OFFICIALS NEWSLETTER ISSUE 4: SCRUTINEERS

Fuel cell inspection

As of 1 January 2018, a vehicle with a FIA fuel cell will be required to meet the following requirements from Schedule N:

5. FUEL CELL INSPECTION

(a) Each automobile in an international competition shall comply with the FIA regulations.

(b) The following regulations of this article (5(b)) shall apply from 1 January 2018 and only to an automobile competing in an event permitted by CAMS. A FIA safety fuel cell FT3, FT3.5 and FT5 shall be inspected in compliance with the following requirements:

(I) Inspection of a fuel cell shall become due on the FIA expiry date of 5 years after manufacture;

(ii) Inspection of a fuel cell shall be carried out by a cams approved test facility every 2 years, refer Article 6;

(iii) Maximum life of a fuel cell shall be 15 years from the date of manufacture;

(iv) A damaged fuel cell shall not be repaired;

(v) Proof of inspection must be supplied to a Scrutineer on request; and

vi) Test details are to be recorded by CAMS in the logbook change of details section.

- Note: Category, class or event regulations may apply a higher standard for a fuel cell.
- There are only three test facilities that can perform this task which are listed in the CAMS Manual.
- No other test agent will be accepted unless approved by CAMS.
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New Vehicle Damage Report

- A new Vehicle Damage Report (VDR) has been introduced to refocus VDR's to record potential issues predominantly with driver safety devices.
- The information recorded is used in a newly developed database, which can highlight potential issues both in vehicle safety and a range of other areas.
- The objective in the new report is to continue emphasis on the condition of integrated vehicle safety components along with both driver and co-driver safety equipment and apparel.
- It is vital that when completing a VDR, that all applicable elements are completed correctly. Ensure focus is kept on the safety aspects of the vehicle rather than the cosmetic damage.
- This also means ensuring the vehicle logbook is recorded with the appropriate information regarding the incident.
- This vehicle damage report will greatly assist CAMS to make well-informed considerations. May it be around any future regulation changes, finding common safety related issues or faults and ensuring that safety components are still safe to use after accidents.
- The VDR form has been designed to be PDF fillable. This means the form can be emailed directly to the Technical department (technical@cams.com.au) once completed electronically. The form will work across all common PC and tablet applications.
- It is encouraged that any relevant photos of the effected items are sent along with the report for better documentation and recording.

The VDR form is available for download from the CAMS website.

Vehicle Damage Report - All Disciplines

Log Book Details

PERMIT NO. / EVENT NAME	Championship Series
VEHICLE CATEGORY	3 (Touring) , 3E
EVENT NO. (EG. Q1, R2)	Q1
DATE	30/11/2017
TIME	11:45AM
DRIVER NAME	John Competitor
LOG BOOK NO.	2017XXXX
VEHICLE MAKE	Hyundai Excel

Officials Details

SCRUTINEER NAME	John Scrutineer
SCRUTINEER LICENCE	884XXX
CHIEF STEWARD NAME	John Chief Steward

Vehicle

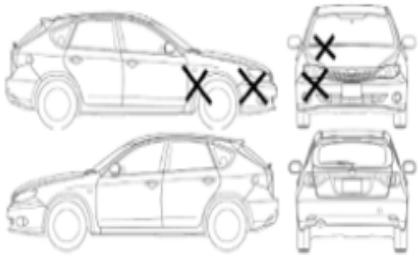
	DAMAGED: YES	NO	REPLACE
BODY DAMAGE EXTERNAL	✓		
BODY DAMAGE INTERNAL	✓		
SAFETY CAGE DAMAGE	✓		
SAFETY CAGE NO.	687XX		
SUSPENSION	✓		
STEERING WHEEL		✓	
SEAT DRIVER AND MOUNTINGS		✓	
SEAT CO-DRIVER AND MOUNTINGS			
Driver — HARNESS			✓
Driver — HARNESS BRAND	Sabelt		
Driver — STANDARD/EXPIRY	FIA 8853-2016/2020		
Co-Driver — HARNESS			
Co-Driver — HARNESS BRAND			
Co-Driver — STANDARD/EXPIRY			

Apparel

		DAMAGED: YES	NO	REPLACE
Driver	HELMET		✓	
Driver	HELMET BRAND/STANDARD	Bell/FIA 8860-2010		
Driver	FHR		✓	
Driver	FHR BRAND/STANDARD	Stand 21/8858-2010		
Driver	FHR TETHERS			✓
Co-Driver	HELMET			
Co-Driver	HELMET BRAND/STANDARD			
Co-Driver	DAMAGE FHR			
Co-Driver	FHR BRAND/STANDARD			
Co-Driver	FHR TETHERS			

Vehicle Damage

MARK WHERE THE DAMAGE IS SUSTAINED ON THE CAR



Written Report

WAS MEDICAL ATTENTION REQUIRED? YES ☐ NO ✓

COLLISION DESCRIPTION (IF KNOWN): Car (driver front corner) made contact with wall at turn 9

VEHICLE DAMAGE COMMENTS: Driver harness material has streched. FHR tether straps stretched. Refer to images attached with report.

Ensure the brand and standard/expiry for the harness are recorded.

Driver and co-driver sections separate allowing the report to be used across all disciplines.

Focus on damage to the vechicle's safety.

Ensure the brand/standard for both the helmet and FHR are recorded.

Differences between original and fake seat belts

The information sheet below shows how careful we need to be when checking off safety equipment and in this case safety harnesses.

Differences between original and fake seat belts (Sabelt)

1.

- **Brand/logo: Small black. Red logo has not been used in 15 years.**

2.

- **Stitching pattern: Where the belt material loops around to attach to snap-locks and tabs that lock into the buckle.**
- **Just by eye, you can see that the genuine belt (left) uses a much denser stitching pattern. The genuine harness also includes a FIA hologram certification along with serial numbers for the product.**

3.

- **Buckle: After the unfastening of all harness straps, the original buckle will be situated on crotch straps, i.e. five or six point. A fake may stay on a sideways point.**

FHR checks

- The following information will help in the examination of a Frontal Head Restraint (FHR) following an accident.
- FHR devices restrain the driver's head relative to his torso during a frontal impact, thereby reducing the loads applied to the head and neck.
- Forces from the helmet carried through the tethers to the FHR counteract the movement of the head and the FHR carries these forces either directly or indirectly to the safety harness. The most severe loading of the FHR system occurs during a frontal crash where the driver's head is not restrained by contact with the protective headrest.
- The FHR device has been one of the most important pieces of safety equipment introduced by the FIA and it has saved several lives and prevented serious neck injuries. Therefore, it is important that drivers use the FHR properly and that they examine their devices after a severe accident in order to identify whether or not the structural integrity of the device has been compromised.
- A severe accident is any frontal or angled frontal accident with a yaw angle of up to 45°, and with an estimated impact speed of over 50 km/h.
- How to check the FHR device
- After any frontal or angled frontal accident with a yaw angle of up to 45°, and especially after a severe accident, check:

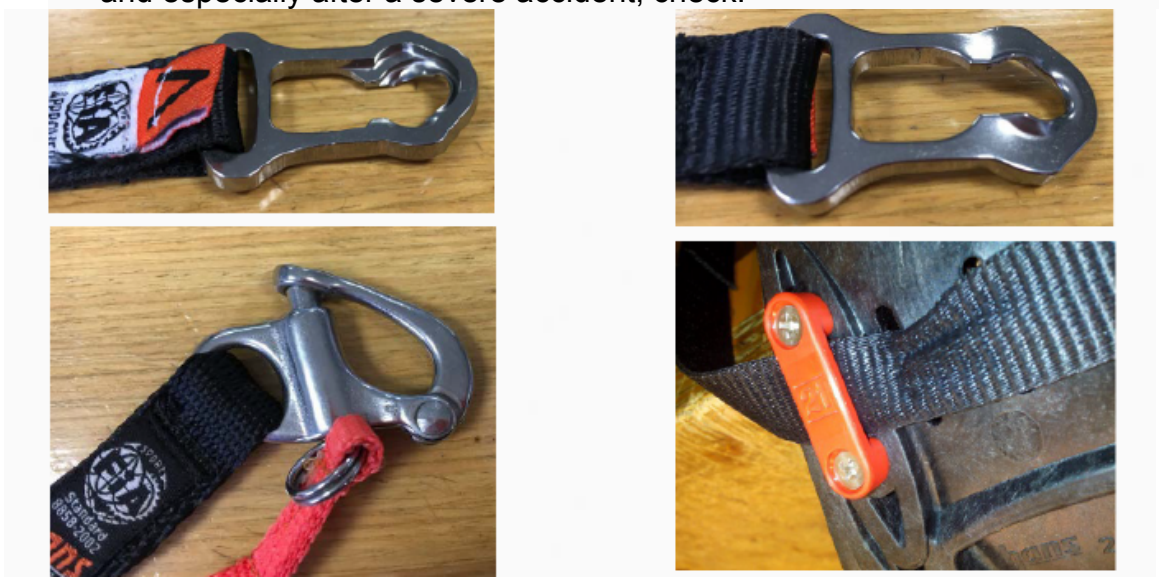


Figure 1 – Deformed end fitting (top right and left, and bottom left) and stretched FHR tether (bottom right).

2. Whether there are any signs of wear or friction on the FHR surface in contact with the shoulder belts, as shown in Figure 2.

Figure 2 – Signs of wear on the rubber surface

3. Whether the shoulder belt has been stretched, as shown in Figure

- If any of the abovementioned points are identified, the FHR device is to be sent to the manufacturer or their agent so that tests can be performed in order to check the structural integrity of the device.
- Please also check whether there is any damage to the Helmet anchorage points. If there is any damage, the helmet should be checked and/or sent back to the manufacturer for further checks.
- The safety harness shall be replaced, as webbing that has been stretched will not perform as desired during a second accident.
- FIA Standards 8858-2002 and 8858-2010 have constructed in such a way that the first part of the device to be damaged in the event of an accident is the FHR tether.
- In any case, depending on the severity of the accident, non-visible damage to the FHR part may have occurred, compromising the structural integrity of the FHR device. Therefore, it is important to undertake the above checks.

Safety harness tips

- The optimal fitment of a safety harness is paramount in order for them to provide the most effective safety in the event of a collision.
- Apart from the usual look over with the checking of labels for any counterfeits and ensuring the webbing is in good condition, take the time to check for correct mounting of the safety belts.
- This includes the mounting of the crutch strap for harnesses with five and six point attachment.

Crutch Strap

There are some acceptable variations that you should familiarise yourself on how you can tell if a crutch strap has been installed correctly. The current CAMS regulations detailed within Schedule I are as below.

2.3: A safety harness shall be mounted using the following:

(e) Only a crutch strap or straps may be mounted in accordance with drawing I-6 where the following shall apply:

(I) Bars shall not bend under a strap load of at least 14.7kN

(ii) all edges shall be appropriately rounded (>1.5mm radius)

(iii) the bars shall directly clamp on each other firmly clamping the webbing

(iv) each attachment point shall be reinforced by the use of a plate in accordance with drawing I-4 or a single plate in accordance with drawing I-5

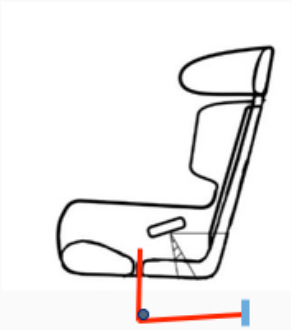
(v) the belt is correctly routed in accordance with drawing I-6

Positioning

- The positioning and mounting of the crutch strap is crucial. The reasoning for this is to ensure that when in an accident, the forces exerted are applied to the belt and mounting point rather than the seat.
- Correct installation of the crutch strap also will ensure that the driver does not move forward and torpedo under the lap belt.
  The mounting point must be located directly down from the bottom opening of the seat with a maximum variance of 20 Degrees as show in Drawing I-9.
- It may be noted that a crutch strap or straps may share a common mount with a lap belt or belts.

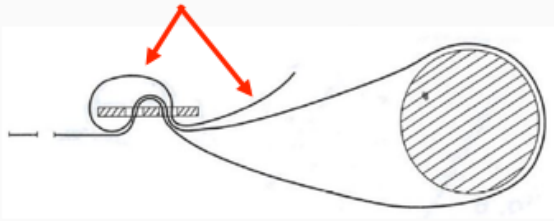
These are some ways that crutch straps are commonly found to be incorrectly mounted and positioned:

- The belt has been mounted both forward and backwards well beyond the 20 degree allowance
- Use of the incorrect mounting method
- Using a pivot to mount the crutch belt behind the seat as show in the image below.

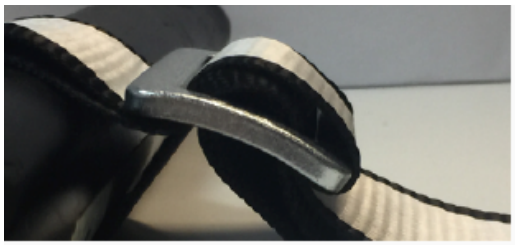


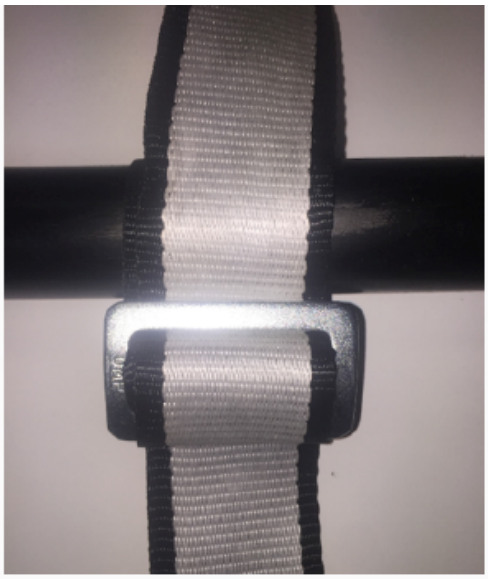
Commonly found safety belt issues

- Frequently safety harness belts are found to be fouling against sharp surfaces that can cause premature wear and tear.
- This will hinder the effectiveness of the belt during an incident.
- No component of the seat belt should rub against any surface or be in contact with any rough or cutting surfaces such as plates or sharp edges so ensure a proper check with this on each vehicle.
- Another critical element commonly found is the fixing of shoulder straps to roll bars.
- The image below shows an example of a belt fixing done correctly. Make sure the belt has been looped back through the buckle as arrowed in the image, as this ensures that the harness straps are 'locked in'.



- Sometimes the belt is not looped back, which can result in slippages that unintentionally increase the length of the belt.
- Another factor is to ensure that the buckle is as close possible to the roll bar if this method is used (example pictures below). This will reduce the belt movement, which could possibly compromise other aspects of the belt system if used with FHR.





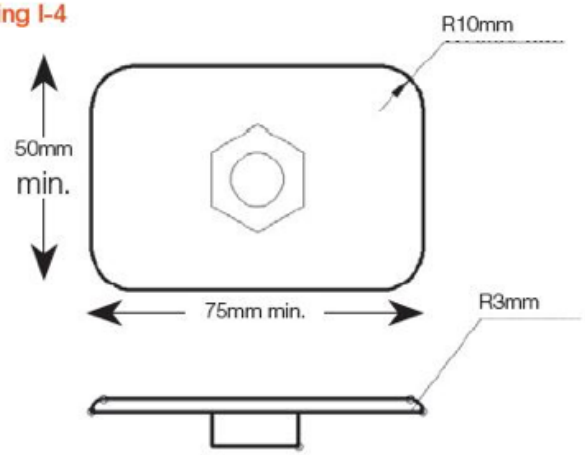
- To maintain the adjustment of the shoulder strap/s it is permissible to attach roll bar padding or similar provided it does not damage the webbing of the strap/s.
- Care should also be taken to ensure any mounting buckle if used does not foul on the seat openings as this can result in a false restraint pressure and loosen off in an accident.
- Please take the time to ensure the correct installation and upkeep of a safety harness system, including that of the crutch straps. For questions on safety harnesses contact technical@cams.com.au

- *Published: 13 December, 2017*

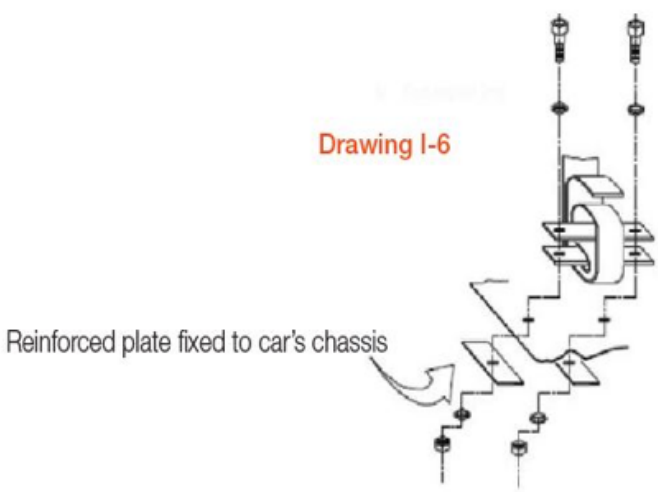
Mounting

Drawing I-5

Drawing I-4



Drawing I-6



Drawing I-9