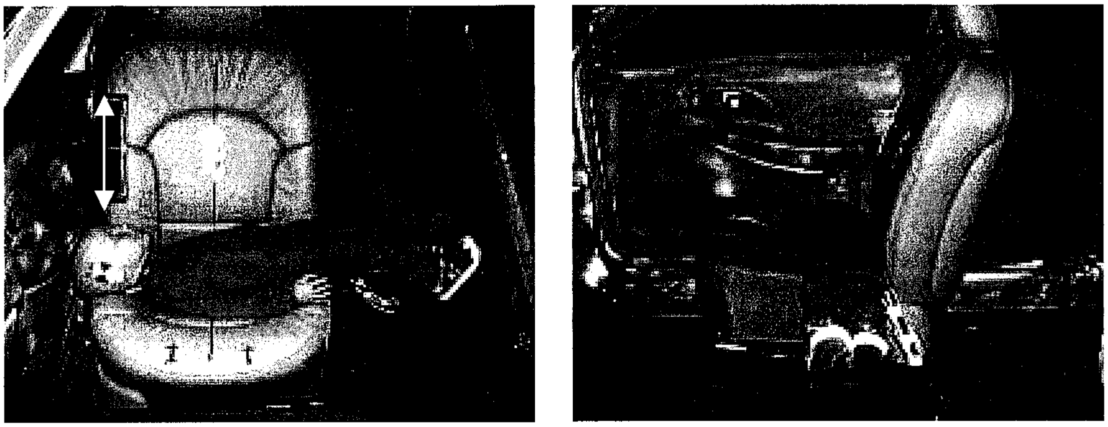

Figure 3.3.3.4.1 Hybrid III 3-Year-Old Child Dummy Lying Across Seat

Test Objective: To maximize the head and neck interaction with the seat-mounted airbag by aligning the head with the vertical centerline of the seat-mounted airbag module.

Test Procedure: Verify that the seat has been positioned to 3.3.1. The dummy positioned in the vehicle is shown in Figure 3.3.3.4.1. Specific positioning instructions are as follows:

1. The dummy shall be dressed in tight fitting cotton knit shirt and pants. The skullcap seam shall be taped with 4 mm wide electrical tape to prevent the airbag from getting caught in the seam. The dummy's head skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.
2. Place the dummy on the seat lying on its back with its arms at its sides so that its rearmost arm contacts the seatback.
3. Slide the dummy outboard until the CG of the head is aligned with the vertical centerline of the airbag module. Should the door/side trim interfere with the placement of the head then adjust the seat to ensure that the test objective is met.
4. If necessary, stabilize the dummy by placing a block of lightweight foam under the dummy's legs.
5. Deploy the side airbag(s) and record the following dummy channels: head acceleration (Ax, Ay, Az) and upper and lower neck forces and moments (Fx, Fy, Fz, Mx, My, Mz).

3.3.3.5 Forward Facing Hybrid III 6-Year-Old Child Dummy on Booster Block (Passenger Positions with Seat-Mounted Airbags)

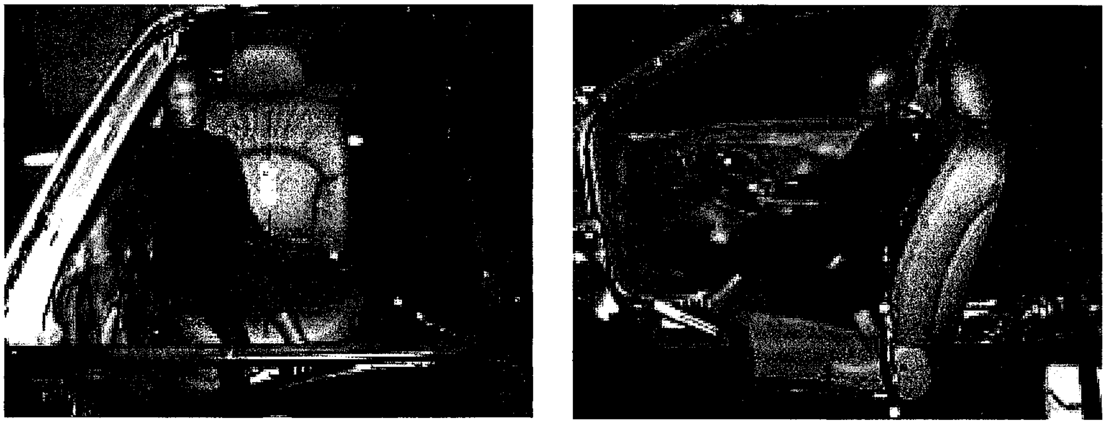

Figure 3.3.3.5.1 Forward Facing Hybrid III 6-Year-Old Child Dummy on Booster Block Leaning Against Door Trim Panel

Test Objective: To maximize the head/neck interaction by aligning the neck with the top of the side airbag module.

Test Procedure: The booster foam block dimensions are 300 mm deep by 450 mm wide by 75 mm thick. The foam has a density of 40-80 g/l. A typical foam material is expanded polypropylene (EPP). Verify that the seat has been positioned to 3.3.1. Locate and mark on the seat cushion two points for heel placement at 20-50 mm from the leading edge of seat cushion and 75 mm from the centerline on each side. Center the foam block on seat cushion so that it contacts the seat back bolsters. Do not tape or otherwise attach the booster to the seat.

Verify that the seat has been positioned to 3.3.1. The dummy positioned in the vehicle is shown in Figure 3.3.3.5.1. Specific positioning instructions are as follows:

1. The dummy shall be dressed in tight fitting cotton knit shirt and pants. The dummy's head skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.
2. Seat the dummy on the outboard edge of foam block, aligning the upper spine with the deployment trajectory of the airbag, for example: the leading edge of the seat bolster or the airbag module. If the dummy upper spine cannot be aligned due to interference with the pillar or side trim, adjust the seat track position to ensure that the test objective can be met.
3. Place the dummy's head in between the seat bolster and pillar/side trim to minimize the fore-aft clearance between the neck and the seatback. The head should remain in its neutral orientation and should not be forced into flexion or extension.
4. Align the legs such that they cross the heel placement points (previously marked on seat cushion). Note: The heels will probably be off the seat cushion.
5. Holding the feet in position, slide pelvis forward and parallel to the centerline of the vehicle, until the dummy's neck/torso junction (top of the spine box) is aligned vertically with the top edge of the airbag module.
6. Reposition the legs, so they cross the heel placement points, if necessary.
7. With the vehicle door closed and the dummy's outboard arm raised (to clear armrest), slide the pelvis and upper torso outboard until pelvis or torso contact the door. The neck/torso junction may shift down no more than 20 mm during the process.

8. Place the outboard arm on the armrest.
9. Flex the inboard arm such that the upper arm contacts the seat back and the fingertips contact the booster seat.
10. Deploy the side airbag(s) and record the following dummy channels: head acceleration (Ax, Ay, Az) and upper and lower neck forces and moments (Fx, Fy, Fz, Mx, My, Mz).

3.3.3.6 Inboard Facing SID-IIs (Driver and Passenger Positions with Seat-Mounted Airbags)

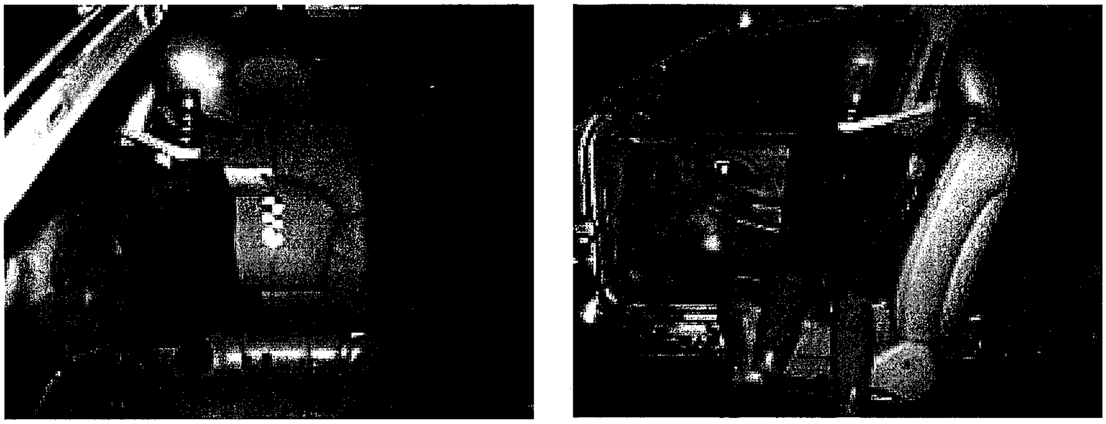

Figure 3.3.3.6.1 Inboard Facing SID-IIs Against Door

Test Objective: To maximize chest interactions by aligning the center of the top thoracic rib with the top edge of the airbag module.

Test Procedure: This test should be conducted for both driver and passenger airbags unless the same airbag design is used at both locations. The instrumentation of the dummy is aligned for driver-side-crash configuration when testing passenger side airbags and for passenger-side-crash configuration when testing driver side airbags. The dummy positioned in the vehicle is shown in Figure 3.3.3.6.1.

1. The dummy shall be dressed in tight fitting cotton knit shirt (optional) and pants. The skullcap seam shall be taped with 4 mm wide electrical tape to prevent the airbag from getting caught in the seam. The dummy's exposed skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.
2. Seat the dummy facing toward the center of the vehicle with its arm against the seatback.
3. Slide the dummy's pelvis outboard until the dummy contacts the door trim panel. A vertical plane through the centerline of the dummy's shoulder rib-stiffener and shoulder bolt should be parallel to the longitudinal plane of the vehicle.
4. Rotate the arm to a horizontal orientation.
5. Slide the dummy's pelvis forward/rearward with respect to the vehicle to lean the dummy rearward to align the center of the first thoracic rib with the top edge of the airbag module. The dummy's spine should align such that a vertical plane through the centerline of the dummy's shoulder rib stiffener and shoulder bolt should be parallel to the longitudinal plane of the vehicle. Masking tape (25 mm) wrapped around the dummy's neck bracket may be used to hold the dummy in place, if necessary.
6. Deploy the side airbag(s) and record the following dummy channels: head acceleration (Ax, Ay, Az), upper and lower neck forces and moments (Fx, Fy, Fz, Mx, My, Mz), upper and lower spine accelerations (Ax, Ay, Az), thoracic rib and abdominal rib lateral deflections (Dy), thoracic rib and abdominal lateral accelerations (Ay), opposite rib lateral accelerations (Ay), and pelvic acceleration (Ax, Ay, Az). Opposite rib lateral accelerations are used, in contribution with rib accelerations, to calculate thoracic or abdominal compression rates.

3.3.3.7 SID-IIs with Instrumented Arm on Armrest (Driver and Passenger Positions with Seat-Mounted or Door/Quarter Panel-Mounted Airbags)

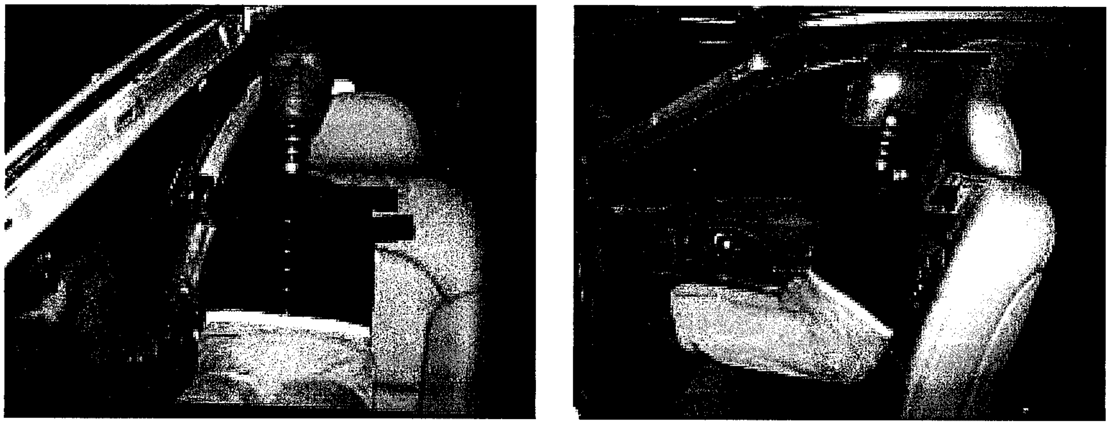

Figure 3.3.3.7.1 SID-IIs with instrumented arm on armrest

Test Objective: To maximize upper arm interaction.

Test Procedure: The dummy position is shown in Figure 3.3.3.7.1 with a foam cushion, which may be needed to meet the requirements of step 5 of the positioning sequence.

1. The dummy shall be dressed in tight fitting cotton knit shirt and pants. The dummy's exposed skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.
2. Adjust the seat to the mid-seat track position.
3. Seat the dummy near the outboard edge of the seat with its elbow on the armrest. Push the dummy outboard so there is no gap between the upper arm and the door trim panel above the armrest. The test dummy's pelvis may be propped up on a foam cushion and/or leaned to achieve this positioning requirement.
4. The upper arm is vertical and in line with the dummy's torso.
5. The lower arm of the test dummy should rest on the armrest without exerting significant downward force (< 5 N) on the armrest.
6. The hand should be extended to have a 45-degree orientation relative to the armrest surface.
7. Deploy the side airbag(s) and record the following dummy channels: ulna bending moments (Mx, My) and humerus bending moments (Mx, My).

3.3.4 Tests for Door/Quarter Panel-Mounted Airbags

3.3.4.1 Outboard Facing Hybrid III 3-Year-Old Child Dummy (Passenger Positions with Door/Quarter Panel-Mounted Airbags)

Figure 3.3.4.1.1 Outboard Facing Hybrid III 3-Year-Old Child Dummy Leaning Against Seat and Door Trim Panel

Test Objective: To maximize chest interaction by aligning the dummy's sternum with the vertical centerline of the side airbag module.

Test Procedure: The dummy positioned in the vehicle is shown in Figure 3.3.4.1.1.

1. The dummy shall be dressed in tight fitting cotton knit shirt and pants. The skullcap seam shall be taped with 4 mm wide electrical tape to prevent the airbag from getting caught in the seam. The dummy's head skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.
2. Place the dummy on the seat in a kneeling position facing out the side window with the rearmost knee in the seat bight. The dummy's arms and hands should be hanging against the sides of the torso
3. Holding the dummy in a vertically upright position, adjust the seat track position to align the vertical centerline of the sternum with the vertical centerline of the airbag module. **Geometric limits of the module may be defined through a blank deployment or obtained from the manufacturer.** The seat back, in conjunction with the arm position, may be used to stabilize the dummy.
4. Keeping the head in its neutral orientation (i.e., head should not be forced into flexion or extension), lean the dummy outboard until the chest contacts the airbag module in the door trim panel.
5. Move the dummy's knees inboard/outboard to align the top of the upper rib with the top edge of the airbag module as defined by the manufacturer. . It may be necessary to roll down the window to minimize the clearance between the chest and airbag module.
6. Deploy the side airbag(s) and record the following dummy channels: head acceleration (Ax, Ay, Az), upper and lower neck forces and moments (Fx, Fy, Fz, Mx, My, Mz), chest acceleration (Ax, Ay, Az), mid-sternum deflection (Dx), upper and lower sternum accelerations (Ax) and upper and lower spine accelerations (Ax, Ay, Az).

3.3.4.2 Inboard Facing Hybrid III 3-Year-Old Child Dummy (Passenger Positions with Door/Quarter Panel-Mounted Airbags)

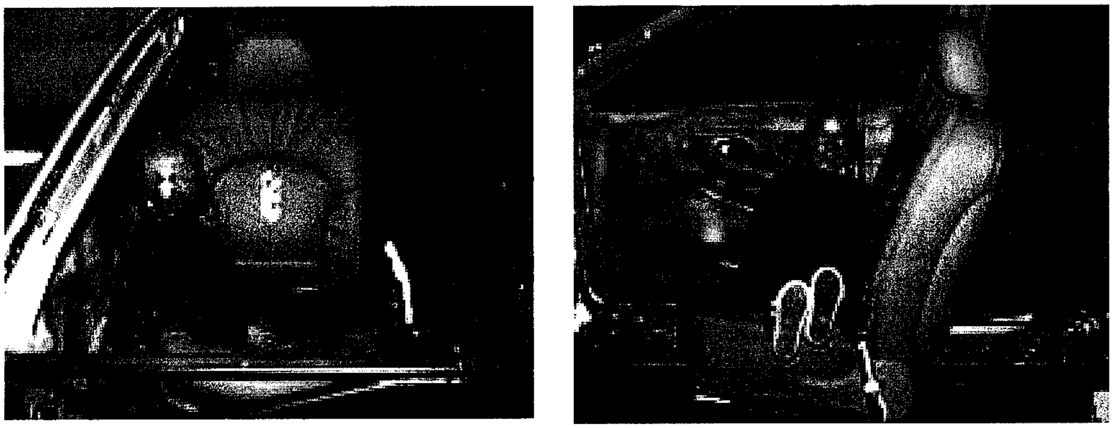

Figure 3.3.4.2.1 Inboard Facing Hybrid III 3-Year-Old Child Dummy Leaning Against Door or Window Glazing

Test Objective: To maximize head and neck interactions.

Test Procedure: The dummy positioned in the vehicle is shown in Figure 3.3.4.2.1.

1. This test should be conducted with the Hybrid III 3 year old. However, in vehicles where location of the airbag module precludes alignment of the head neck junction with the top edge of the airbag module, the use of Hybrid III 6 year old is recommended
2. The dummy shall be dressed in tight fitting cotton knit shirt and pants. The skullcap seam shall be taped with 4 mm wide electrical tape to prevent the airbag from getting caught in the seam. The dummy's head skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.
3. With the dummy's arms hanging along its sides, seat the dummy on the seat facing inboard with its legs extended.
4. Lean the dummy to the rear of the vehicle until its arm contacts the seat back.
5. Adjust the seat track position to align the dummy's vertical centerline of the spine box with the vertical centerline of the airbag module. **Geometric limits of the module may be defined through a blank deployment or obtained from the manufacturer.**
6. Keeping the head in its neutral orientation (i.e., head should not be forced into flexion or extension), lean the dummy back until its shoulders or head contact the door trim panel.
7. While maintaining the alignment of the dummy, slide the pelvis inboard/outboard until the head/neck junction (i.e., lower edge of the skin at the base of the head) is as aligned with the top edge of the airbag module. Seat height adjustments, if available, may be used to assist in final placement of the dummy. If this is not sufficient see step 1.
8. The dummy's upper arms are parallel with its torso and lower arms are bent forward so the fingertips just touch the seat cushion.
9. Deploy the side airbag(s) and record the following dummy channels: head acceleration (Ax, Ay, Az) and upper and lower neck forces and moments (Fx, Fy, Fz, Mx, My, Mz).

3.3.4.3 Hybrid III 3-Year-Old Child Dummy Lying on Seat with Head on Armrest (Passenger Positions with Door/Quarter Panel-Mounted Airbags)

Figure 3.3.4.3.1 Hybrid III 3-Year-Old Child Dummy Lying Across Seat with Head on Door Trim Panel

Test Objective: To maximize the head and neck interaction by aligning the head with the center of the airbag module.

Test Procedure: A foam wedge, which is wide enough to support the dummy across the full width of its back (approximately 300 mm), is used to support the dummy's weight. The remaining dimensions of the wedge should be chosen to allow the dummy's head to touch the armrest without applying a significant downward force. The foam's density should be 40-80 g/l. A typical foam material is expanded polypropylene (EPP). The dummy's position in the vehicle is shown in Figure 3.3.4.3.1. Specific positioning instructions are as follows:

1. The dummy shall be dressed in tight fitting cotton knit shirt and pants. The skullcap seam shall be taped with 4 mm wide electrical tape to prevent the airbag from getting caught in the seam. The dummy's head skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.
2. Place the dummy on the seat lying on its back with its arms at its sides so that its rearmost arm contacts the seatback.
3. Adjust the seat track position to align the horizontal centerline of the dummy's head as close as possible to the vertical centerline of the airbag module. **Geometric limits of the module may be defined through a blank deployment or obtained from the manufacturer.**
3. Slide the dummy outboard until the head just contacts the module (armrest contact must be maintained). Support the dummy's back with a wedge-shaped foam block so that the head remains in a neutral position (i.e., head should not be forced into flexion or extension) and does not exert a significant downward force (< 5N) on the armrest.
4. Adjust the dummy's arm closest to the front edge of the seat so that it is parallel to the torso and rests on the foam block with the fingertips just touching the seat cushion.
5. Adjust the rearmost upper arm to an orientation 45 degrees forward of the torso centerline and the forearm on the same side to an orientation 90 degrees to the upper arm.
6. Deploy the side airbag(s) and record the following dummy channels: head acceleration (Ax, Ay, Az) and upper and lower neck forces and moments (Fx, Fy, Fz, Mx, My, Mz).

3.3.4.4 Hybrid III 3-Year-Old Child Dummy Lying on Seat (Passenger Positions with Door/Quarter Panel-Mounted Airbags)

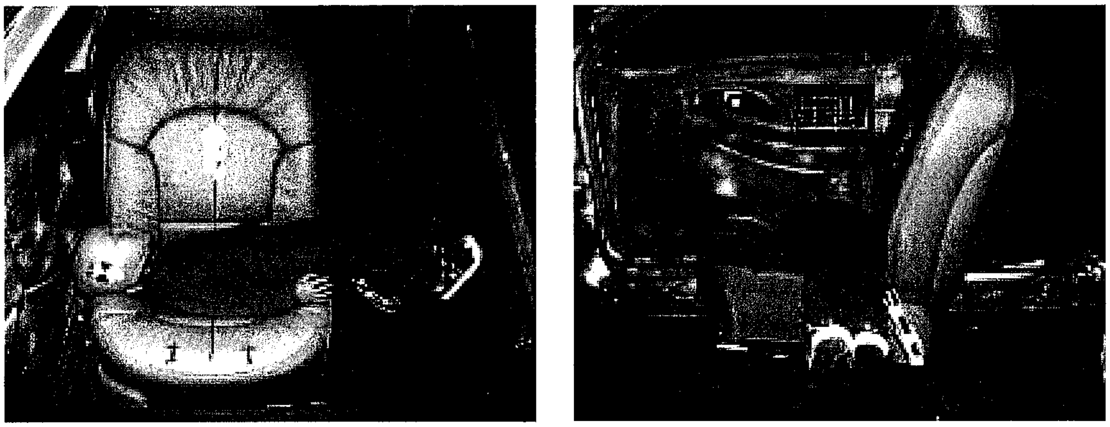

Figure 3.3.4.4.1 Hybrid III 3-Year-Old Child Dummy Lying Across Seat

Test Objective: To maximize the head and neck interaction by aligning the head with the vertical centerline of the door/quarter panel-mounted airbag module.

Test Procedure: The dummy positioned in the vehicle is shown in Figure 3.3.4.4.1. Specific positioning instructions are as follows:

1. The dummy shall be dressed in tight fitting cotton knit shirt and pants. The skullcap seam shall be taped with 4 mm wide electrical tape to prevent the airbag from getting caught in the seam. The dummy's head skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.
2. Place the dummy on the seat lying on its back with its arms at its sides so that its rearmost arm contacts the seatback.
4. Adjust the seat track position to align the center of the dummy's head as close as possible to the vertical centerline of the airbag module. **Geometric limits of the module may be defined through a blank deployment or obtained from the manufacturer.**
3. Adjust seat height, if adjustable, to align the instrumentation plane of the dummy's head as near as possible to the horizontal center of the airbag module.
4. Slide the dummy outboard until the head just contacts the airbag module.
5. If necessary, stabilize the dummy by placing a block of lightweight foam under the dummy's legs.
6. Deploy the side airbag(s) and record the following dummy channels: head acceleration (Ax, Ay, Az) and upper and lower neck forces and moments (Fx, Fy, Fz, Mx, My, Mz).

3.3.4.5 Forward Facing SID-IIs (Driver and Passenger Positions with Door/Quarter Panel-Mounted Airbags)

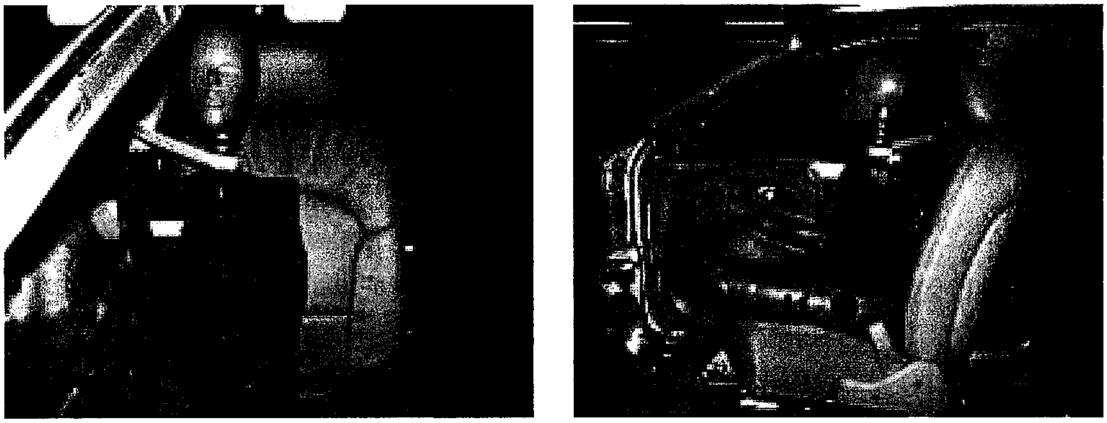

Figure 3.3.4.5.1 Forward Facing SID-IIs Against Door

Test Objective: To maximize the head, neck and chest interactions by aligning the chest with the top edge of the airbag module.

Test Procedure: The dummy positioned in the vehicle is shown in Figure 3.3.4.5.1.

1. The dummy shall be dressed in tight fitting cotton knit shirt and pants. The dummy's head skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.
2. Place the dummy seated upright in the center of the seat.
3. The outboard arm should be rotated horizontal in the forward direction with respect to the dummy (i.e. to clear armrest).
4. Adjust the seat track position to align the centerline of the lateral thorax with the vertical centerline of the module.
5. Slide the dummy outboard, without leaning it sideways or twisting the torso, until the dummy contacts the door trim panel. A vertical plane through the centerline of the dummy's rib-stiffener and shoulder bolt should be perpendicular to the centerline of the vehicle.
6. Adjust the seat height, if possible, to align the center of the first thoracic rib with the top edge of the airbag module. Masking tape (25 mm) wrapped around the dummy's neck bracket may be used to hold the dummy in the vertical orientation, if necessary.
7. Repeat step 6, if necessary.
8. Deploy the side airbag(s) and record the following dummy channels: head acceleration (Ax, Ay, Az), upper and lower neck forces and moments (Fx, Fy, Fz, Mx, My, Mz), upper and lower spine accelerations (Ax, Ay, Az), thoracic rib and abdominal rib lateral deflections (Dy), thoracic and abdominal rib lateral accelerations (Ay), opposite rib lateral accelerations (Ay), pelvic acceleration (Ax, Ay, Az), and pelvic forces (pubic and iliac, Fy). Opposite rib lateral accelerations are used in conjunction with rib accelerations to calculate thoracic and abdominal compression rates.

3.3.5 Tests for Roof-Rail-Mounted Airbags

3.3.5.1 Inboard Facing Hybrid III 6-Year-Old Child Dummy on Booster Block (Passenger Positions with Roof-Rail-Mounted Airbags)

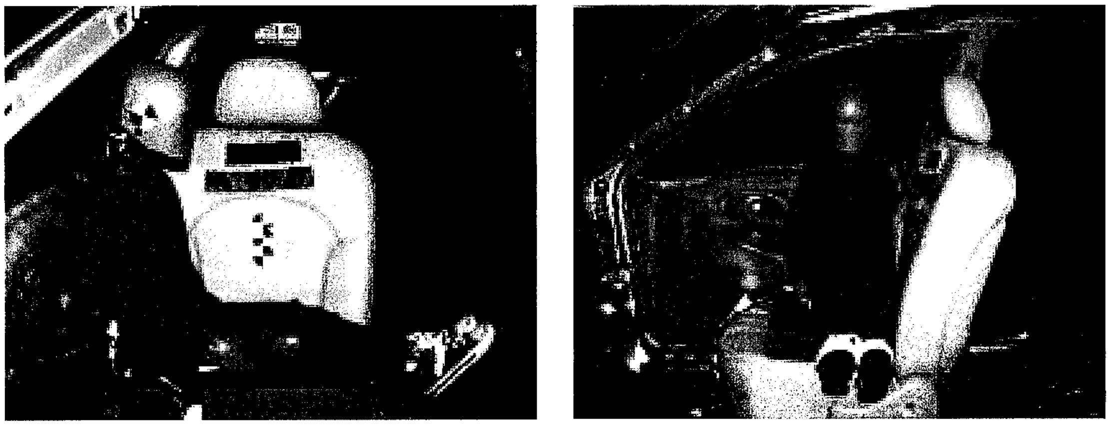

Figure 3.3.5.1.1 Inboard Facing Hybrid III 6-Year-Old Child Dummy on Booster Block

Test Objective: To maximize the head/neck interaction by positioning the head in the path of the deploying airbag.

Test Procedure: For this test the seat is adjusted to its highest position. The booster foam block dimensions are 300 mm deep by 450 mm wide by 75 mm thick. The foam has a density of 40-80 g/l. A typical foam material is expanded polypropylene (EPP). Center the foam block on seat cushion so that it contacts the seat back bolsters. Do not tape or otherwise attach the booster to the seat. The dummy positioned in the vehicle is shown in Figure 3.3.5.1.1.

1. The dummy shall be dressed in tight fitting cotton knit shirt and pants. The skullcap seam shall be taped with 4mm electrical tape to prevent the airbag from getting caught in the seam. The dummy's head skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.
2. Place the dummy with its arms hanging at its sides on the foam block facing inboard with its legs extended.
3. Adjust the seat track position forward to minimize the vertical distance between the dummy's head and the roof-rail module and to maximize the cushion to head interaction.
4. Keeping the head in its neutral orientation (i.e., head should not be forced into flexion or extension), slide the dummy's pelvis outboard until the dummy's back contacts the door trim panel or armrest and the center of gravity of the head is centered in the deployment trajectory of the airbag. It may be necessary to tilt the dummy outboard in order to achieve proper alignment of the head. A vertical plane through the centerline of the dummy's shoulder bolts should be parallel to the vehicle centerline.
5. Bend the dummy's arms at the elbow until the fingers just touch the booster seat.
6. Deploy the side airbag(s) and record the following dummy channels: head acceleration (Ax, Ay, Az) and upper and lower neck forces and moments (Fx, Fy, Fz, Mx, My, Mz).

3.3.5.2 Forward Facing SID-IIs on Raised Seat (Driver and Passenger Positions with Roof-Rail-Mounted Airbags)

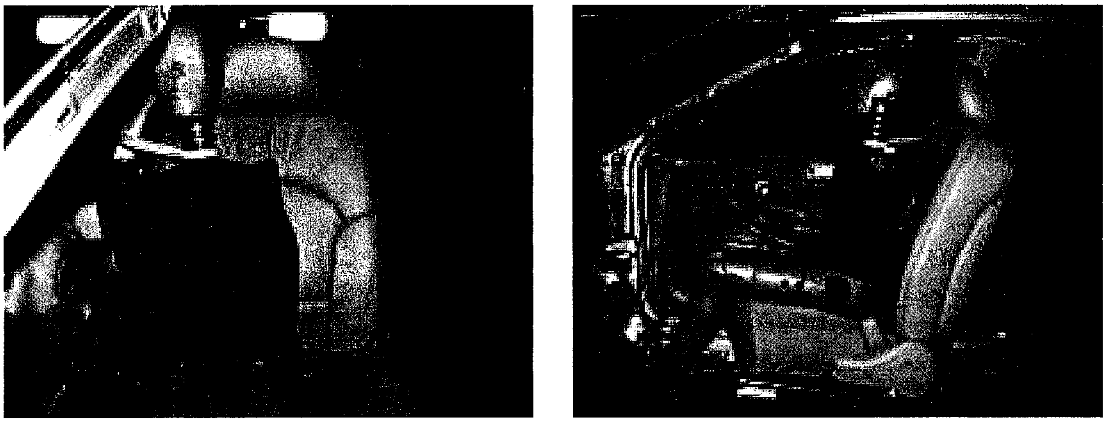

Figure 3.3.5.2.1 Forward Facing SID-IIs Aligned for Test of Roof-Rail-Mounted Airbag

Test Objective: To maximize the head/neck interaction by positioning the head in the path of the deploying airbag.

Test Procedure: For this test the seat is adjusted to its highest position. The dummy positioned in the vehicle is shown in Figure 3.3.5.2.1

1. The dummy shall be dressed in tight fitting cotton knit shirt and pants. The dummy's head skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.
2. Place the dummy seated upright in the center of the seat.
3. The outboard arm should be rotated horizontal in the forward direction with respect to the dummy (i.e. to clear armrest).
4. Adjust the seat track position forward to minimize the vertical distance between the dummy's head and the roof-rail module and to maximize the cushion to head interaction.
5. Move the dummy outboard until the dummy contacts the door trim panel. The dummy may be leaned outboard to ensure that the deployment trajectory of the airbag will intersect with the centerline of the top of the head (pelvis may need to be adjusted inboard to achieve this position). Masking tape (25mm) wrapped around the dummy's neck bracket may be used to hold the dummy in the test orientation if necessary.
6. Deploy the side airbag(s) and record the following dummy channels: head acceleration (Ax, Ay, Az) and upper and lower neck forces and moments (Fx, Fy, Fz, Mx, My, Mz).
7. If driver and right-front passenger side airbag systems are identical, then only one position need be tested.

3.3.5.3 Inboard Facing SID-IIs on Raised Seat (Driver and Passenger Positions with Roof-Rail-Mounted Airbags)

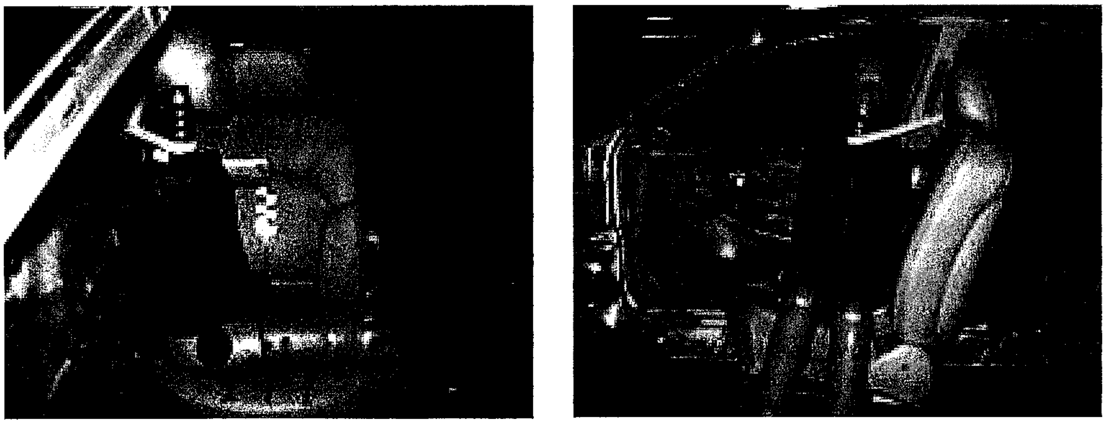

Figure 3.3.5.3.1 Inboard Facing SID-IIs Aligned for Test of Roof-Rail-Mounted Airbag

Test Objective: To maximize the head/neck interaction by positioning the head in the path of the deploying airbag.

Test Procedure: For this test the seat is adjusted to its highest position. The dummy positioned in the vehicle is shown in Figure 3.3.5.3.1.

1. The dummy shall be dressed in tight fitting cotton knit shirt and pants. The skullcap seam shall be taped with 4 mm wide electrical tape to prevent the airbag from getting caught in the seam. The dummy's head skin shall be cleaned with alcohol and dusted with baby powder to achieve acceptable frictional characteristics.
2. Seat the dummy facing toward the center of the vehicle with its arm against the seatback.
3. The arm should be rotated horizontal in the forward direction with respect to the dummy.
4. Adjust the seat track position forward to minimize the vertical distance between the dummy's head and the roof-rail module and to maximize the cushion to head interaction.
5. Keeping the head in its neutral orientation (i.e. head should not be forced into flexion or extension), slide the dummy's pelvis outboard until the dummy's back contacts the door trim panel or armrest and the CG of the head is centered in the deployment trajectory of the airbag. It may be necessary to tilt the dummy outboard in order to achieve proper alignment of the head. A vertical plane through the centerline of the dummy's rib-stiffener and shoulder bolt should be parallel to the centerline of the vehicle. Masking tape (25mm) wrapped around the dummy's neck bracket may be used to hold the dummy in place if necessary.
6. Deploy the side airbag(s) and record the following dummy channels: head acceleration (Ax, Ay, Az), upper neck forces and moments (Fx, Fy, Fz, Mx, My, Mz) and lower neck forces and moments (Fx, Fy, Fz, Mx, My, Mz).
7. If driver and right-front passenger side airbag systems are identical, then only one position need be tested.

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Appendix A – Dummy Injury Research Values

As stated in the body of the report, the Injury Research Values represent important indicators of potential injury, but the engineering and scientific community does not yet have a sufficient biomechanical and other scientific basis to know that the published values correctly predict injury risks from deploying side airbags. In some cases, additional biomechanical research is needed to understand adequately the mechanisms that cause injury to particular body regions (e.g., the lower neck, abdominal and pelvic injuries) and the mechanisms of injury associated with side airbags (e.g., whether spinal acceleration is a predictor of side airbag injury risk). In other cases, additional work is needed to correlate measurable dummy responses to injury mechanisms that have established risk curves. Still more work is needed to provide adequate test experience with some of these measures to gain confidence in their accuracy.

As this research progresses, the engineering and scientific community will have a basis on which to establish Injury Reference Values for some or all of these indicators. The TWG recommends that it be reconvened periodically to review the continuing scientific status of its recommended procedures, including these Injury Research Values. It should be emphasized that a larger body of scientific data is needed to confirm what the correct Injury Reference Value should be, not simply to verify or validate the value published here as an Injury Research Value. When a given injury measure is sufficiently well understood to become an Injury Reference Value, it may be the same value published here as a research value, or it may be a higher or lower value.

At this time, the TWG recommends that manufacturers and suppliers consider the Injury Research Values when designing future side airbag systems and accommodate them in those designs where feasible. However, the TWG agreed that a future side airbag designed according to the Injury Reference Values need not be discarded solely to accommodate an Injury Research Value.

Table A1, below, is a list of the dummy responses that are recommended as Injury Research Values. The following sections explain how the Injury Research Values were derived and the level of scientific understanding associated with the published values.

A.1 Neck Injuries

A.1.1 Upper Neck Load Cell

Reported test experience with the recommended procedures led the TWG to recommend that lateral bending and twisting of the neck should be monitored. There was relatively little experience measuring these neck moments on the dummy, and the Injury Research Values were only recently proposed based on the judgment of biomechanics experts in the TWG. The twist moment values were set at the same level as the extension values, the neck's weakest bending mode, because the cervical vertebrae can easily be separated by twisting of the head. The lateral bending moment values were set midway between the extension and flexion values because the amount of muscle and connective tissue that resists lateral bending is greater than the amount that resists extension bending, but not greater than the amount that resists flexion, the neck's strongest bending mode.

Table A1 Dummy Injury Research Values for Out-of-Position Testing of Side Airbags

	Dummy			
Body Region/Injury Measure	**Hybrid III 3-Year-Old Child**	**Hybrid III 6-Year-Old Child**	**Hybrid III Small Female**	**SID-IIs**
Upper Neck				
Lateral moment (Nm)	30	42	67	67
Twist moment (Nm)	17	24	39	39
Lower Neck				
Flexion moment (Nm)	83	119	190	190
Extension moment (Nm)	34	48	77	77
Lateral moment (Nm)	60	84	134	134
Twist moment (Nm)	17	24	39	39
Tension (N)	1130	1490	2070	2070
Compression (N)	1380	1820	2520	2520
Thorax				
Spine acceleration (max g, 3 ms)	55	60	—	73
Abdomen				
Deflection (mm)	—	—	—	32
Deflection rate (m/s)	—	—	—	8.2
Pelvis				
Pubic symphysis load (N)	—	—	—	4000
Iliac load (N)	—	—	—	4000
Arm				
Resultant bending moment, ulna (Nm)	—	—	—	44
Resultant bending moment, humerus (Nm)	—	—	—	130

A.1.2 Lower Neck Load Cell

Recent research suggests that the upper neck load cell measurements may not reveal neck injury risk when the airbag deploys into the back of a person. This could be a problem for assessing side airbag OOP neck injury risk because, unlike frontal airbags, occupant positions may be expected to expose occupants' backs to deploying side airbags. For that reason, the TWG is recommending that injury indicators measured at the lower neck load cell be monitored as Injury Research Values. The TWG's Injury Research Values for the lower neck measurements are based on research reported by Prasad, Kim, and Weerappuli (1997), who recommended an IARV of 154 Nm for the Hybrid III 50th percentile male dummy's lower neck extension bending moment. This recommended IARV corresponds to the lowest force at which injury was observed in cadaver spines. This should provide a very low risk of AIS 3+ injury. To provide neck extension bending moment research values for the dummies listed in Table A1, this IARV was scaled using procedures as given in Mertz et al. (1997). The recommended Injury Research Values for lower neck flexion and lateral bending moment limits were calculated from the corresponding values for the upper neck, assuming that the ratios of upper to lower bending moments would have the same value as the ratio of the upper to lower extension moments.

The recommended Injury Research Values for lower neck tension and compression forces are the same as for the upper neck, as is the Injury Research Value for lower neck twist moment. There is no anatomical reason known to the TWG at this time to believe that these forces pose different risks when measured at the upper or lower neck.

A.2 Thoracic Injuries

The TWG recommends that spine acceleration be included as an Injury Research Value in OOP testing of side airbags. The TWG expressed doubt that spine acceleration could indicate thoracic injury likelihood in the absence of excessive compression or compression rate (which are included as Injury Reference Values, Table 2). However, it was noted that this measure is the standard measure included in NHTSA evaluations of thoracic injury. The Injury Research Values for spine acceleration included in Table A1 are scaled from the value specified by Federal Motor Vehicle Safety Standard 208 for the 50th percentile adult male (a maximum of 60 g maintained for 3 ms).

A.3 Abdominal and Pelvic Injuries

Among the dummies recommended for OOP testing of side airbags, only the SID-IIs is instrumented to measure abdominal and pelvic responses to input. The TWG recommends monitoring dummy response for both abdominal compression and compression rate for the SID-IIs. The abdominal compression Injury Research Value is scaled from an IARV of 39 mm for the 50th percentile male dummy, BioSID (NATO, 1996). In the absence of any IARV for abdominal compression rate, the TWG's biomechanics experts recommended that the Injury Reference Value for thoracic compression rate be used as an Injury Research Value for abdominal compression rate. Injury Research Values are also recommended for forces on the pubic symphysis and the iliac crest by scaling from IARVs which have been suggested for the BioSID. These IARVs reflect the force levels at which fractures of these structures are expected. It should be noted that no side airbags are expected to approach these force levels for the SID-IIs, but the TWG nevertheless concluded that these variables should be monitored.

A.4 Arm Injuries

The TWG recommends Injury Research Values for fracture of both the ulna and humerus of the SID-IIs. The Injury Research Value recommended for bending moment of the ulna was derived from the work of Begeman et al. (1999) and Pintar et al. (1998). Begeman et al. reported that the ulnae (forearms) in a sample of adult cadavers failed at an average moment of 89 Nm, while Pintar et al. found an average failure moment of 94 Nm. The TWG agreed that these data supported an IARV of 90 Nm for the 50th percentile male. This limit was scaled down to 44 Nm for members of the population sized similarly to the SID-IIs.

The 130 Nm Injury Research Value for the humerus (upper arm) was recommended by Kirkish et al (1996) for the SID-IIs with instrumented arm.

Appendix B – Chest Deflection (Compression) Rate: Calculation by Integration of Acceleration Differences

Chest deflection or compression rate can be determined in either of two ways:

- By differentiating the deflection data from the sternum (frontal dummies, fore-aft compression) or ribs (SID-IIs, lateral compression)
- By integrating the difference in accelerations between the sternum (frontal dummies) or ribs (SID-IIs) and the spine

Theoretically, these methods should give the same solution, but it has been observed that the potentiometer used to measure deflection can lag behind actual deflections under some conditions or contain "noise." Both of these problems can result in error in the differentiated compression rate. The TWG has agreed that either method may be used to evaluate chest compression rate, but recommends that if the differentiation method is used, the result be checked by also conducting the integration method. Following is the recommended procedure for calculating chest deflection (compression) rates by the integration method.

1. Calculate chest deflection (compression) rate as a function of time:

   This method uses the acceleration data from the spine plus the ribs or sternum and the potentiometer deflection data from the ribs or sternum.

   a. Assure that all data are compiled according to SAE sign conventions.

   b. Filter acceleration data at SAE CFC 1000.

   c. Filter chest or rib potentiometer data at SAE CFC 600.

   d. Find Time Zero (T_0) – the time of first contact of the airbag with dummy.

      i. Locate the time ($T_{5\%}$) when the sternal or rib acceleration attains a magnitude that is approximately 5 percent of its peak acceleration due to impact by the airbag.

      ii. Examine the sternal or rib acceleration time trace backward from $T_{5\%}$ to the time where the slope of the acceleration curve changes sign – this time is T_0 for all measures.

   e. Find the time of maximum compression, T_{maxD}:

      From the sternum or rib potentiometer data, identify the time of maximum deflection. Call this time T_{maxD}. Note that the deflection data could contain more than one peak – choose the peak with the maximum deflection.

   f. For each time step, subtract the x-component of the spine acceleration from the coaxial x-component of the sternum acceleration (frontal dummies) or the y-component of the spine acceleration from the coaxial y-component of the rib acceleration (SID-IIs). Call the resulting distribution of acceleration differences over time, AD(t). **If your accelerations are measured in Gs, then change the units to m/s^2 by multiplying by 9.8.**

   g. Set AD(t) = 0 when $t \le T_0$. Call the new function, $AD_0(t)$.

   h. Define N as the number of time increments between T_{maxD} and T_0. Then $\Delta t = (T_{maxD} - T_0)/N$ is the time increment in seconds. Integrate the differences in accelerations, $AD_0(t)$, to obtain the compression rate, CR(t), in m/s as a function of time in seconds. That is,

$CR(t_m) = \Sigma\ ((AD_0(t_i) + AD_0(t_{i-1}))/2)\Delta t$, where i = 1,2,...m; m is any integer between 1 and N; and $CR(t_0) = 0$

Note that when m = N, $CR(t_N)$ is the value of the compression rate at T_{maxD}.

2. Check for accuracy of compression rate data:

   Note that if the compression rate data are accurate, then CR(t) should be close to zero at $t = t_{maxD}$.

   a. From the integration data in item 1h above, find the compression rate that corresponds to T_{maxD}. Call this compression rate, "Value B."
   b. If the absolute value of Value B is ≤ 0.1 m/s, then the compression rate data of Item 1h are acceptable, and maximum compression rate, $CR(t)_{max}$, is the maximum value of CR(t). If the absolute value of Value B is > 0.1 m/s, then the error in the integration process is too large. Proceed with Items 3-4 to improve the accuracy of the calculation of compression rate.
3. Compute a correction factor (Value C):
   a. Calculate the time interval between airbag first contact and peak deflection. Call this interval, "Value A." That is, Value A = $T_{maxD} - T_0$.
   b. Divide Value B by Value A to determine Value C. Note that Value C has units of m/s^2 and has the same sign as Value B.
4. Apply the correction factor to the sternum or rib accelerations:
   a. Subtract Value C from the filtered sternum or rib acceleration data at each time step, starting with T_0 and ending with T_{maxD}. **Note that if the acceleration data are in Gs, then divide Value C by 9.8 to convert it to Gs before applying the correction.** Remember that the correction procedure assumes that SAE sign conventions have been followed in compiling the acceleration data.
   b. Return to item 1f and repeat the calculation of deflection (compression) rate as a function of time and the accuracy check.
5. The accuracy criterion in item 2b will be met after one iteration if the correction procedure to the data has been done correctly.

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QUESTION 11

Specifications (need to make confidential)

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QUESTION 11

Specifications (need to make confidential)

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QUESTION 11

Specifications (need to make confidential)

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QUESTION 11

Specifications (need to make confidential)

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QUESTION 11

Specifications (need to make confidential)

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QUESTION 11

Specifications (need to make confidential)

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QUESTION 11

Specifications (need to make confidential)

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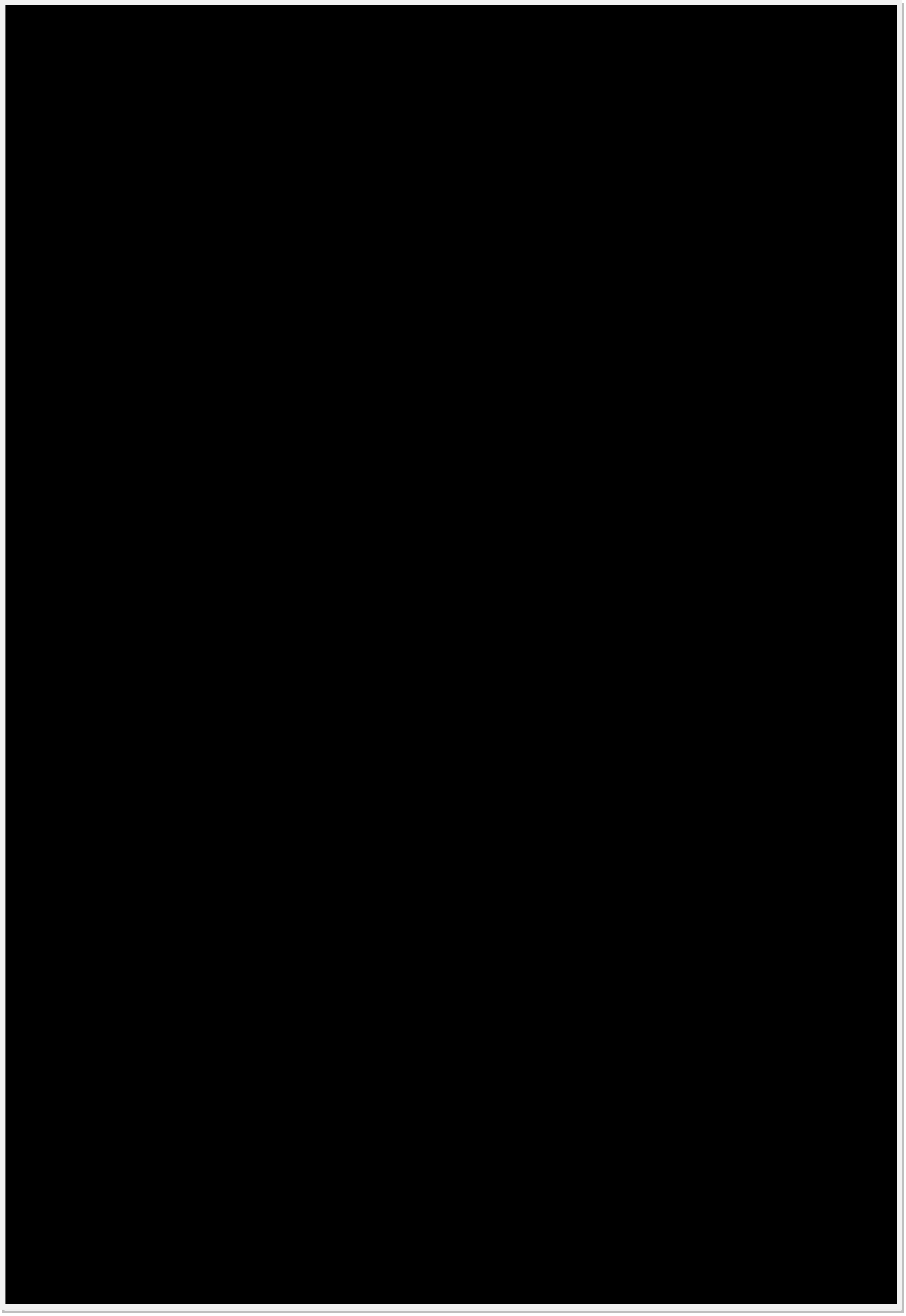

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QUESTION 11

Specifications (need to make confidential)

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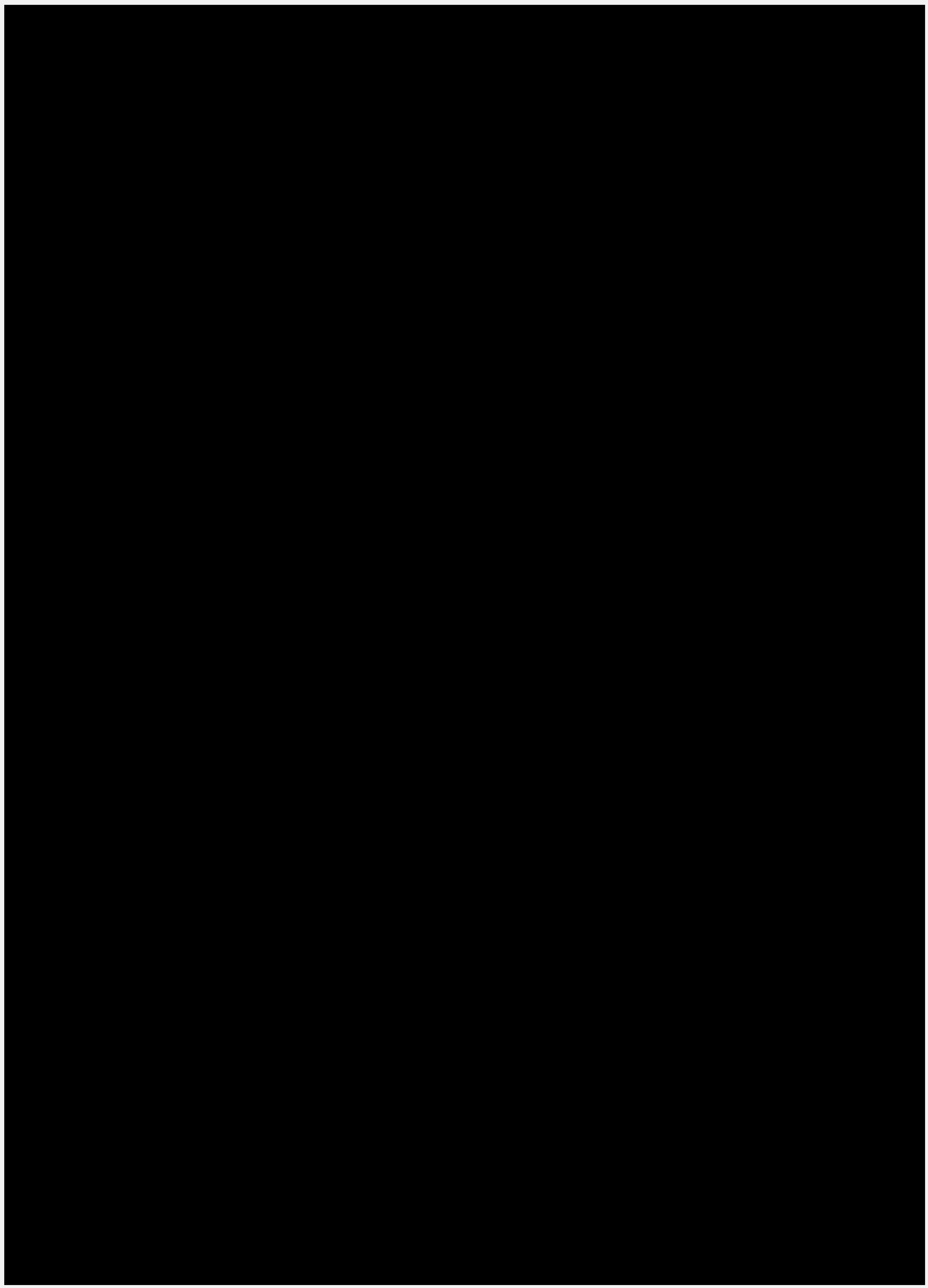

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QUESTION 12

Supplier Contact and Parts Demand

SUPPLIER CONTACT INFORMATION

Name:	Kathleen Kane Head of Quality Management
Company:	Passive Safety & Sensorics - NAFTA Continental Automotive Systems, Inc.
Address:	One Continental Drive Auburn Hills, MI 48326
Contact:	Tel: 248-393-5812 Mobile: 574-596-6326
E-mail:	kathleen.kane@continental-corporation.com

Q11
PARTS DEMAND HISTORY
AS OF 03/20/2014

PART DESCRIPTION	SERVICE PART NO.	MODEL APPLICATION	PART RELEASE DATE	CALENDAR YEAR					
				2009	2010	2011	2012	2013	2014
SRS UNIT	77960-TA0-A01	2008 ACCORD	9/5/2007	N/A	N/A	N/A	N/A	N/A	N/A
SRS UNIT	77960-TA0-A02 (SUPERSEDES 77960-TA0-A01)	2008-2010 ACCORD	6/9/2008	2262	3399	3792	3410	3326	2524
SRS UNIT	77960-TA0-L01	2008 ACCORD	9/5/2007	N/A	N/A	N/A	N/A	N/A	N/A
SRS UNIT	77960-TA0-L02 (SUPERSEDES 77960-TA0-L01)	2008-2010 ACCORD	6/24/2008	639	581	575	663	533	514
SIDE IMPACT SENSOR	77970-TA0-A11	2008-2012 ACCORD	9/5/2007	1943	2341	2704	2655	2500	1656
SATELLITE SAFING SENSOR	77975-TA0-A11	2008-2012 ACCORD	9/5/2007	320	433	520	553	541	312

Q11
PARTS DEMAND HISTORY
AS OF 03/20/2014

	24-MONTH HISTORY			
	SRS UNIT 77960-TA0-A02	SRS UNIT 77960-TA0-L02	SIDE IMPACT SENSOR 77970-TA0-A11	SATELLITE SAFING SENSOR 77975-TA0-A11
NOVEMBER 2012	296	67	200	43
DECEMBER 2012	231	35	223	41
JANUARY 2013	317	46	273	57
FEBRUARY 2013	274	40	232	65
MARCH 2013	262	47	227	54
APRIL 2013	243	39	237	54
MAY 2013	279	48	220	41
JUNE 2013	284	46	187	34
JULY 2013	307	56	175	36
AUGUST 2013	319	62	185	41
SEPTEMBER 2013	257	36	194	37
OCTOBER 2013	285	48	219	44
NOVEMBER 2013	221	37	143	30
DECEMBER 2013	278	28	208	48
JANUARY 2014	295	53	212	39
FEBRUARY 2014	204	29	164	32

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11/10/2014

QUESTION 13

Q13a c e_Redacted

Q13 a, c and e Response

Q13a) The causal or contributory factor(s);

The threshold setting for side impacts did not have enough margin for typical market use, therefore if the door is slammed shut the airbags may deploy.

Q13c) The failure mode(s);

When driver or passenger side door are slammed shut (with over [redacted]s force), the side airbag and side curtain airbag can deploy.

Q13e) In the event of the claimed defect or the subject component became inoperative, how the operator and the other passengers are warned inside or outside of the cabin?

1) In the event of claimed defect:

   Neither the driver or passengers are warned in advance.

   Once the event occurs, the SRS unit detects the airbag deployment and the SRS warning lamp will illuminate on the vehicle instrument panel.

2) In the event the subject component became inoperative:

   The self-diagnostic function of the SRS system will detect the failure and the SRS warning lamp will illuminate on the vehicle's instrument panel.

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QUESTION 13

Q13b_Redacted

Failure Mechanism

Small OFF margin against door slam shut mode

↓ ← ① **Slam the door shut**

② **SRS Unit and B-SIS receive signal that exceeds collision judgment threshold**

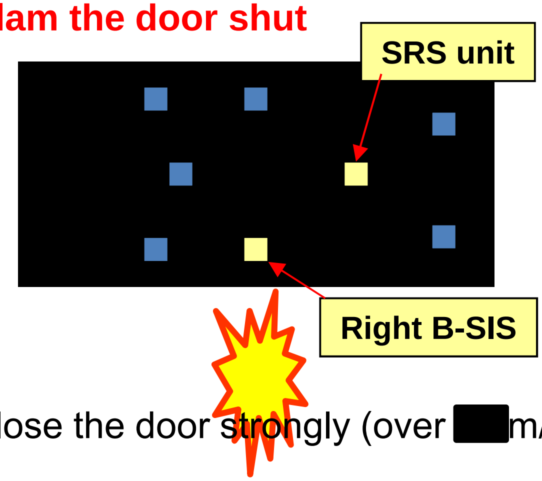
↓

SRS unit activates collision judgment mode ON

↓

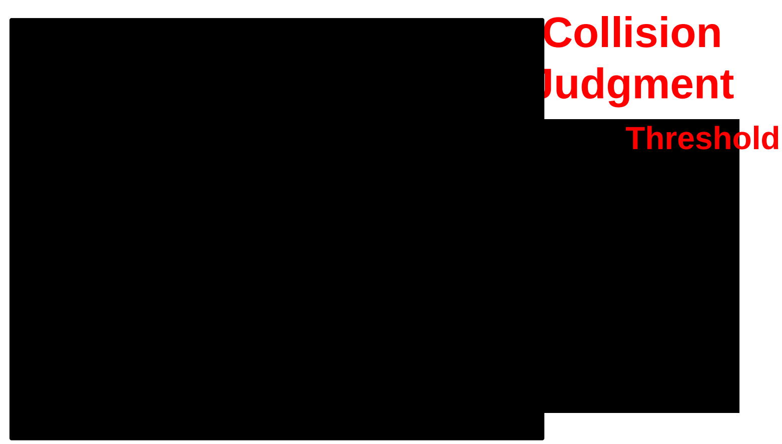
When door is shut, side airbag and side curtain airbag will deploy

① Slam the door shut



Close the door strongly (over [redacted] m/s force)

② Collision exceeds collision judgment threshold



SRS Unit Record G Data