

**RAPPORT D'ESSAI - TEST REPORT
COLLISION FRONTALE DE RECHERCHE
(FACE DÉFORMABLE)
RESEARCH FRONTAL IMPACT
(DEFORMABLE FACE)**

VÉHICULE D'ESSAI / TEST VEHICLE HYUNDAI TUCSON 2005 TC # 05-250
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**ESSAIS DE RECHERCHE CONJOINTS TC/NHTSA SUR LES
SACS GONFLABLES FRONTAUX
JOINT TC/NHTSA FRONTAL AIRBAGS RESEARCH TESTS**

Préparé par :
PMG TECHNOLOGIES
CENTRE D'ESSAIS ET DE RECHERCHE
100, rue du Landais
Blainville (Québec) J7C 5C9

N° de contrat : **06-6008**
Rapport N°: **RR06-141**

Pour :
TRANSPORTS CANADA
SÉCURITÉ ET SÛRETÉ
Programmes de sécurité routière
Recherche et essais de véhicules
Ottawa (Ontario)

Prepared by :
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SAFETY AND SECURITY
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Les résultats des essais figurant dans ce compte-rendu ne représentent pas une décision officielle du Ministère des Transports quant à l'acceptation de la performance sécuritaire, de la consommation de carburant ou de la conformité d'un véhicule ou des composantes d'un véhicule aux normes de sécurité et d'antipollution. Le Ministère des Transports ne certifie, n'approuve ou n'endosse aucun produit de véhicule automobile.

The test results presented herein do not, in themselves, represent an official determination by the Department of Transport with fuel consumption or compliance with safety and emission standards of any motor vehicle or motor vehicle component. The Department of Transport does not certify, approve or endorse any motor vehicle product.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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VÉHICULE D'ESSAI - TEST VEHICLE

Fabricant - Manufacturer HYUNDAI MOTOR COMPANY IN KOREA	Type de carrosserie - Body Style Hayon 5P / 5D Hatchback	Marque, modèle, Année - Make, model, Year HYUNDAI TUCSON 2005
Classe de véhicule - Class of vehicle MPV / VTUM	Boîte de vitesse - Transmission Type Auto. avant / Auto. Front wheel	Moteur - Engine 4 cyl. trans. avant / 4 cyl. trans. front
Date de fabrication - Date of Manufacture MAY/31/05	Cylindres - Cylinders 2.0 Lit.	N° d'ident. du véhicule - Vehicle Ident. No. KM8JM12B65U220655
Lecture de l'odomètre - Odometer Reading 29 km	Nombre de places assises désignées Number of Designated Seating Positions 5	Numéro d'ident. PMG - PMG Ident. Number UN6-228
PNBV - GVWR 2010 kg	PNBE (Avant) - GAWR (Front) 1150 kg	PNBE (Arrière) - GAWR (Rear) 1100 kg

CONFIGURATION D'ESSAI - TEST CONFIGURATION

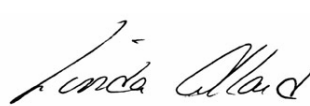
Type d'essai - Test type Véh. vs barrière avec Face Déformable TRL Veh. vs barrier with TRL Deformable Face	Vitesse d'impact- Impact velocity		Angle d'impact Impact angle	Masse du véhicule d'essai Test vehicle mass
	Prévu / Intended : 56.0 km/h	Obtenu / Obtained : 56.6 km/h	0 °	1768.0 kg
Description et position du mannequin (conducteur) Dummy description and position (driver) Description Hybrid III (5 %)	Position ** 12 mm		Description et position du mannequin (passager avant) Dummy description and position (front passenger) Description Hybrid III (5 %)	Position ** 0 mm
Description et position du mannequin (passager arrière gauche) Dummy description and position (left rear passenger) Description Hybrid III (5 %)	Position ** N/A		Description et position du mannequin (passager arrière droit) Dummy description and position (right rear passenger) Description Hybrid III (5 %)	Position ** N/A

RÉSULTATS GÉNÉRAUX - GENERAL RESULTS

Déploiement des sacs gonflables - Airbags deployment Coussins frontaux - Frontal airbags		Déploiement des sacs gonflables - Airbags deployment Coussins latéraux - Lateral airbags	
Conducteur / Driver	Passager / Passenger	Conducteur / Driver	Passager / Passenger
Déployé / Deployed 25.8ms	Déployé / Deployed 27.1ms	N/A	N/A
Rétrotracteurs de ceintures-prétensionneurs Seat belts retractors-pretensioners		Limiteur de charge des ceintures de sécurité Seat belts load limiter	
Conducteur / Driver	Passager / Passenger	Conducteur / Driver	Passager / Passenger
Déployé / Deployed	Déployé / Deployed	Non-équipé / Not equipped	Non-équipé / Not equipped

Essai réalisé selon la procédure de PMG : Collision frontale de recherche, version 3, révision 10 avril 2000.

Test performed according to PMG procedure: Research frontal impact, version 3, revised april 10, 2000.

Préparé par : Prepared by : 	Digitally signed by Pierre Beauchamp Date: 2005.12.02	Approuvé par : Approved by :
Vérifié par : Verified by : 	Digitally signed by Linda Allard Date: 2005.12.02	Accepté par : Accepted by :

* Tel qu'observé avec l'application d'une charge de 12V après l'essai.

* As observed by a 12V application after the test.

** Référence : 0 est la position la plus avancée. / ** Reference : 0 is the foremost position.

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DONNÉES DU VÉHICULE D'ESSAI / TEST VEHICLE DATA

Capacité du véhicule - Vehicle Capacity		Masse des bagages - Cargo Load		Type de sièges – Type of seats			Types de dossiers - Type of seat back		
390 kg					Avt - Frt	Arr - Rr		Avt - Frt	Arr - Rr
Nombre d'occupants (places assises désignées) Number of Occupants (Designated Seating Positions)				Banquette Bench		X	Dossier ajustable Adjustable Seat Back	X	
Avant – Front 2 Arrière – Rear 3 Total 5				Baquet Bucket	X		Dossier non-ajustable Non-adjustable Seat Back		X
Volume de carburant pour l'essai Fuel system test volume				Pression à froid - Cold Tire Pressure			Dimension - Size		
52.78 l				Avant - Front 210 kPa Arrière - Rear 210 kPa		Secours - Spare 420 kPa		P215//65R16	

PREMIÈRE PESÉE : VÉHICULE TEL QUE LIVRÉ (AVEC LIQUIDES AU MAXIMUM)

FIRST WEIGHT : VEHICLE AS RECEIVED (WITH MAXIMUM FLUIDS)

Avant gauche - Left front	Avant droit - Right front	Masse avant totale - Total front weight
443.4 kg	440.2 kg	883.6 kg
Arrière gauche - Left rear	Arrière droit - Right rear	Masse arrière totale - Total rear weight
305.6 kg	308.4 kg	614.0 kg
Masse totale côté gauche - Total left side weight	Masse totale côté droit - Total right side weight	Masse totale - Total weight
749.0 kg	748.6 kg	1497.6 kg

TROISIÈME PESÉE : VÉHICULE PRÊT POUR L'ESSAI

THIRD WEIGHT : VEHICLE READY FOR TEST

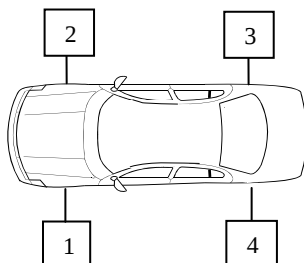
Avant gauche - Left front	Avant droit - Right front	Masse avant totale - Total front weight
482.0 kg	481.8 kg	963.8 kg
Arrière gauche - Left rear	Arrière droit - Right rear	Masse arrière totale - Total rear weight
403.0 kg	401.2 kg	804.2 kg
Masse totale côté gauche - Total left side weight	Masse totale côté droit - Total right side weight	Masse totale - Total weight
885.0 kg	883.0 kg	1768.0 kg

ATTITUDE DU VÉHICULE / VEHICLE ATTITUDE

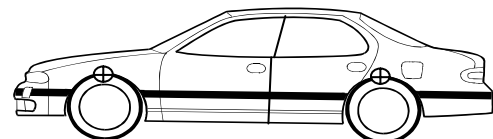
		Attitude tel que livré Attitude on delivery	Attitude tel que testé Attitude as tested
1	Roue avant gauche* Left front wheel*	763 mm	741 mm
2	Roue avant droite* Front right wheel*	759 mm	739 mm
3	Roue arrière droite* Rear right wheel*	788 mm	740 mm
4	Roue arrière gauche* Rear left wheel*	788 mm	753 mm

* Mesures prises aux puits de roues. // *Measurements taken at wheel openings.

Vue de plan / Plan view



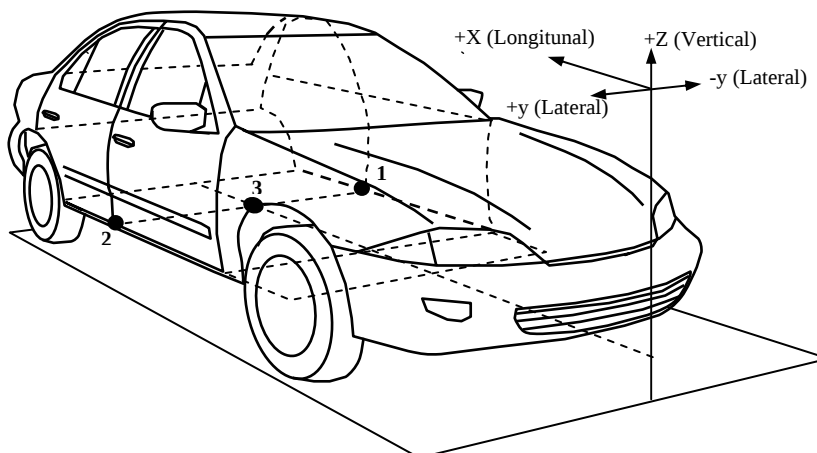
Vue de côté / Side view



⊕ Points de mesure / Measurement points

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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EMPLACEMENT DES ACCÉLÉROMÈTRES
ACCELEROMETER LOCATIONS

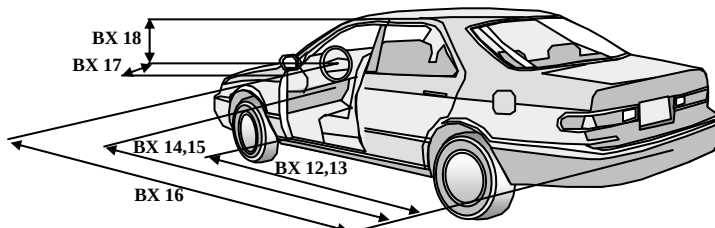
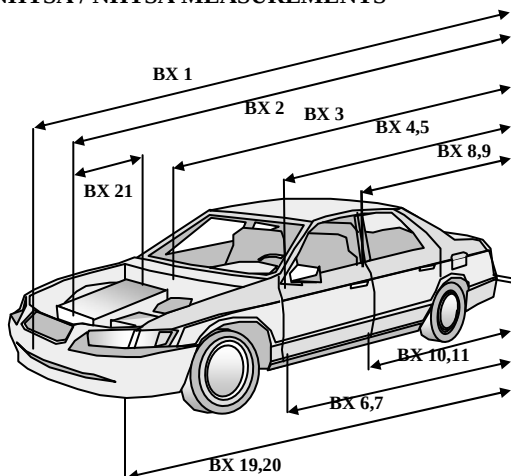


Point de référence : Centre transversal du véhicule, au point le plus avancé, au niveau du sol. Selon SAE J182a.
Reference point : Transversal center of the vehicle, at the foremost point and at ground level. As per SAE J182a.

EMPLACEMENT LOCATION	DESCRIPTIONS	COORDONNÉES / COORDINATES (mm)		
		X	Y	Z
#1	Seuil de la porte gauche @ pilier "B" Left door sill @ pillar "B"	2455	-619	414
#2	Seuil de la porte droite @ pilier "B" Right door sill @ pillar "B"	2453	622	414
#3	Centre de gravité Centre of gravity	2644	-3	431

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MESURES NHTSA / NHTSA MEASUREMENTS



- 1 - Longueur totale du véhicule
Total length of vehicle
- 2 - Surface arrière à l'avant du bloc moteur
Rear surface at front of engine block
- 3 - Surface arrière à la cloison pare-feu
Rear surface at fire-wall
- 4 - Surface arrière à la partie supérieure avant porte avant droite
Rear surface of front superior part of right front door
- 5 - Surface arrière à la partie supérieure avant porte avant gauche
Rear surface of front superior part of left front door
- 6 - Surface arrière à la partie inférieure avant porte avant droite
Rear surface of front inferior part of right front door
- 7 - Surface arrière à la partie inférieure avant porte avant gauche
Rear surface of front inferior part of left front door
- 8 - Surface arrière à la partie supérieure arrière porte avant droite
Rear surface of rear superior part of right rear door
- 9 - Surface arrière à la partie supérieure arrière porte avant gauche
Rear surface of rear superior part of left rear door
- 10 - Surface arrière à la partie inférieure arrière porte avant droite
Rear surface of rear inferior part of right rear door
- 11 - Surface arrière à la partie inférieure arrière porte avant gauche
Rear surface of rear inferior part of left rear door
- 12 - Surface arrière à la partie inférieure du pilier "A" droit
Rear surface of rear inferior part of right pillar "A"
- 13 - Surface arrière à la partie inférieure du pilier "A" gauche
Rear surface of rear inferior part of left pillar "A"
- 14 - Surface arrière à la cloison pare-feu côté droit
Rear surface of right side of fire-wall
- 15 - Surface arrière à la cloison pare-feu côté gauche
Rear surface of left side of fire-wall
- 16 - Surface arrière à la colonne de direction
Rear surface of steering column
- 17 - Centre de la colonne de direction au pilier "A"
Centre of steering column to pillar "A"
- 18 - Centre de la colonne de direction au toit
Centre of steering column to roof
- 19 - Surface arrière du véhicule au coin droit du pare-choc avant
Rear surface of vehicle to right corner of front bumper
- 20 - Surface arrière du véhicule au coin gauche du pare-choc avant
Rear surface of vehicle to left corner of front bumper
- 21 - Longueur du bloc moteur
Length of engine block

	BX*	AX**	Δx		BX*	AX**	Δx
1	4325	3749	576	12	2908	2906	2
2	3719	---	---	13	2906	2903	3
3	3443	---	---	14	3114	3059	55
4	2898	2896	2	15	3115	3047	68
5	2909	2907	2	16	2492	2510	-18
6	2907	2908	-1	17	435	427	8
7	2908	2907	1	18	511	533	-22
8	1929	1926	3	19	4307	3866	441
9	1921	1919	2	20	4302	3913	389
10	1939	1938	1	21	169	---	---
11	1942	1942	0				

Mesures en mm / Measurements in mm

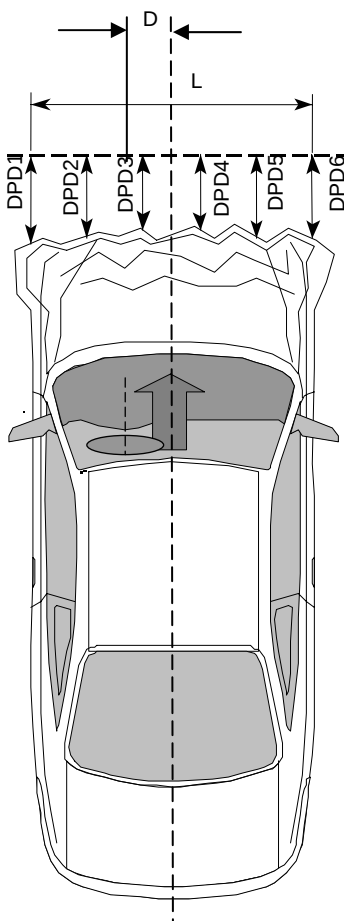
* BX : Mesures du véhicule avant-essai. / Pre-test vehicle measurements data.

** AX : Mesures du véhicule après-essai. / Post-test vehicle measurements data.

REMARQUES / COMMENTS : Aucune / None

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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MESURES DES DPD / DPD'S MEASUREMENTS



DPD 1:
DPD 2:
DPD 3:
DPD 4:
DPD 5:
DPD 6:
MESURE L:
MEASUREMENT L:
MESURE D:
MEASUREMENT D:

AVANT ESSAI PRE-TEST	APRÈS ESSAI POST-TEST	Δx
157	650	-493
39	422	-383
2	629	-627
3	541	-538
38	445	-407
163	678	-515
	1501	
	0	

Mesures en mm / Measurements in mm

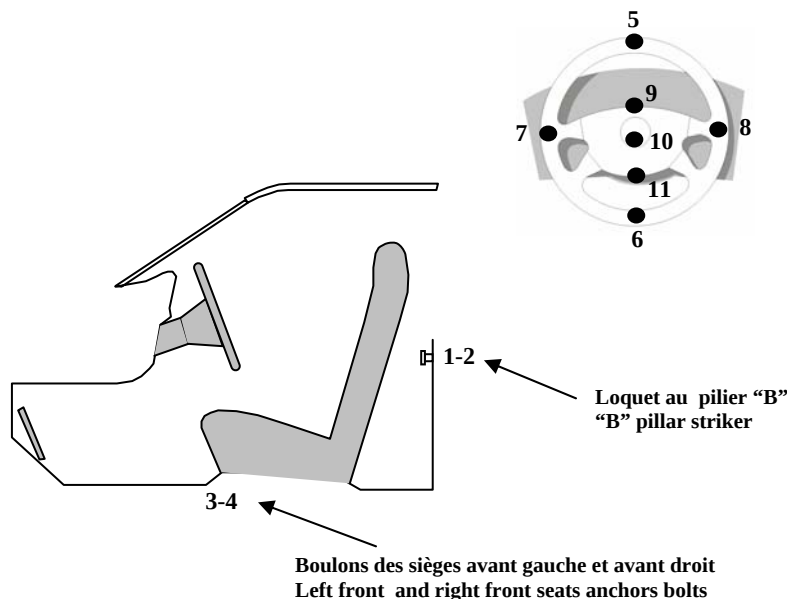
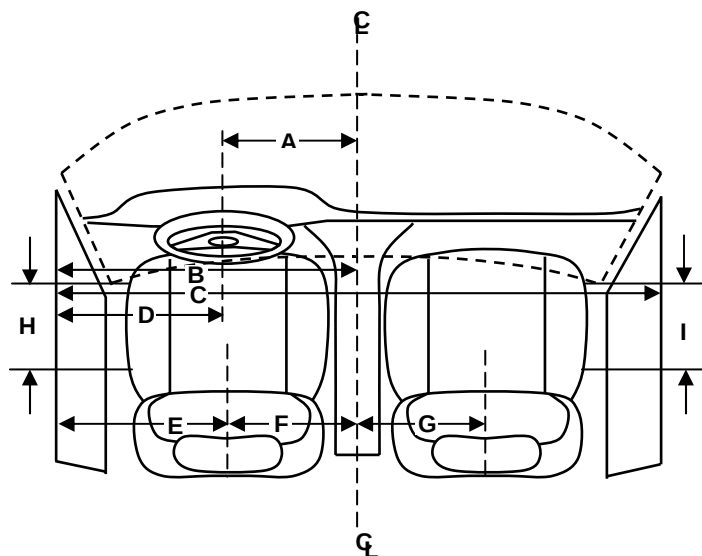
L : Longueur de la région endommagée
Length of damaged region

D : Distance du centre de déformation à la ligne de centre du véhicule
Midpoint of damage to Vehicle Longitudinal Centerline

REMARQUES / COMMENTS : Aucune / None

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MESURES DE VÉHICULE
VEHICLE MEASUREMENTS



Code	Description	mm
A	Centre du volant à la ligne de centre du véhicule Steering wheel center to center line of vehicle	344
B	Seuil de fenêtre à la ligne de centre du véhicule Window edge to center line of the vehicle	798
C	Fenêtre à fenêtre Window to window	1595
D	Centre du volant au seuil de la fenêtre Steering wheel center to window edge	454
E	Seuil de la fenêtre au centre du siège (conducteur) Window edge to seat midline (driver)	449
F	Centre du siège à la ligne de centre du véhicule (conducteur) Seat midline to center line of vehicle (driver)	349
G	Centre du siège à la ligne de centre du véhicule (passager) Seat midline to center line of vehicle (passenger)	357
H	Course du siège (conducteur) Seat travel (driver)	240
I	Course du siège (passager) Seat travel (passenger)	239
J	Ajustement du volant Steering wheel adjustment	39
K	Ajustement de la ceinture baudrier Upper torso belt adjustment	72

Code	Description	X(mm)	Y(mm)	Z(mm)
1	Loquet au pilier "B" (conducteur) "B" pillar striker (driver)	2336	-767	784
2	Loquet au pilier "B" (passager) "B" pillar striker (passenger)	2333	767	786
3	Boulon siège avant, extérieur (conducteur) Front seat bolt, outboard (driver)	1893	-582	439
4	Boulon siège avant, extérieur (passager) Front seat bolt, outboard (passenger)	1891	584	440
5	Jante du volant, centre haut Steering wheel rim, top centre	1730	-345	1221
6	Jante du volant, centre bas Steering wheel rim, bottom centre	1904	-345	882
7	Jante du volant, centre gauche Steering wheel rim, left centre	1809	-535	1051
8	Jante du volant, centre droit Steering wheel rim, right centre	1831	-157	1050
9	Moyeu du volant, centre haut Steering wheel hub, top centre	1796	-346	1086
10	Moyeu du volant, centre Steering wheel hub, centre	1846	-346	1037
11	Moyeu du volant, centre bas Steering wheel hub, bottom centre	1865	-346	986
12	Centre du volant Center of steering wheel	1833	-344	1050

Point de référence : Centre transversal du véhicule, au point le plus avancé, au niveau du sol. Selon SAE J182a.
Reference point : Transversal center of the vehicle, at the foremost point and at ground level. As per SAE J182a.

Remarques - Comments: Aucune / None

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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POSITIONNEMENT DES MANNEQUINS / MEASUREMENTS OF DUMMY POSITIONS

		<u>MESURES / MEASUREMENTS :</u>					
Conducteur/Driver :							

Remarques – Comments : **Aucune / None**

*** Référence : 0 est la position la plus avancée.**

*** Reference : 0 is the foremost position.**

Selon la procédure de positionnement de mannequin 5^e percentile Hybrid III, conformément à la sous-section O, TP208-12, 14 janvier 2003.

As per procedure for placement of a 5th percentile Hybrid III, conforming to subpart O, TP208-12, January 14th 2003.

Point de référence : Centre transversal du véhicule, au point le plus avancé, au niveau du sol. Selon SAE J182a.

Reference point : Transversal center of the vehicle, at the foremost point and at ground level. As per SAE J182a.

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POSITIONNEMENT DES MANNEQUINS / MEASUREMENTS OF DUMMY POSITIONS

2 ^{ième} Rangée / 2 nd row		MESURES / MEASUREMENTS :					
Passager gauche/Left Passenger: Hybrid III (5 %) #111		Toutes les mesures sont en mm / All measurements are in mm					
Angle du pelvis - Pelvic angle :							

Remarques – Comments : **Aucune / None**

Selon la procédure de positionnement de mannequin 5^e percentile Hybrid III, conformément à la sous-section O, TP208-12, 14 janvier 2003.

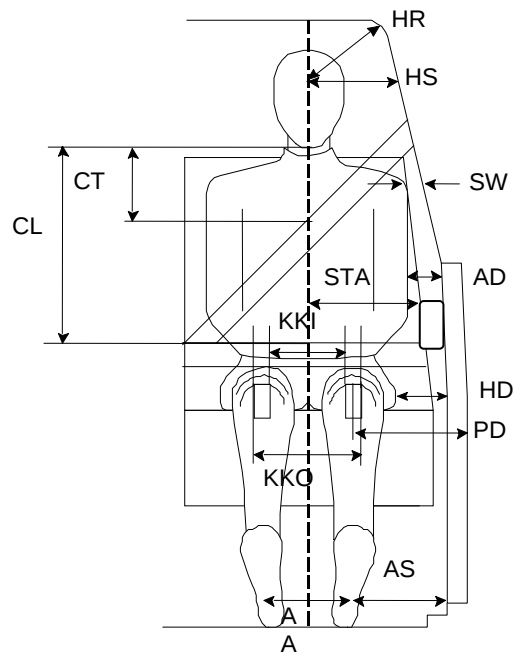
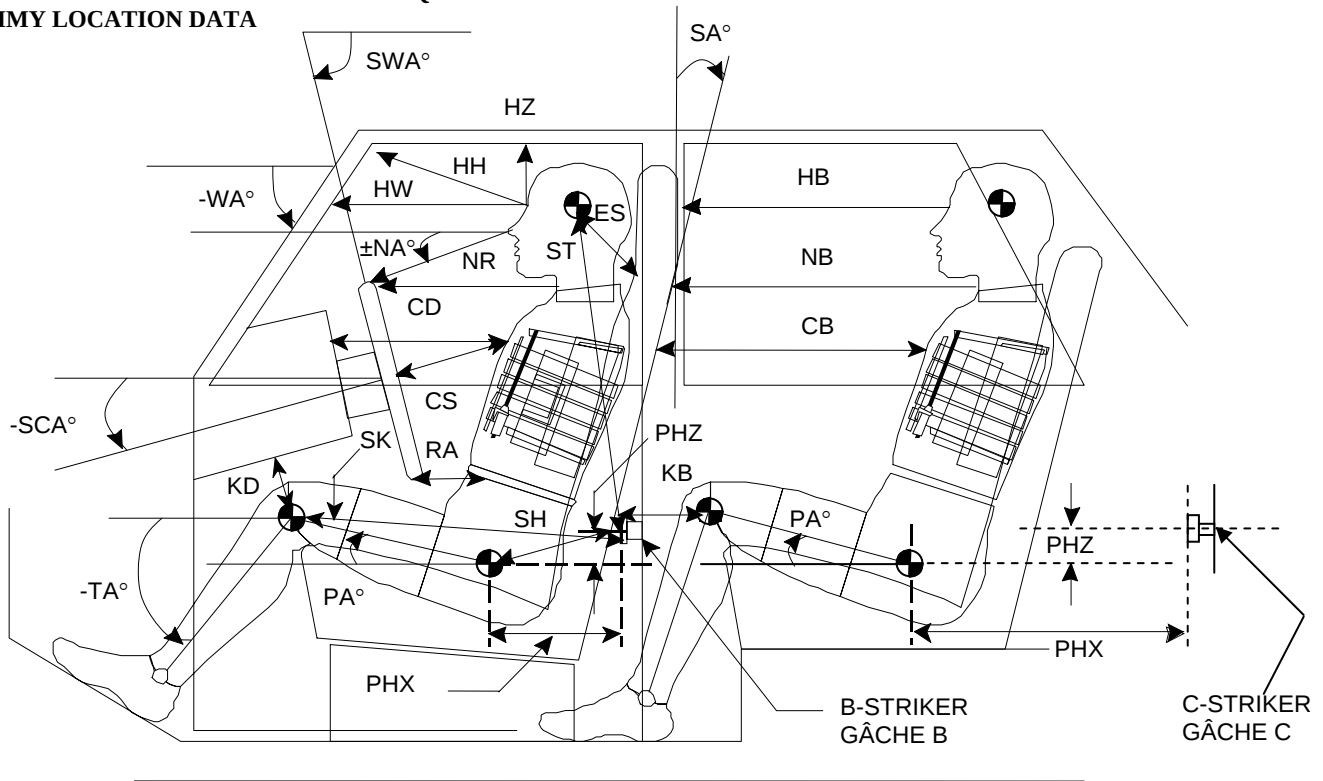
As per procedure for placement of a 5th percentile Hybrid III, conforming to subpart O, TP208-12, January 14th 2003.

Point de référence : **Centre transversal du véhicule, au point le plus avancé, au niveau du sol. Selon SAE J182a.**

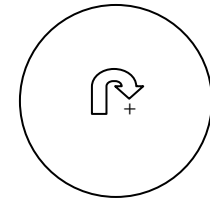
Reference point : **Transversal center of the vehicle, at the foremost point and at ground level. As per SAE J182a.**

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COTES DE LOCALISATION DES MANNEQUINS
DUMMY LOCATION DATA



référence
reference :



Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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**COTES DE LOCALISATION DES MANNEQUINS (suite)
DUMMY LOCATION DATA (continued)**

(Mesures prises en mm / Measurements taken in mm)

DESCRIPTION	CODE	CONDUCTEUR DRIVER	PASSAGER Av. F. PASSENGER	PASSAGER Arr.G. L.R. PASSENGER	PASSAGER Arr.D. R.R. PASSENGER
De cheville à cheville (boulon extérieur) Ankle to ankle (exterior bolt)	AA	350	240		
Genou à genou (plaque) Intérieur / Interior Centre / Center Knee to knee (plate) Extérieur / Extérieur	KKI	180	105		
	KKC	250	175		
	KKO	320	255		
De la cheville jusqu'au seuil de porte (horizontalement) Ankle to door sill (horizontal)	AS	160	165		
Centre du genou au tableau de bord ou siège horizontalement (minimum) Knees centre to dash or seat back horizontal (minimum)	KDL	20	15		
	KDR	40	18		
Sternum au tableau de bord (horizontalement) Chest to dash (horizontal)	CD		370		
Milieu du sternum au centre du moyeu du volant ou siège avant Mid sternum to steering hub center or front seat	CS/CB	200			
Milieu du front jusqu'au pare-brise (horizontalement) Mid forehead to windshield (horizontal)	HW	663	673		
Milieu du front jusqu'au haut du pare-brise Mid forehead to windshield header	HH	360	348		
Nez à la jante du volant de direction (haut) ou siège avant Nose to steering wheel rim (top) or front seat	NR/HB	298			
Milieu du front jusqu'au début du toit Mid forehead to edge roof	HR	310	315		
Haut de l'oreille au haut du siège avant Ear top to front seat top	ES	280	265		
Menton au haut de la ceinture sous-abdominale (verticalement) Chin to lap belt upper edge (vertical)	CL	355	355		
Menton au haut de la ceinture baudrier (verticalement) Chin to thorax belt upper edge (vertical)	CT	130	110		
Milieu du front à la fenêtre latérale (horizontalement) Mid forehead to side window (horizontal)	HS	345	356		
La rotule à la porte (horizontalement) Patella to door (horizontal)	PD	172	176		
Du point-H à la porte (horizontalement) H-point to door (horizontal)	HD	195	206		
Du milieu du bras à la porte (horizontalement) Mid upper arm to door (horizontal)	AD	114	182		
Cou jusqu'au volant ou tableau de bord (horizontalement) ou siège avant Neck to steering wheel or dash board (horizontal) or front seat	NB	392	525		
Épaule à la fenêtre de côté Shoulder to side window	SW	170	182		
Abdomen à l'appui-bras Abdomen to armrest	STA	172	170		
Milieu du front au toit (verticalement) Mid forehead to roof (vertical)	HZ	330	335		
Tête au loquet (plan (x,z)) Striker to head ((x,z) plan)	ST	521	515		
Abdomen à la jante du volant de direction (bas) Steering wheel rim to abdomen (bottom)	RA	75			
Genou au loquet (plan (x,z)) Striker to knee ((x,z) plan)	SK	666	680		
Point-H au loquet (plan (x,z)) Striker to H-Point ((x,z) plan)	SH	349	361		
Point-H au loquet en X (horizontalement) Striker to H-Point in X (horizontal)	PHX	339	349		
Point-H au loquet en Z (verticalement) Striker to H-Point in Z (vertical)	PHZ	85	94		

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COTES DE LOCALISATION DES MANNEQUINS (suite)

DUMMY LOCATION DATA (continued)

(Mesures prises en deg. / Measurements taken in deg.)

DESCRIPTION	CODE	CONDUCTEUR DRIVER	PASSAGER Av. F. PASSENGER	PASSAGER Arr.G. L.R. PASSENGER	PASSAGER Arr.D. R.R. PASSENGER
Angle du volant Steering wheel angle	+SWA	61.7°			
Angle du pare-brise Windshield angle	-WA	-30.5°			
Angle de la colonne de direction Steering column angle	-SCA	-27.5°			
Angle du tibia gauche Left tibial angle	-TA	-23.4°	-20.5°		
Angle du tibia droit Right tibial angle	-TA	-33.2°	-20.7°		
Angle pelvis Pelvic angle	+PA	20.4°	20.5°		
Angle du nez à la jante de direction (haut) Nose to steering wheel rim (top) angle	±NA	-4.4°			
Angle du dossier (Tige d'Appuie-tête) Seat back angle (Headrest Pole)	+SA	18.5°	16.3°		
Angle ST (horizontalement) ST angle (horizontal)	+ST-A	69.2°	66.2°		
Angle SK (horizontalement) SK angle (horizontal)	±SK-A	-0.5°	-1.3°		
Angle SH (horizontalement) SH angle (horizontal)	-SH-A	-14.1°	-15.1°		

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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**MESURES DE MANNEQUIN DAE
TEST DUMMY MEASUREMENTS**

CONDUCTEUR / DRIVER

Description et emplacement du Mannequin
ATD description and location :

DESCRIPTION	X(mm)	Y(mm)	Z(mm)
Centre de gravité de la tête, extérieur - Head CG, outboard	2151	-426	1271
Base du nez - Glabella (root of nose)	2064	-357	1282
Menton - Chin (bottom)	2059	-362	1173
Jonction menton et cou - Chin / neck junction	2128	-361	1196
Thorax au niveau des côtes supérieures - Chest at upper rib level	2029	-345	1002
Thorax au niveau des côtes inférieures - Chest at lower rib level	1997	-339	895
Boulon supérieur avant de l'épaule, ext. - Shoulder bolt, top front outboard	2170	-513	1041
Boulon supérieur avant de l'épaule, int. - Shoulder bolt, top front inboard	2178	-195	1048
Boulon du coude, extérieur - Elbow bolt, outboard	1998	-573	920
Boulon du coude, intérieur - Elbow bolt, inboard	2022	-70	947
Boulon du poignet, extérieur - Wrist bolt, outboard	1851	-566	1080
Boulon du poignet, intérieur - Wrist bolt, inboard	1863	-127	1086
Point d'articulation de la hanche, extérieur - Hip point, outboard	2082	-469	742
Boulon du genou gauche, extérieur - Knee bolt, left leg, outboard	1671	-504	778
Boulon de la cheville gauche, extérieur - Ankle bolt, left leg , outboard	1523	-488	467
Point du talon gauche - Heel point, left leg	1595	-486	363
Plante du pied gauche vs plancher - Ball of foot at toeboard contact, left leg	1456	-522	380
Boulon du genou droit, intérieur - Knee bolt, right leg , inboard	1661	-256	766
Boulon de la cheville droite, intérieur - Ankle bolt, right leg , inboard	1472	-217	494
Point du talon droit - Heel point, right leg	1478	-219	358
Plante du pied droit vs plancher - Ball of foot at toeboard contact, right leg	1342	-249	474
Potentiomètre de déflexion du sternum – Sternum deflection potentiometer	2007	-341	929

Remarques – Comments : **Aucune / None**

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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**MESURES DE MANNEQUIN DAE
TEST DUMMY MEASUREMENTS**

PASSAGER / PASSENGER

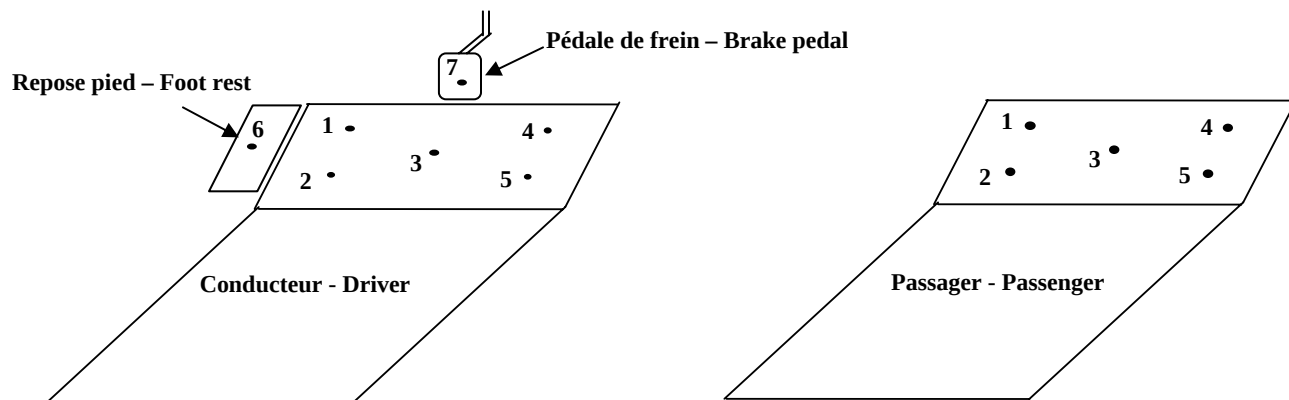
Description et emplacement du Mannequin
ATD description and location:

DESCRIPTION	X(mm)	Y(mm)	Z(mm)
Centre de gravité de la tête, extérieur - Head CG, outboard	2125	422	1257
Base du nez - Glabella (root of nose)	2040	358	1264
Menton - Chin (bottom)	2036	361	1157
Jonction menton et cou - Chin / neck junction	2108	360	1179
Thorax au niveau des côtes supérieures - Chest at upper rib level	2012	342	985
Thorax au niveau des côtes inférieures - Chest at lower rib level	1983	345	881
Boulon supérieur avant de l'épaule, ext. - Shoulder bolt, top front outboard	2150	509	1021
Boulon supérieur avant de l'épaule, int. - Shoulder bolt, top front inboard	2138	196	1026
Boulon du coude, extérieur - Elbow bolt, outboard	2053	562	827
Boulon du coude, intérieur - Elbow bolt, inboard	2066	158	824
Boulon du poignet, extérieur - Wrist bolt, outboard	1845	520	777
Boulon du poignet, intérieur - Wrist bolt, inboard	1859	191	769
Point d'articulation de la hanche, extérieur - Hip point, outboard	2070	472	732
Boulon du genou gauche, intérieur - Knee bolt, left leg, inboard	1645	316	762
Boulon de la cheville gauche, intérieur - Ankle bolt, left leg, inboard	1498	299	453
Point du talon gauche - Heel point, left leg	1576	283	361
Plante du pied gauche vs plancher - Ball of foot at toeboard contact, left leg	1438	342	363
Boulon du genou droit, extérieur - Knee bolt, right leg, outboard	1653	497	770
Boulon de la cheville droite, extérieur - Ankle bolt, right leg, outboard	1509	477	455
Point du talon droit - Heel point, right leg	1594	479	362
Plante du pied droit vs plancher - Ball of foot at toeboard contact, right leg	1462	521	372
Potentiomètre de déflexion du sternum – Sternum deflection potentiometer	1993	346	914

Remarques – Comments : **Aucune / None**

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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MESURES PLANCHER / FOOTWELL MEASUREMENTS



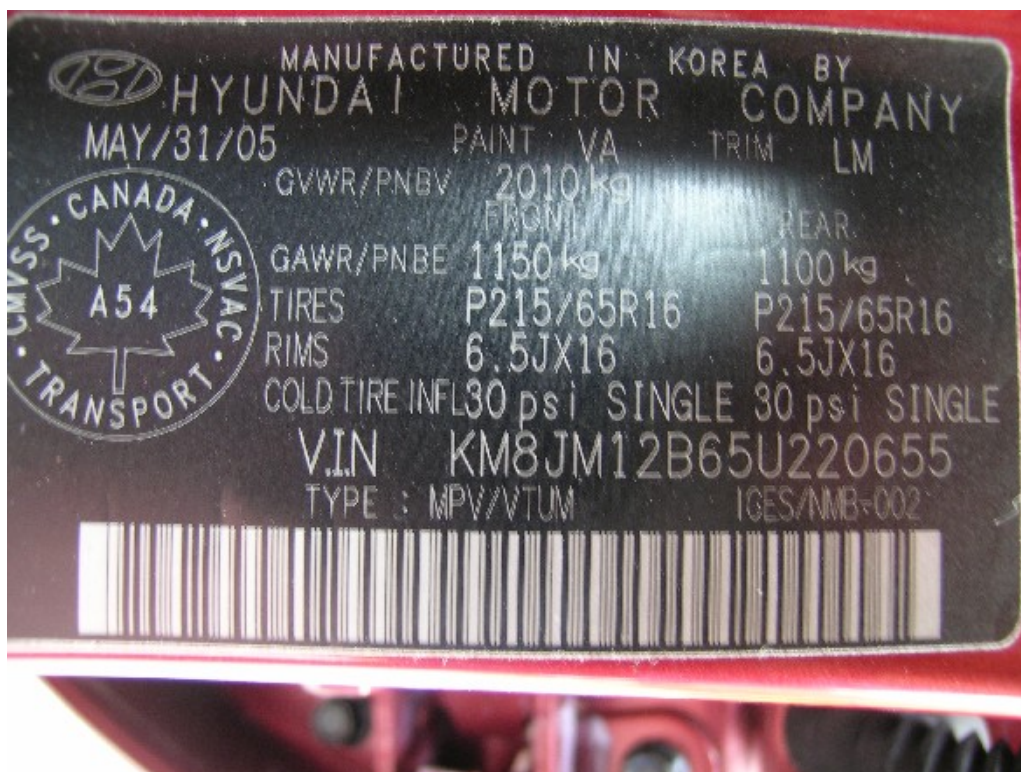
N° Cible		AVANT ESSAI	APRÈS ESSAI	
Target No.		PRE- TEST	POST- TEST	Δ mm
1	x	1200	1243	-43
	y	-449	-425	-24
	z	444	479	-35
2	x	1297	1316	-19
	y	-454	-444	-10
	z	377	391	-14
3	x	1226	1267	-41
	y	-307	-300	-7
	z	420	447	-27
4	x	1203	1295	-92
	y	-195	-195	0
	z	438	476	-38
5	x	1285	1315	-30
	y	-200	-207	7
	z	389	420	-31
6	x	1341	1362	-21
	y	-581	-576	-5
	z	446	452	-6
7	x	1344	1443	-99
	y	-290	-331	41
	z	525	586	-61

N° Cible		AVANT ESSAI	APRÈS ESSAI	
Target No.		PRE- TEST	POST- TEST	Δ mm
1	x	1176	1210	-34
	y			
	z			
2	x	1269	1281	-12
	y			
	z			
3	x	1228	1241	-13
	y			
	z			
4	x	1179	1221	-42
	y	454	443	11
	z	472	516	-44
5	x	1277	1285	-8
	y	471	466	5
	z	388	410	-22

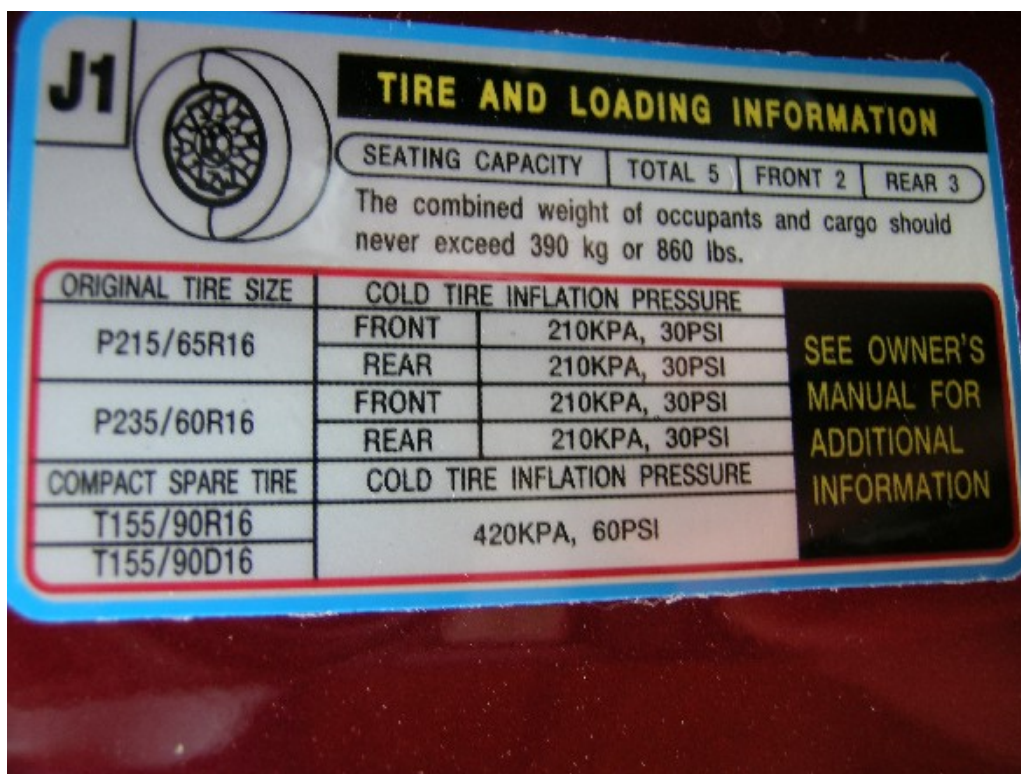
APPENDICE / APPENDIX A

**PHOTOGRAPHIES DE L'ESSAI
TEST PHOTOGRAPHS**

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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1. Étiquette de déclaration de conformité du véhicule d'essai.
Statement of compliance label of the test vehicle.



2. Étiquette d'information des pneus.
Tire information label.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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3. Vue $\frac{3}{4}$ avant du véhicule d'essai.
 $\frac{3}{4}$ front view of the test vehicle.



4. Vue $\frac{3}{4}$ arrière du véhicule d'essai.
 $\frac{3}{4}$ rear view of the test vehicle.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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5. Vue générale côté gauche du véhicule d'essai, avant essai.
Left side view of the test vehicle, pre-test.



6. Vue générale côté gauche du véhicule d'essai, après essai.
Left side view of the test vehicle, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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7. Vue arrière du véhicule d'essai, avant essai.
Rear view of the test vehicle, pre-test.



8. Vue arrière du véhicule d'essai, après essai.
Rear view of the test vehicle, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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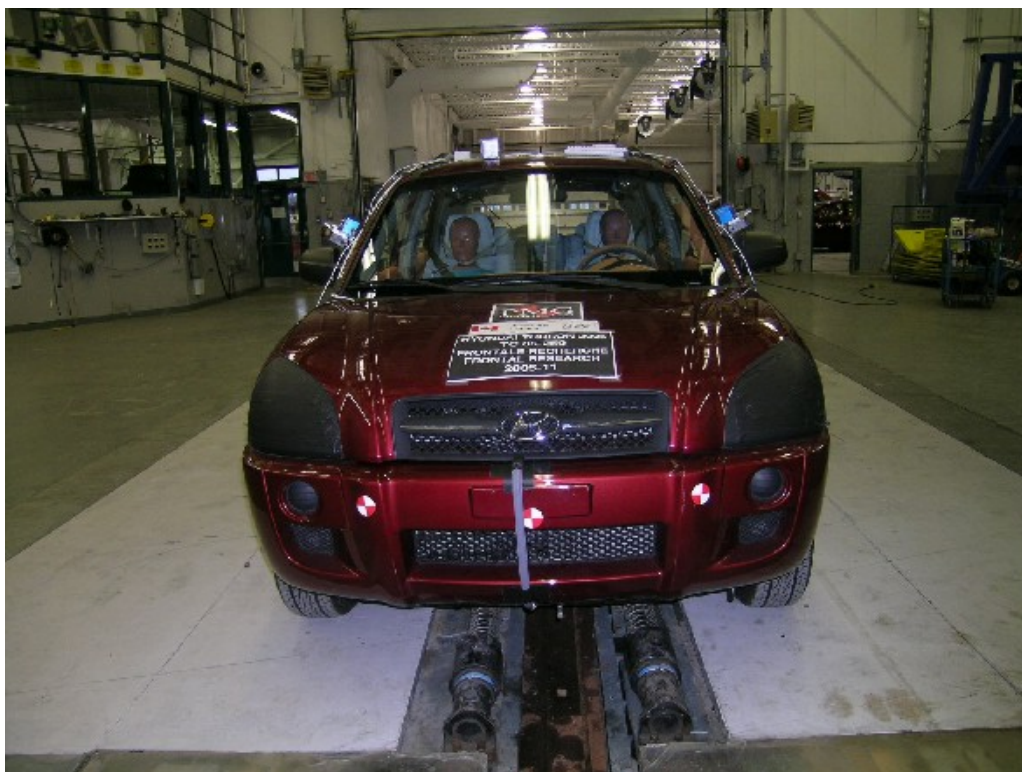


9. Vue générale côté droit du véhicule d'essai, avant essai.
General right side view of the test vehicle, pre-test.

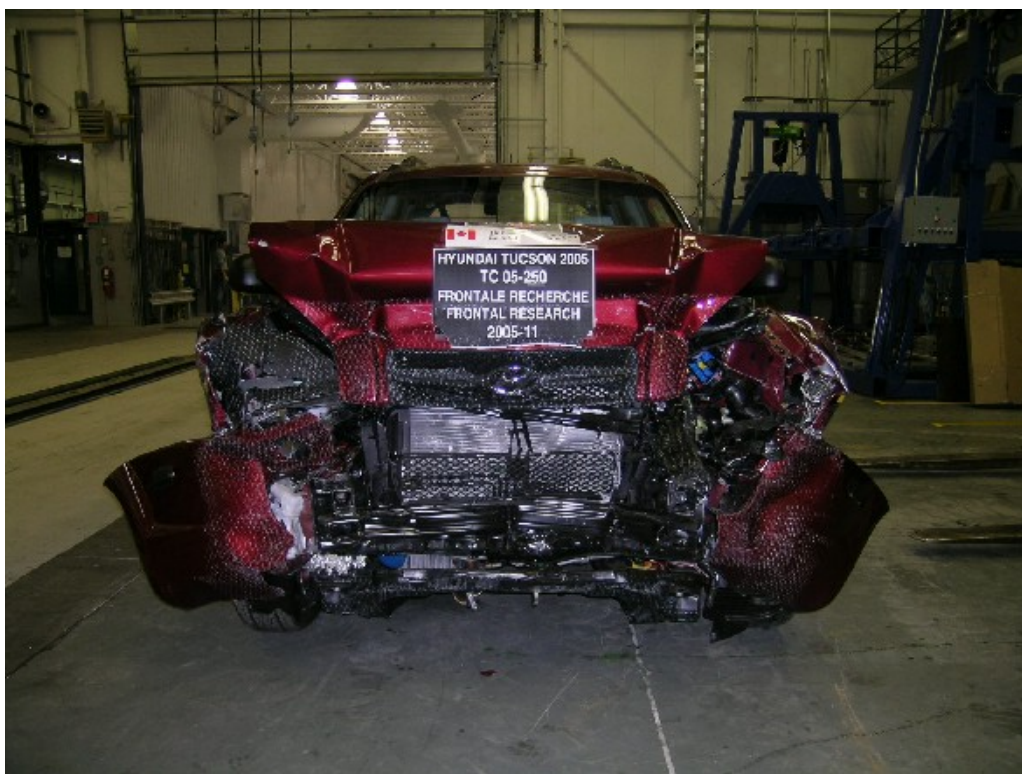


10. Vue générale côté droit du véhicule d'essai, après essai.
General right side view of the test vehicle, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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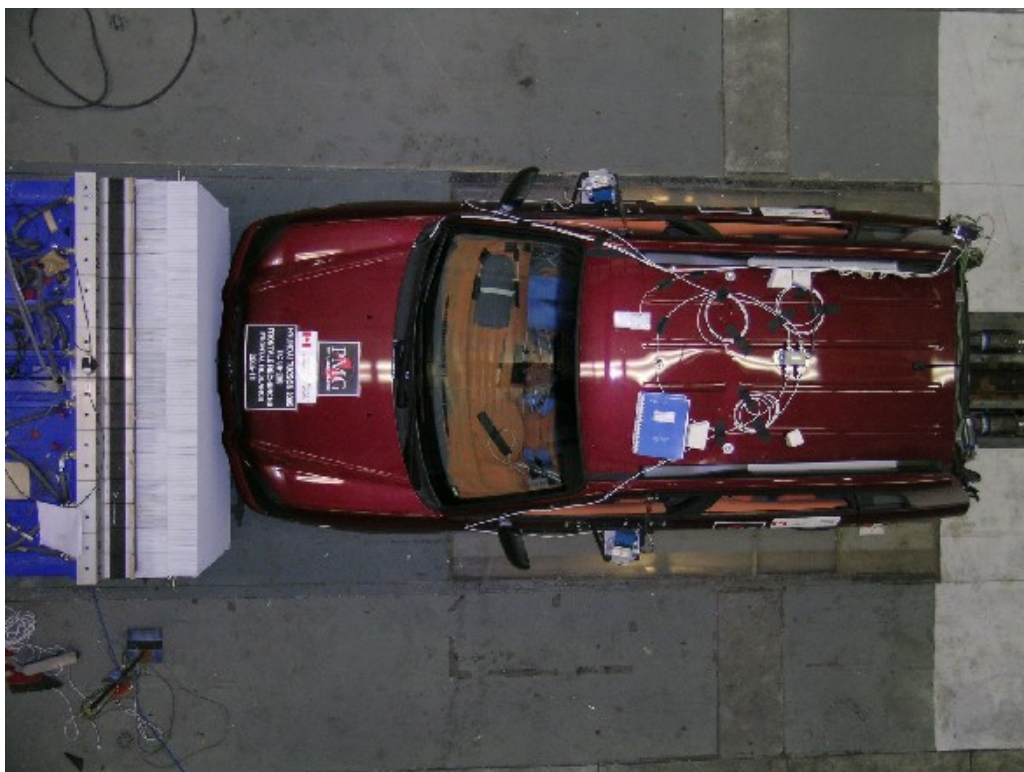


11. Vue avant du véhicule d'essai, avant essai.
Front view of the test vehicle, pre-test.

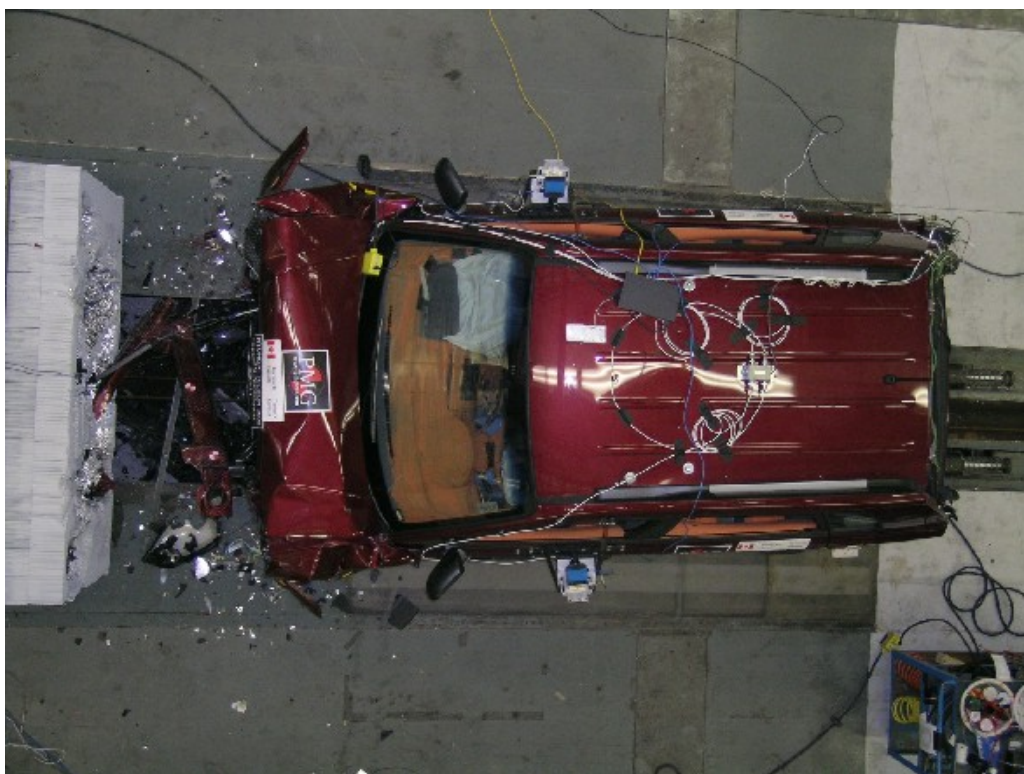


12. Vue avant du véhicule d'essai, après essai.
Front view of the test vehicle, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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13. Vue de plan du véhicule d'essai, avant essai.
Over view of the test vehicle, pre-test.

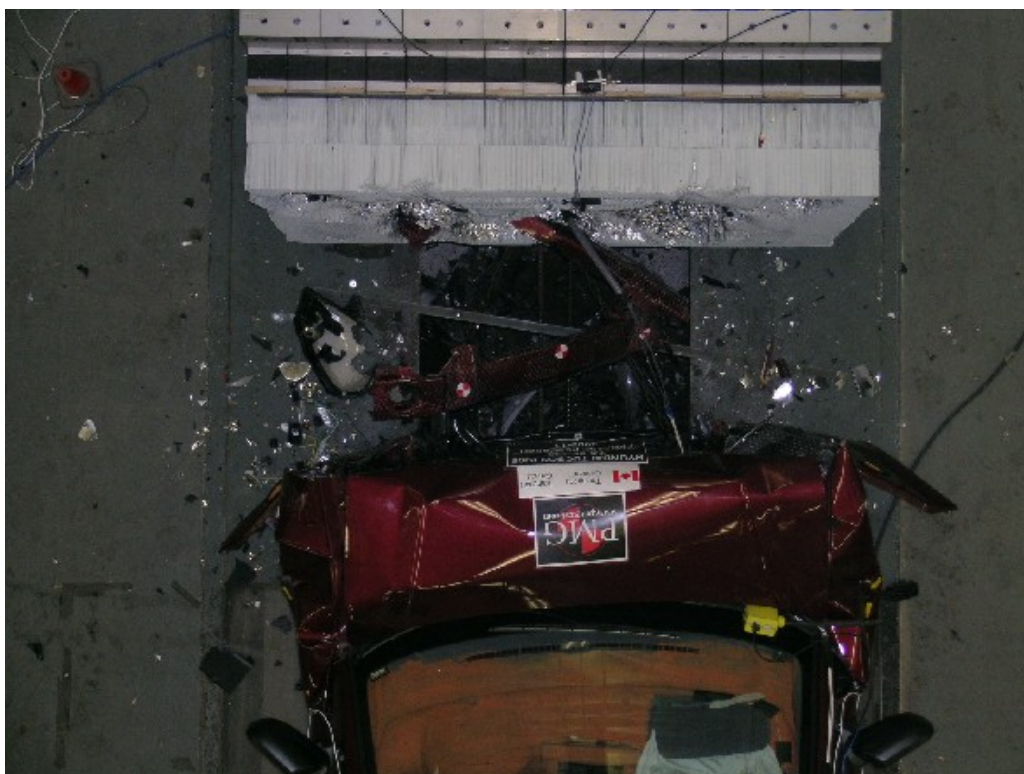


14. Vue de plan du véhicule d'essai, après essai.
Over view of the test vehicle, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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15. Vue de plan du devant du véhicule d'essai, avant essai.
Over view of the front part of the test vehicle, pre-test.

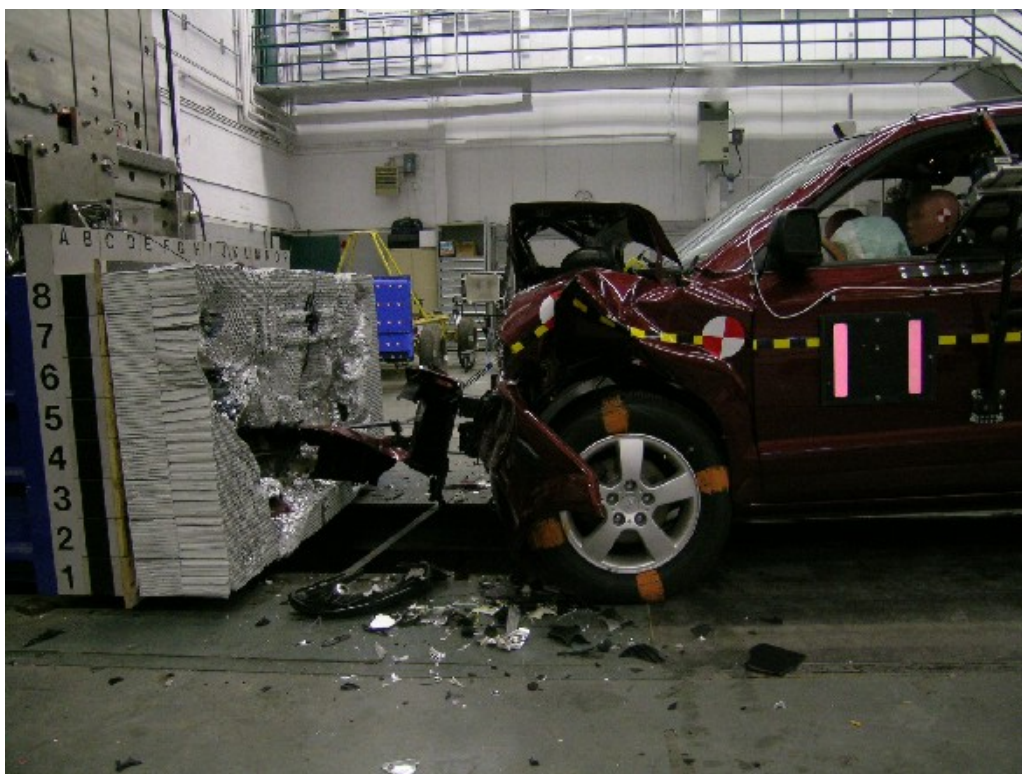


16. Vue de plan du devant du véhicule d'essai, après essai.
Over view of the front part of the test vehicle, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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17. Vue côté gauche de l'avant du véhicule d'essai, avant essai.
Left side view of front of test vehicle, pre-test.



18. Vue côté gauche de l'avant du véhicule d'essai, après essai.
Left side view of front of test vehicle, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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19. Vue côté droit de l'avant du véhicule d'essai, avant essai.
Right side view of front of test vehicle, pre-test.



20. Vue côté droit de l'avant du véhicule d'essai, après essai.
Right side view of front of test vehicle, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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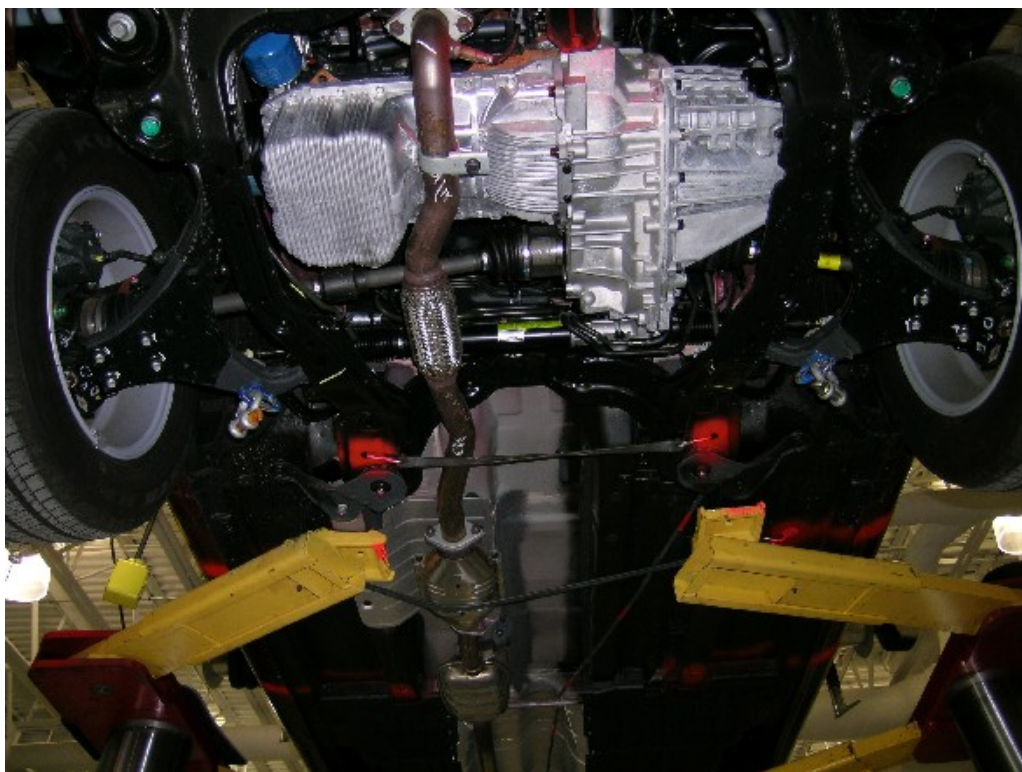


21. Vue du compartiment moteur du véhicule d'essai, avant essai.
Engine compartment view of the vehicle, pre-test.



22. Vue du compartiment moteur du véhicule d'essai, après essai.
Engine compartment view of the vehicle, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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23. Vue du dessous du compartiment moteur, avant essai.
Under view of the engine compartment , pre-test.



24. Vue du dessous du compartiment moteur, après essai.
Under view of the engine compartment , post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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25. Position du conducteur, avant essai.
Driver's position, pre-test.



26. Position du conducteur, après essai.
Driver's position, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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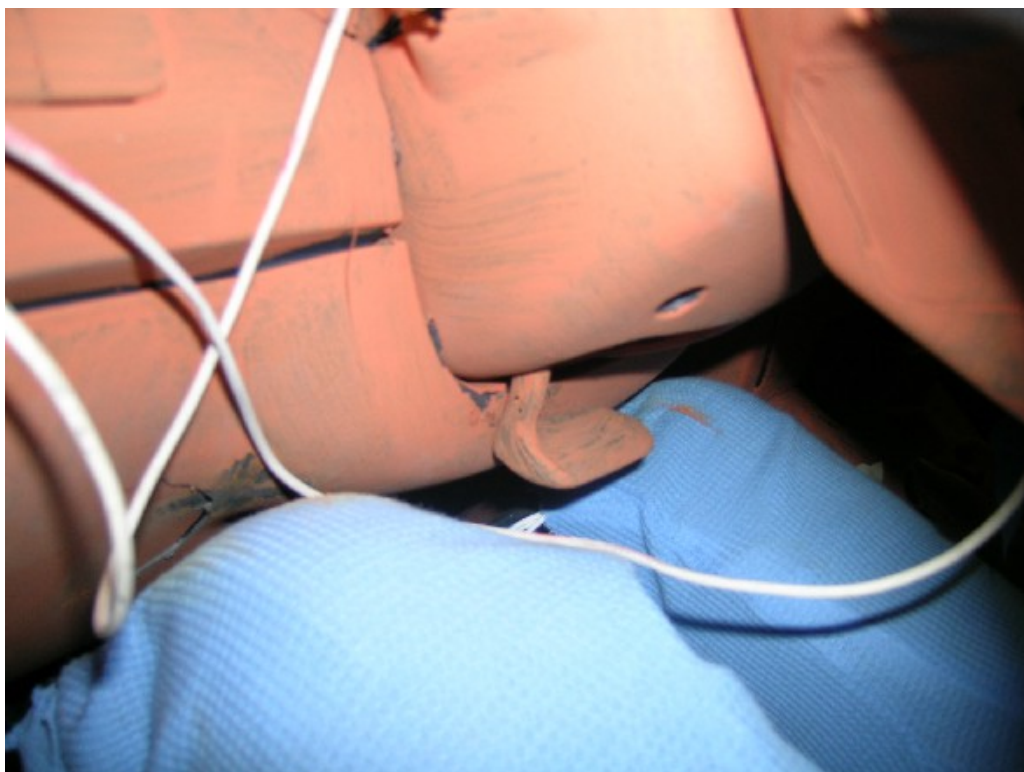


27. Point de contact de tête du conducteur, après essai.
Driver's head contact point, post-test.



28. Point de contact de tête du conducteur, après essai.
Driver's head contact point, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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**29. Point de contact des genoux du conducteur, après essai.
Driver's knees contact point, post-test.**

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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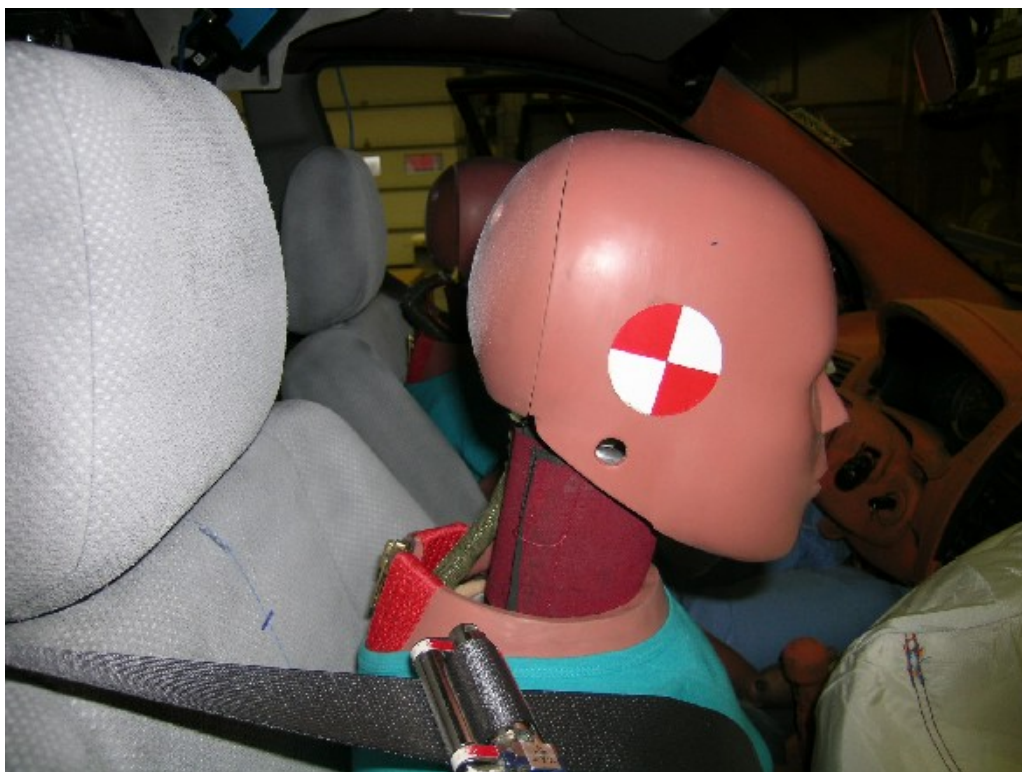


30. Position du passager, avant essai.
Passenger's position, pre-test.



31. Position du passager, après essai.
Passenger's position, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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32. Point de contact de tête du passager, après essai.
Passenger's head contact point, post-test.



33. Point de contact de tête du passager, après essai.
Passenger's head contact point, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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**34. Point de contact des genoux du passager, après essai.
Passenger's knees contact point, post-test.**

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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35. Position du passager arrière droit, avant essai.
Rear right passenger's position, pre-test.



36. Position du passager arrière droit, après essai.
Rear right passenger's position, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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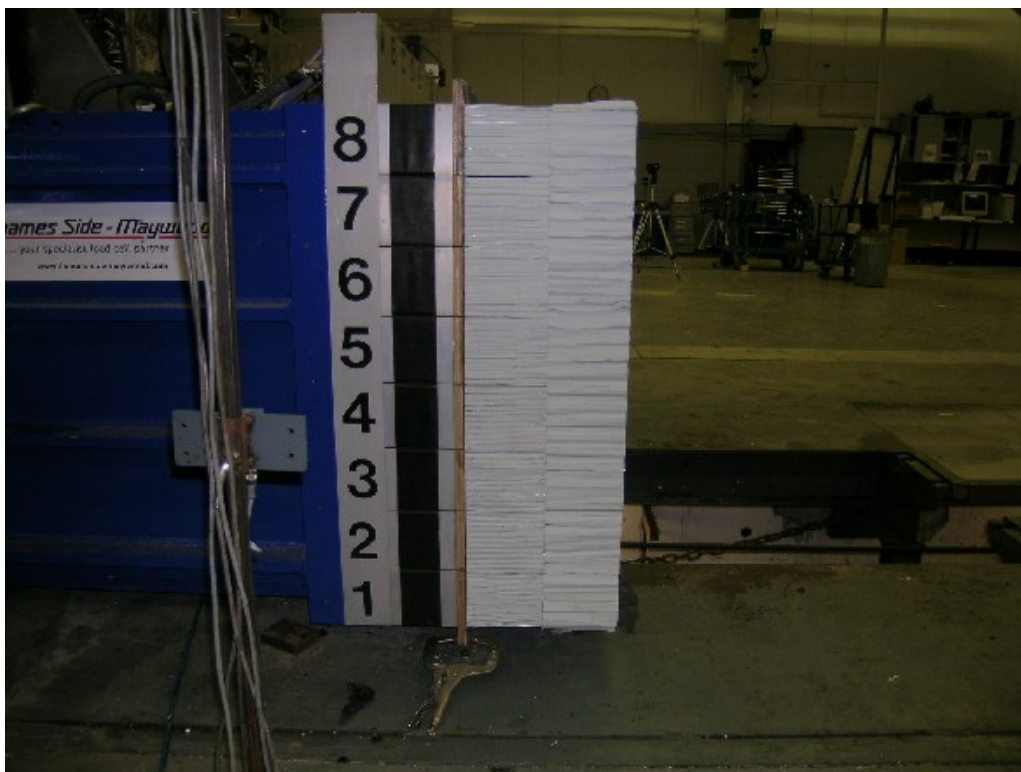


37. Position du passager arrière gauche, avant essai.
Rear left passenger's position, pre-test.

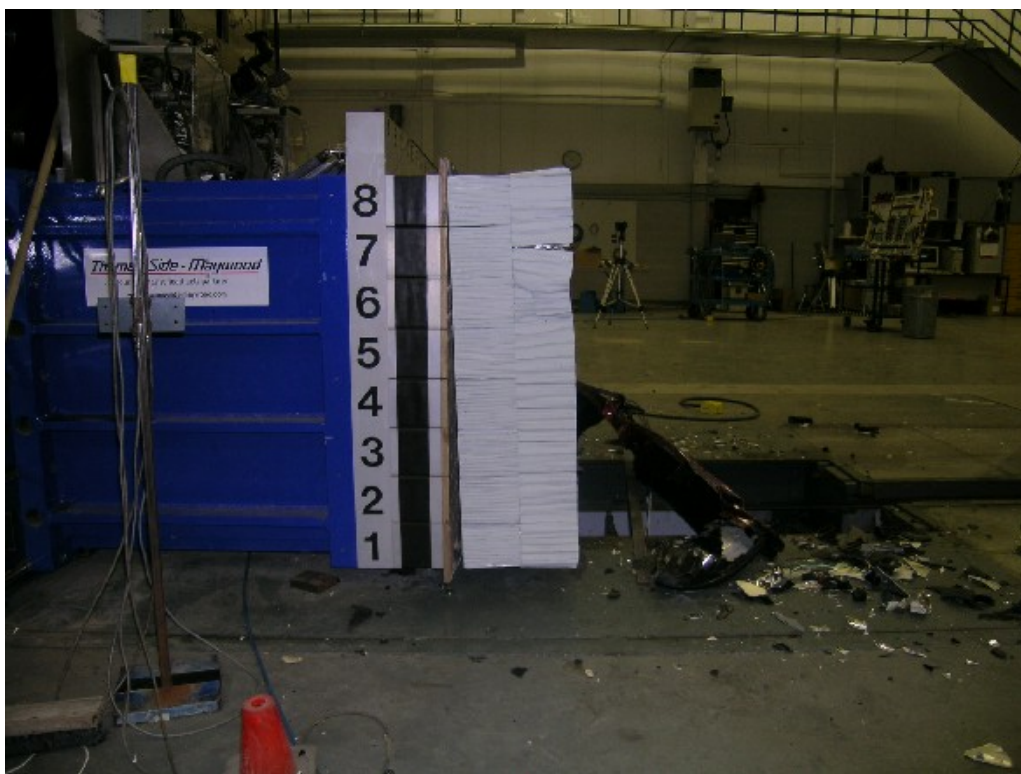


38. Position du passager arrière gauche, après essai.
Rear left passenger's position, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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39. Vue latérale droit de la Face Déformable, avant essai.
Right side view of the Deformable Face, pre-test.



40. Vue latérale droit de la Face Déformable, après essai.
Right side view of the Deformable Face, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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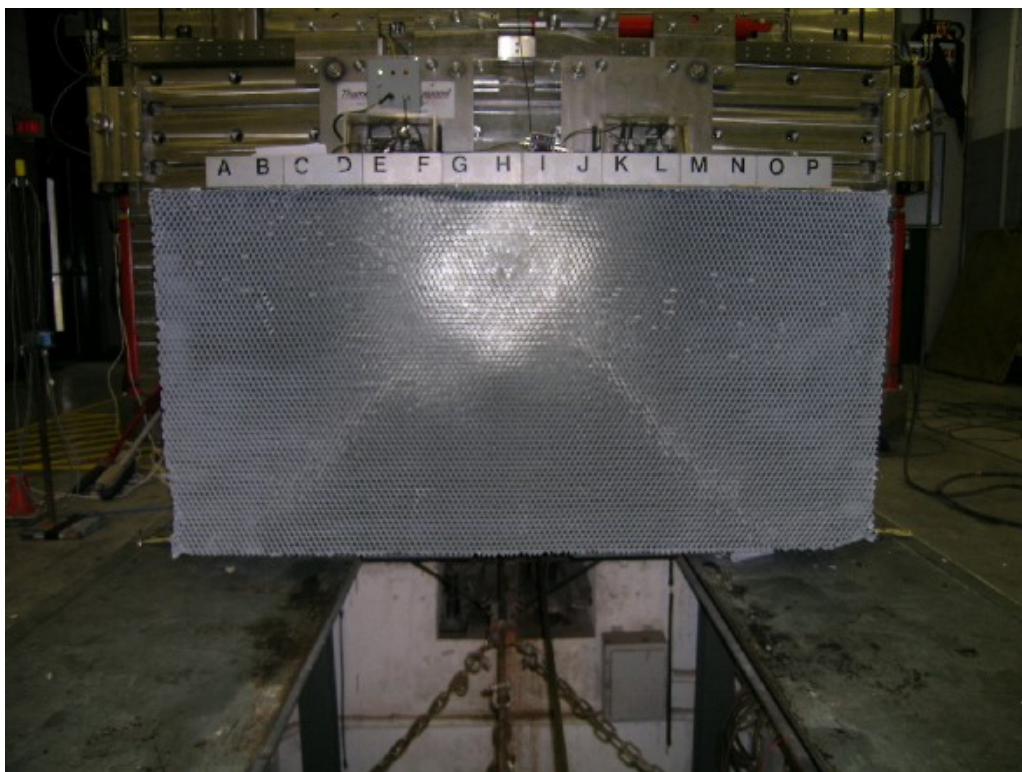


41. Vue latérale gauche de la Face Déformable, avant essai.
Left side view of the Deformable Face, pre-test.

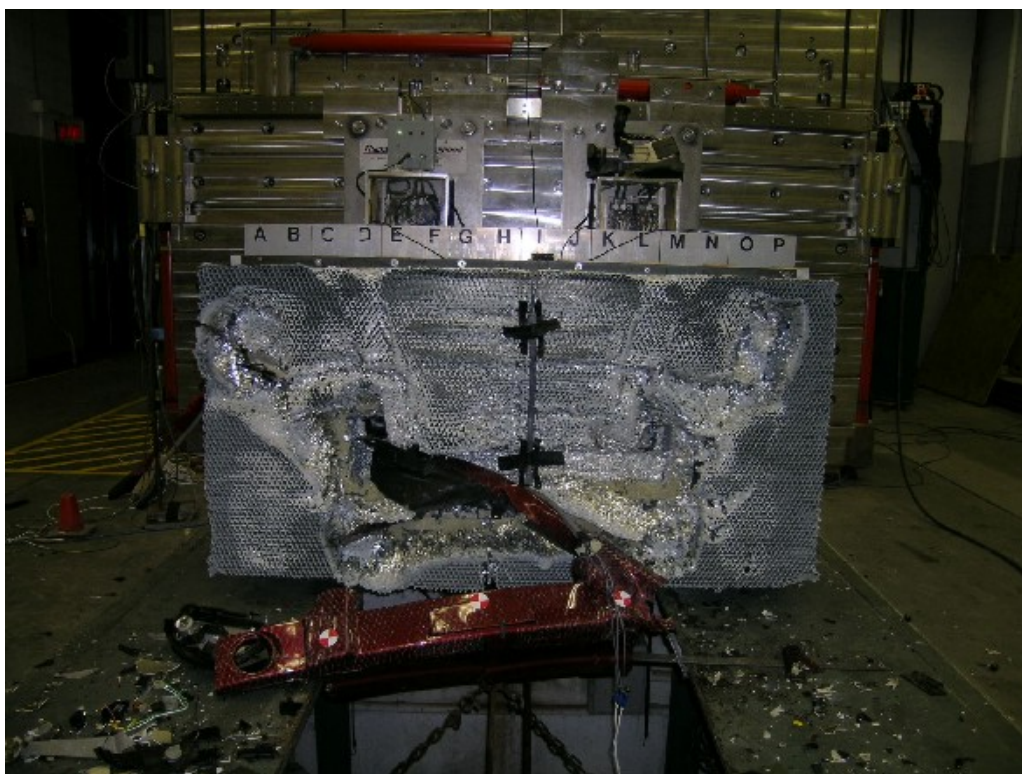


42. Vue latérale gauche de la Face Déformable, après essai.
Left side view of the Deformable Face, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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43. Vue avant de la Face Déformable, avant essai.
Front view of the Deformable Face, pre-test.



44. Vue avant de la Face Déformable, après essai.
Front view of the Deformable Face, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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45. Vue $\frac{3}{4}$ droit de la Face Déformable, avant essai.
 $\frac{3}{4}$ right view of the Deformable Face, pre-test.



46. Vue $\frac{3}{4}$ droit de la Face Déformable, après essai.
 $\frac{3}{4}$ right view of the Deformable Face, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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47. Vue $\frac{3}{4}$ gauche de la Face Déformable, avant essai.
 $\frac{3}{4}$ left view of the Deformable Face, pre-test.



48. Vue $\frac{3}{4}$ gauche de la Face Déformable, après essai.
 $\frac{3}{4}$ left view of the Deformable Face, post-test.

Date de collision Crash date	2005-11-30	Véhicule Vehicle	HYUNDAI TUCSON 2005	T.C. N° T.C.No	05-250
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49. Affichage du lecteur de vitesse.
Speed trap reading.

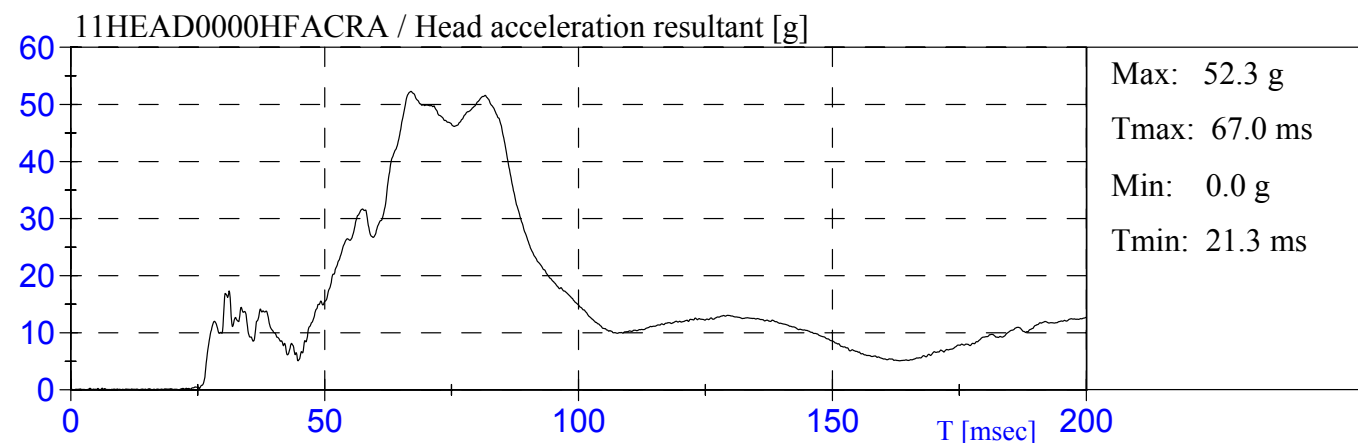
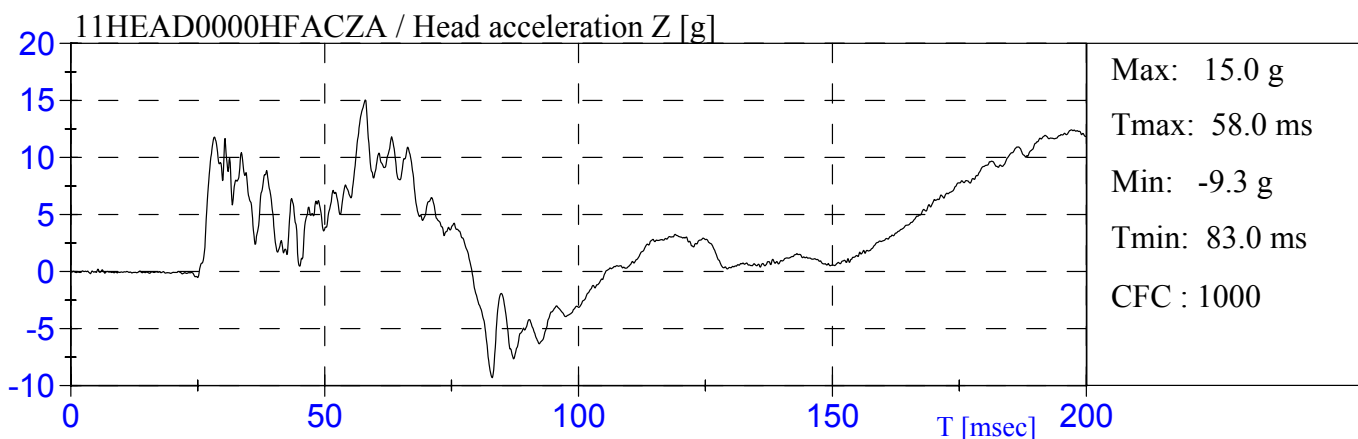
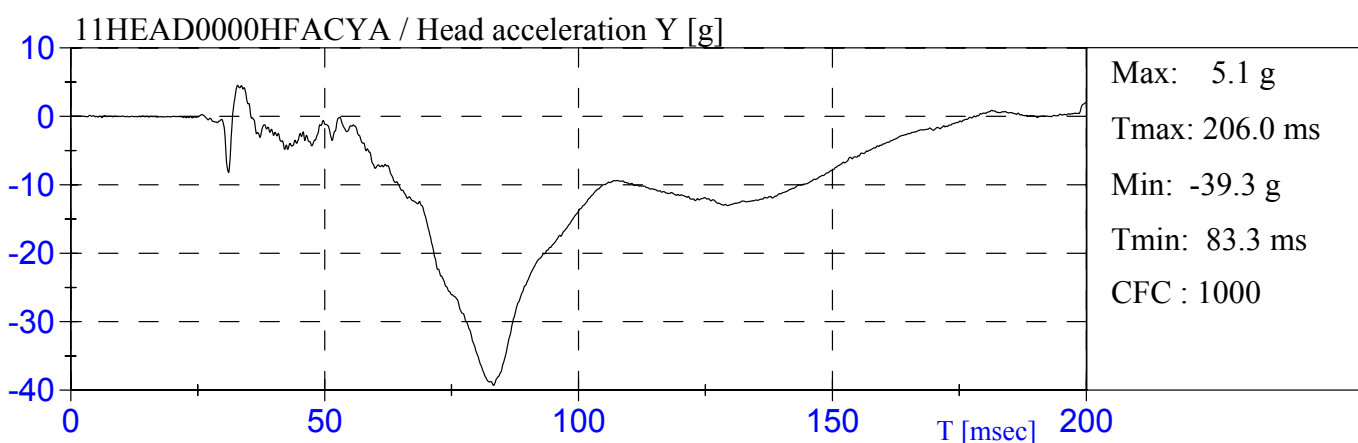
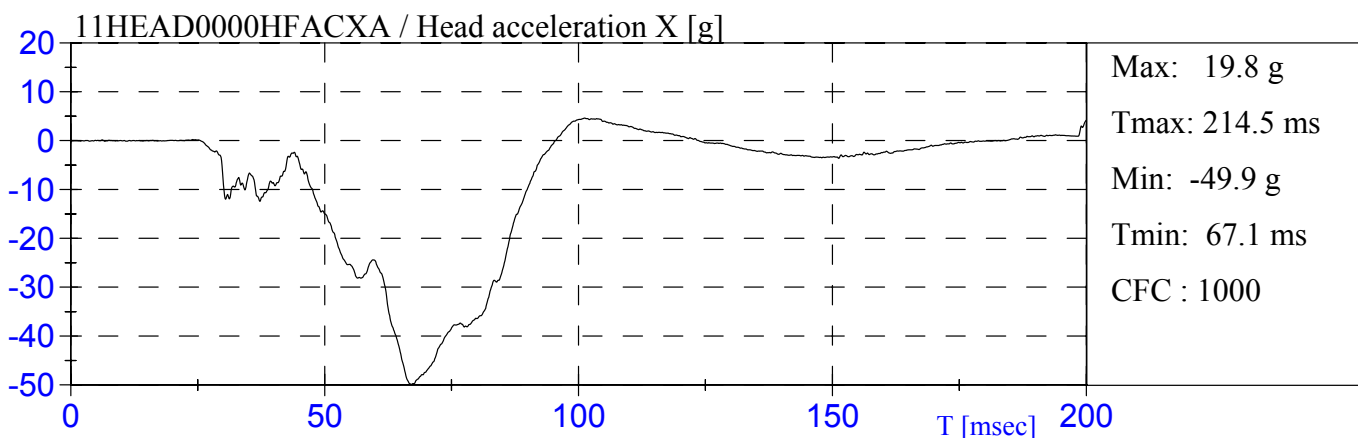
APPENDICE / APPENDIX B

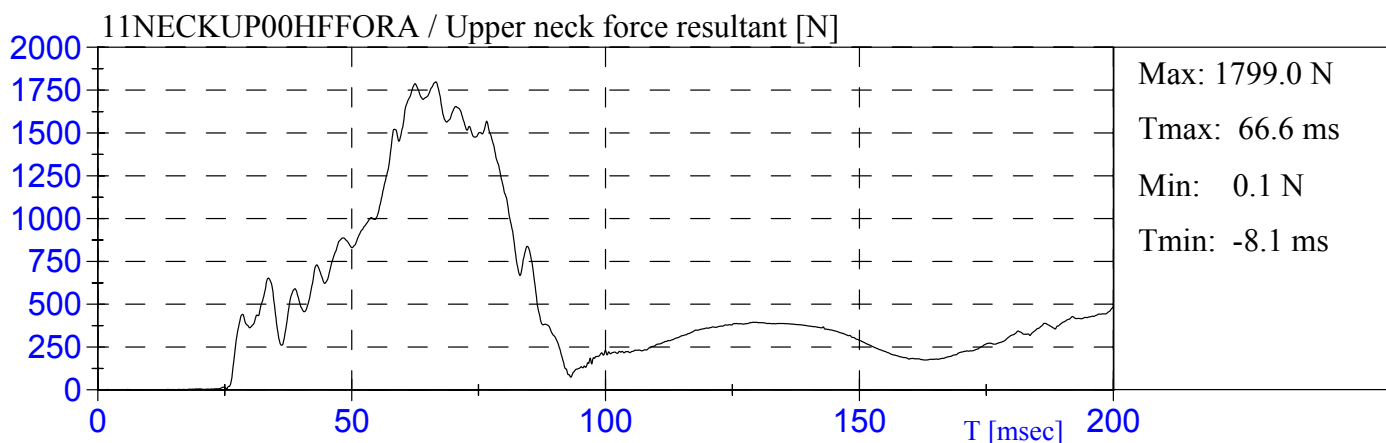
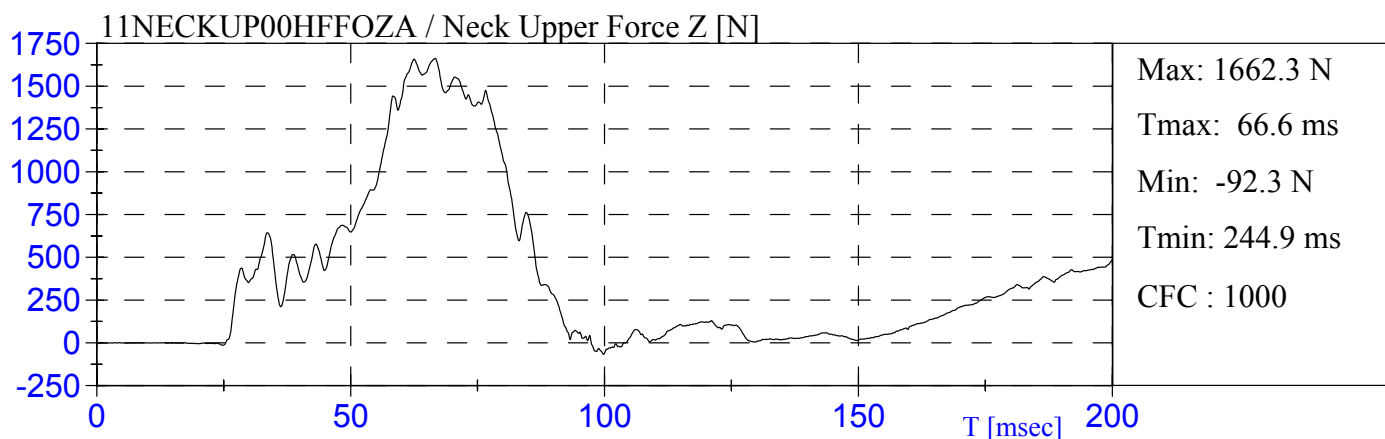
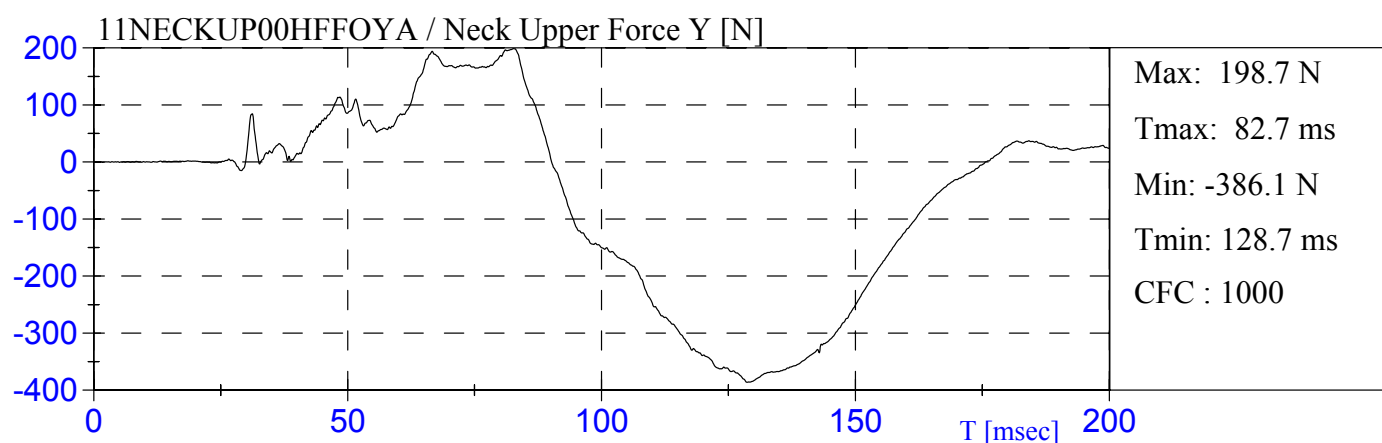
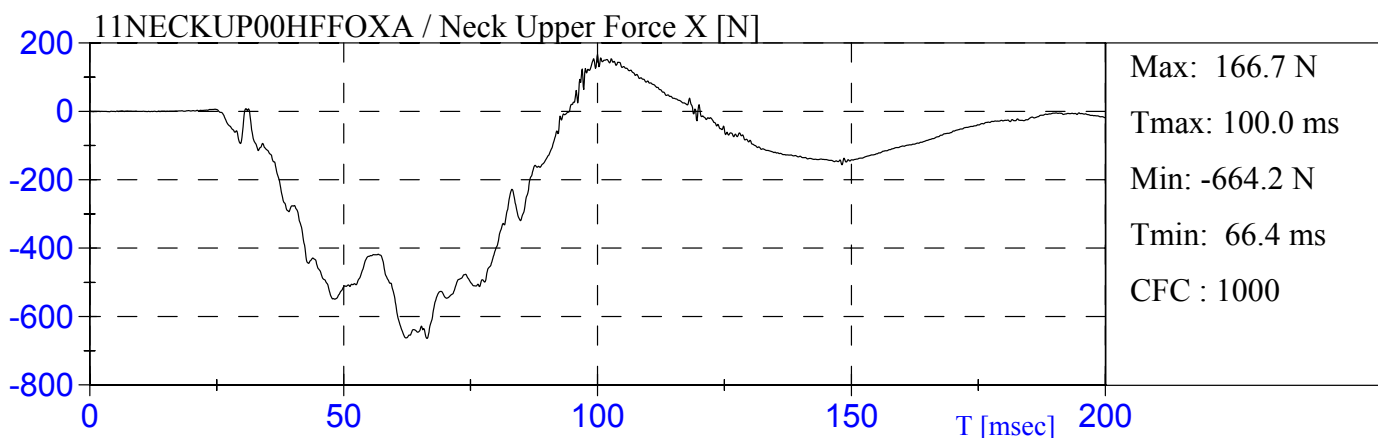
**DONNÉES GRAPHIQUES
GRAPHICAL DATA**

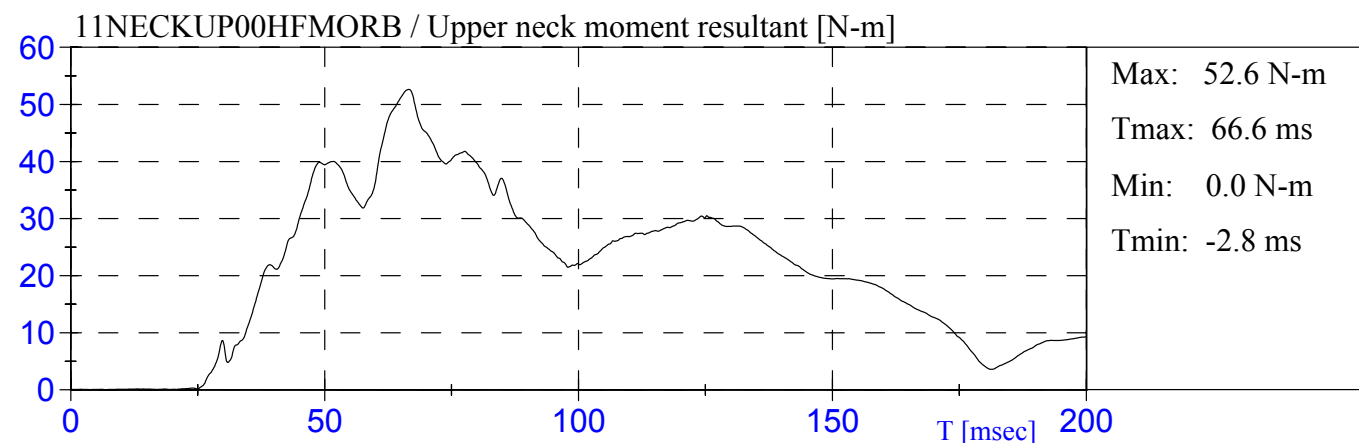
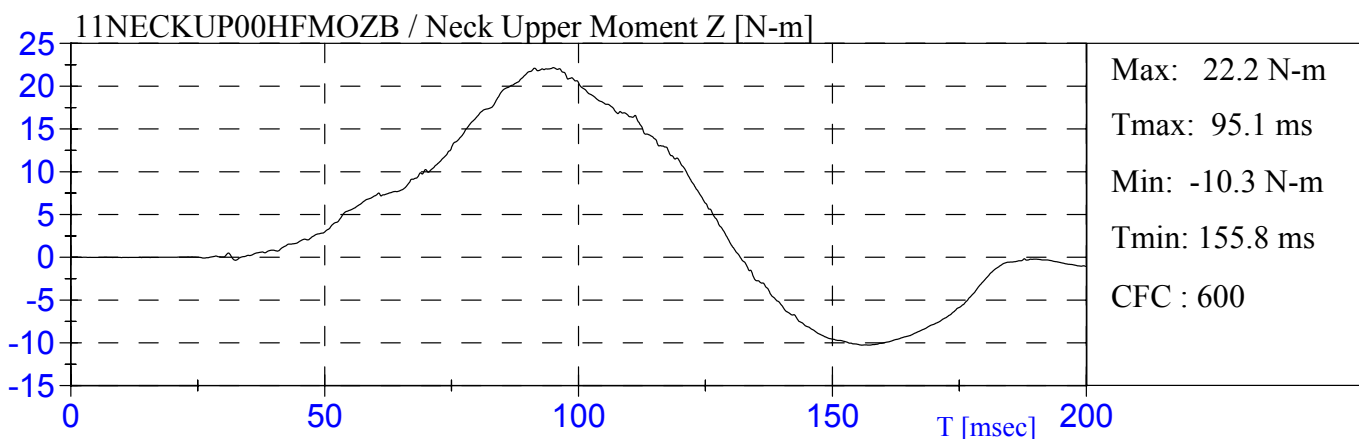
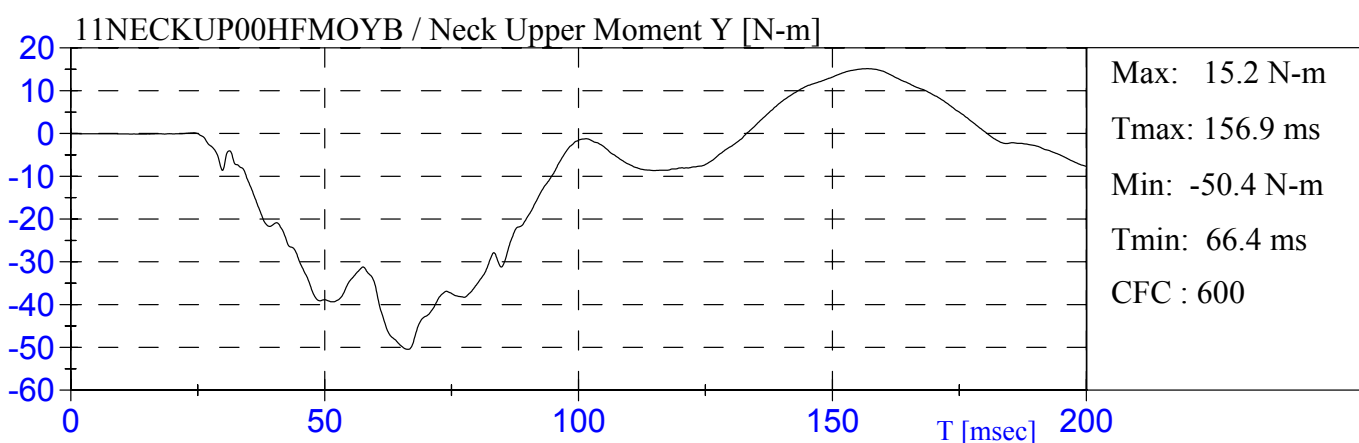
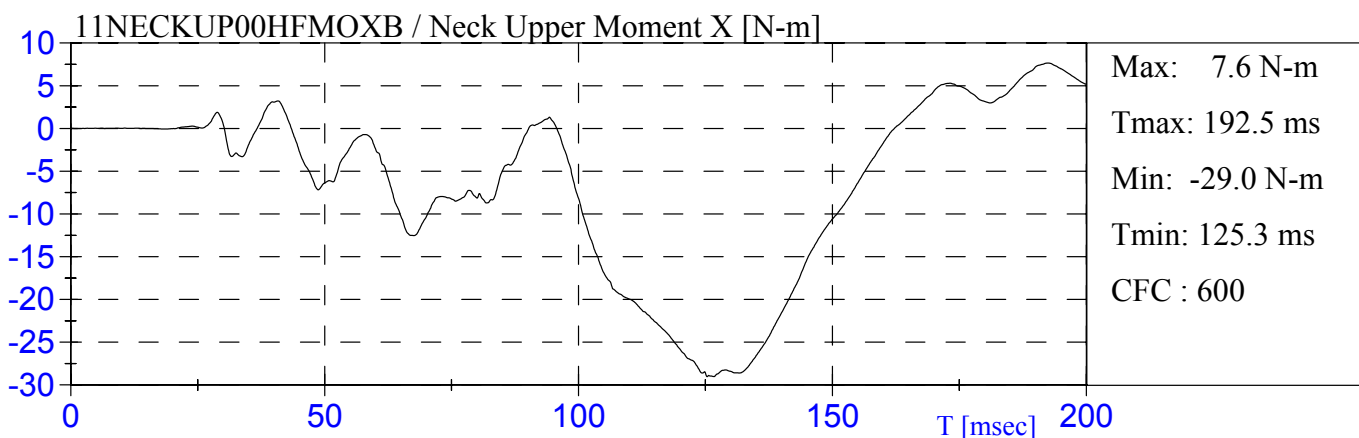


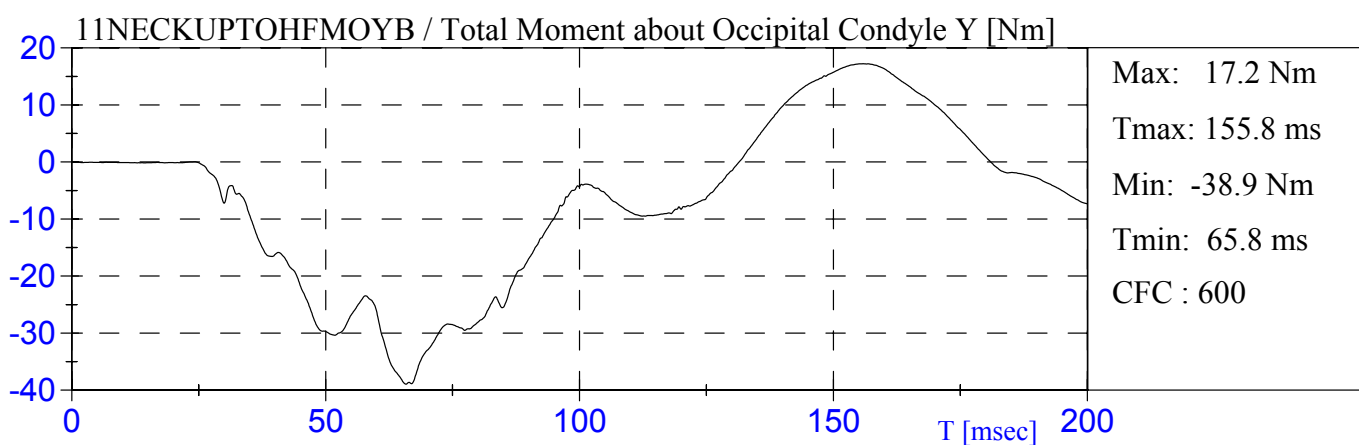
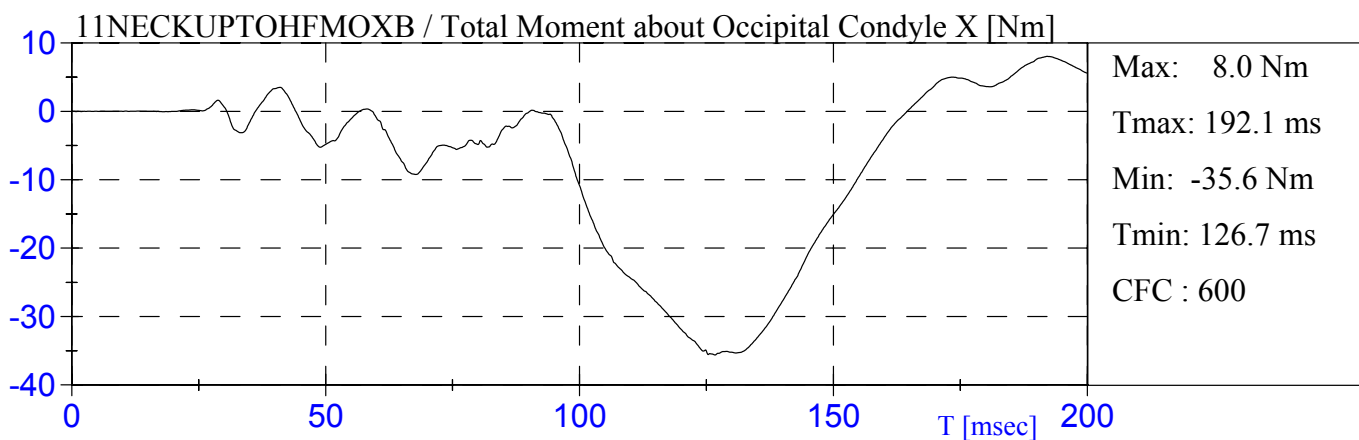
Nom du client Client Name	TRANSPORT CANADA
Type de véhicule Type of Vehicle	HYUNDAI TUCSON 2005
Numéro de TC Tc Number	TC05-250
Vitesse Speed	56 km/h
Numéro de contrat Contract No	06-6008
Acquisition de données selon Data Acquisition according to	SAE J211/1 MAR 95
Date de l'essai Test date	2005-11-30
Titre du projet Project Title	COLLISION DE RECHERCHE COLLISION FRONTALE RESEARCH COLLISION TEST FRONTAL CRASH
MANNEQUIN / DUMMY	

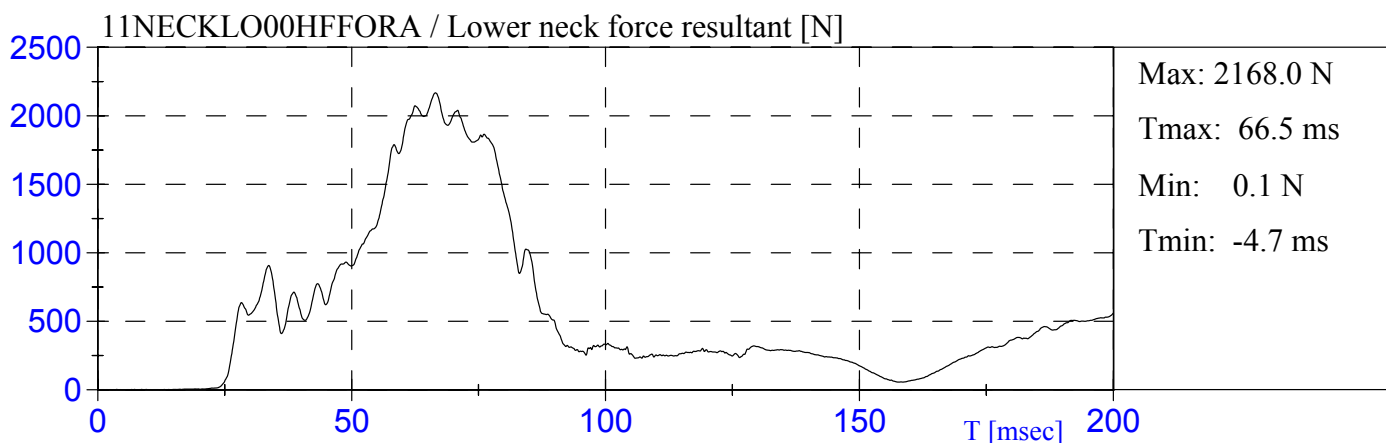
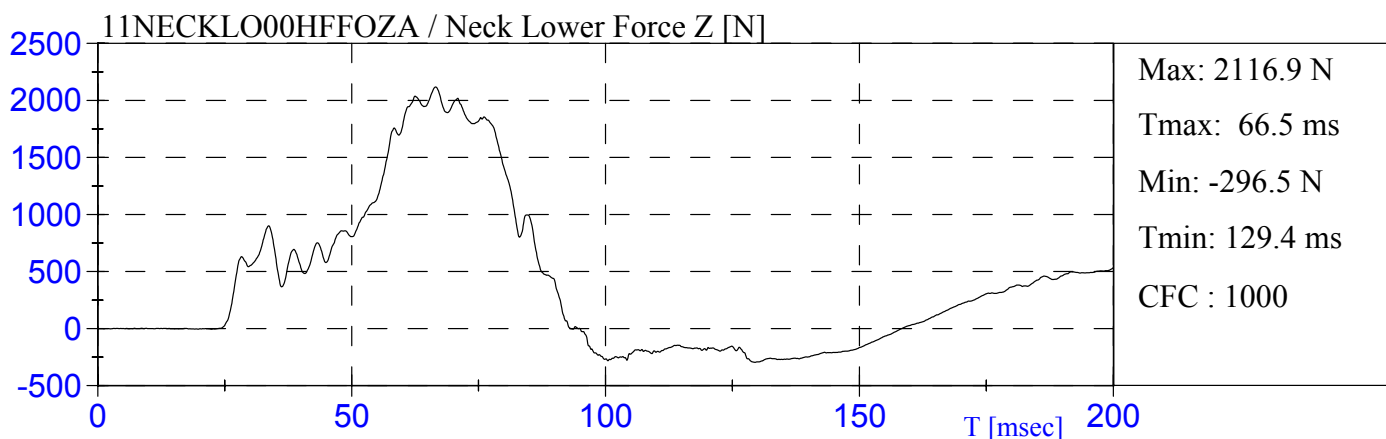
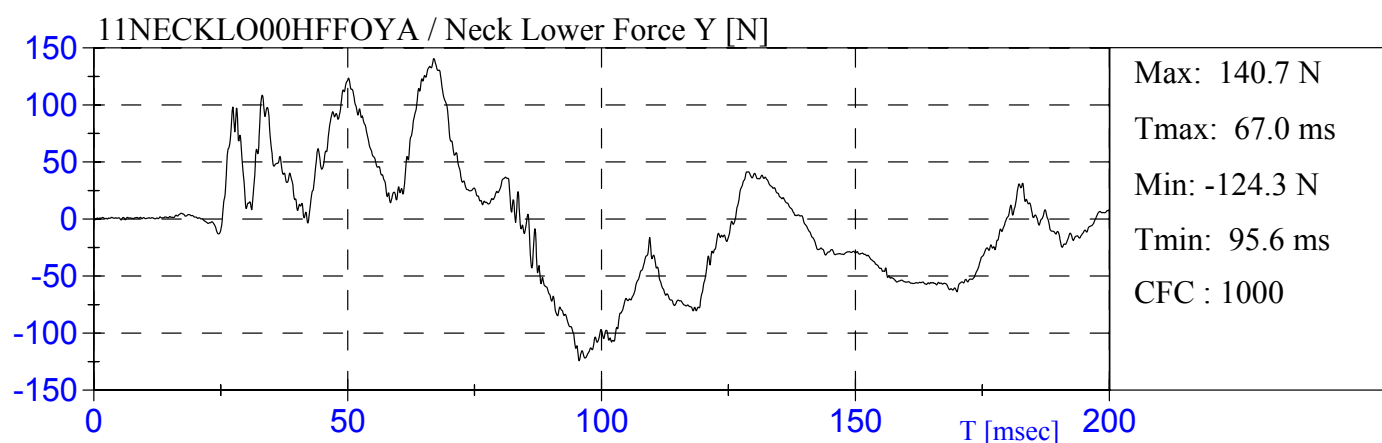
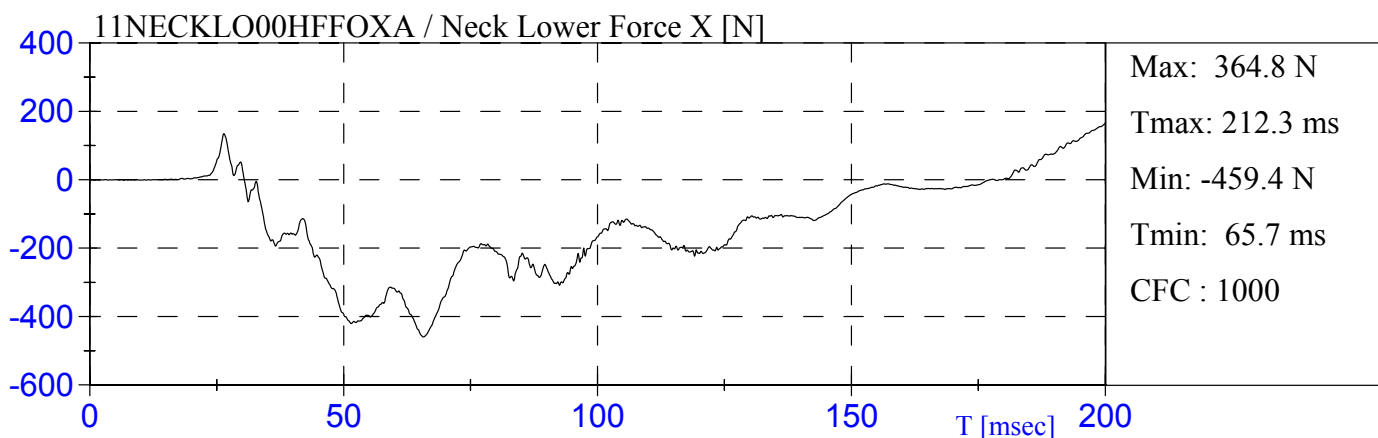
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HF		HF
Position 4	Position 5	Position 6
HF		HF
Position 7	Position 8	Position 9

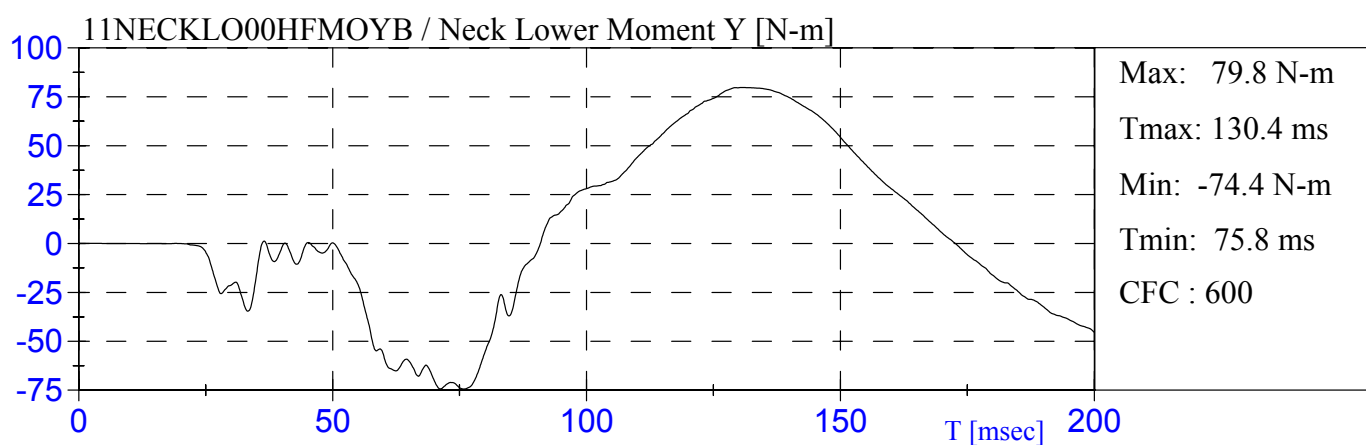
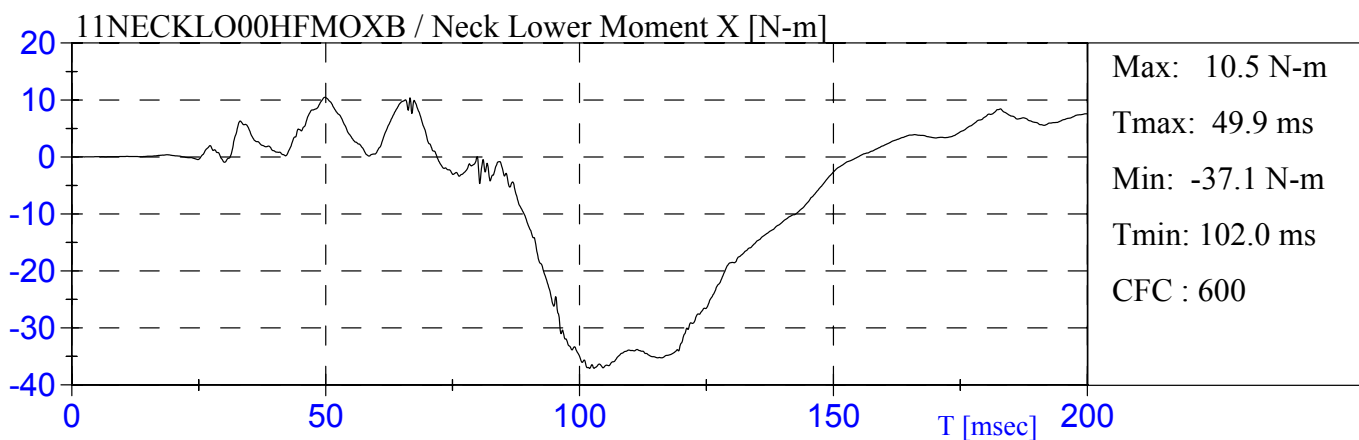


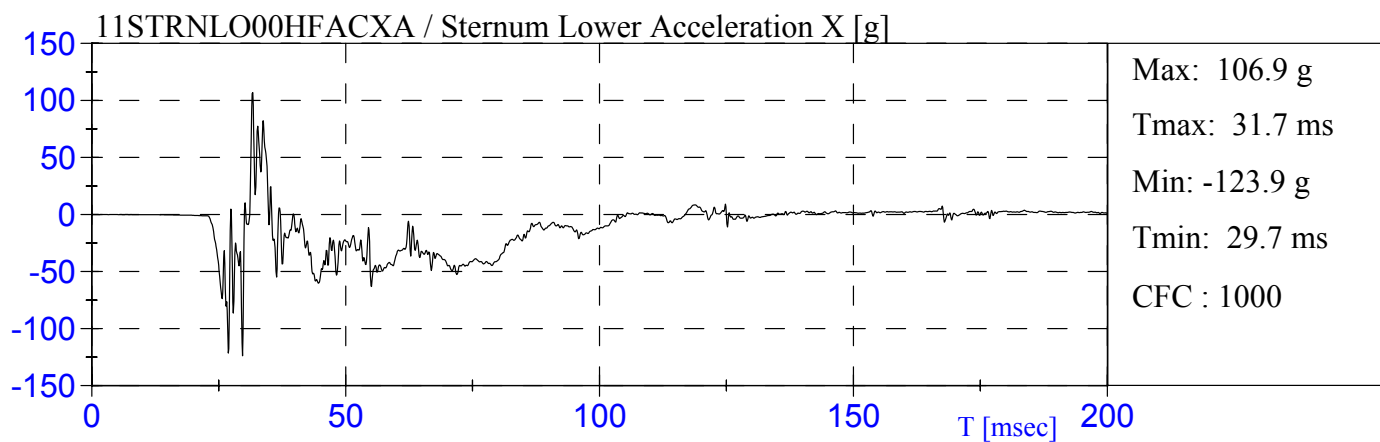
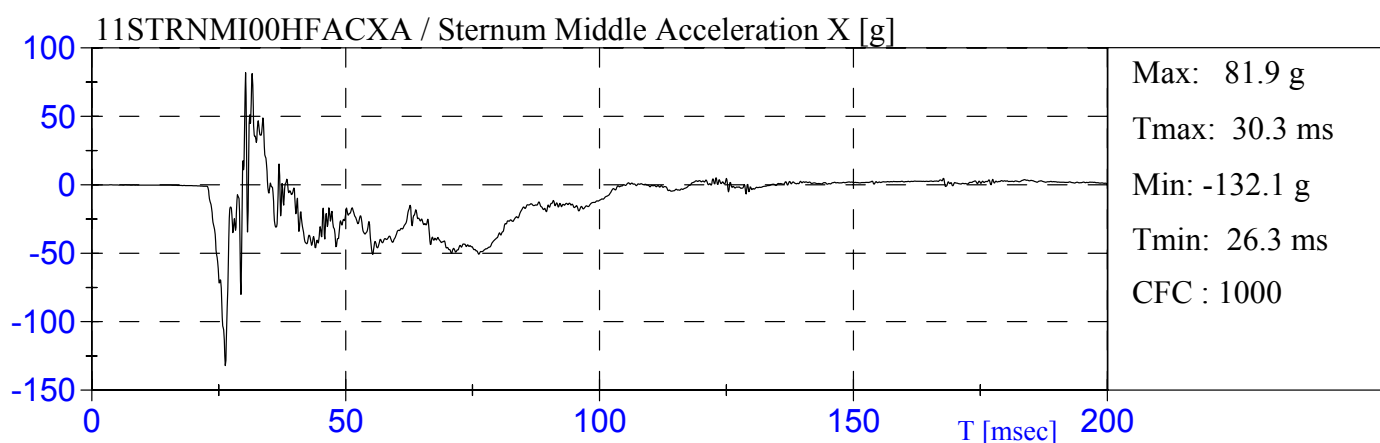
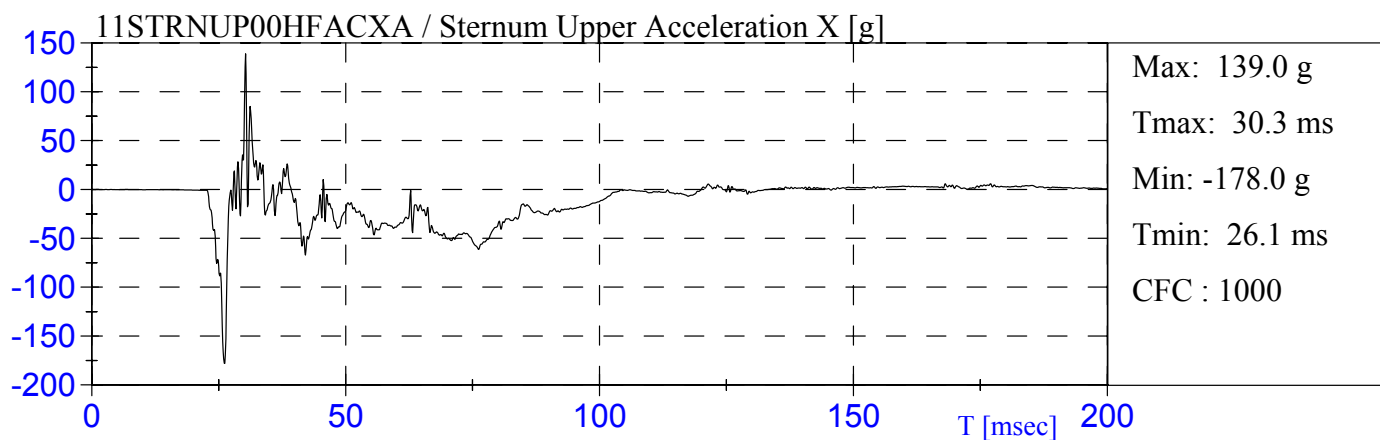


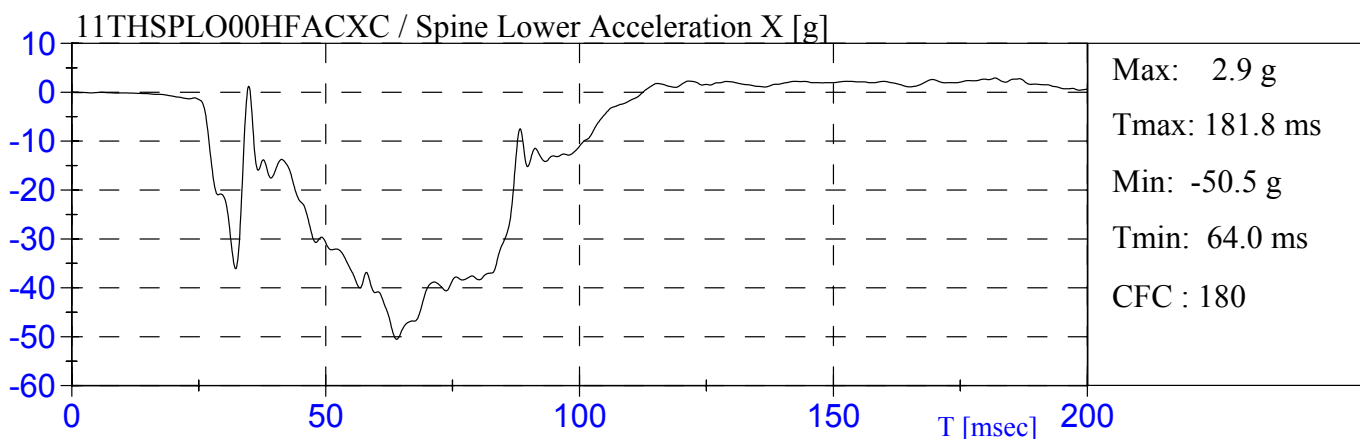
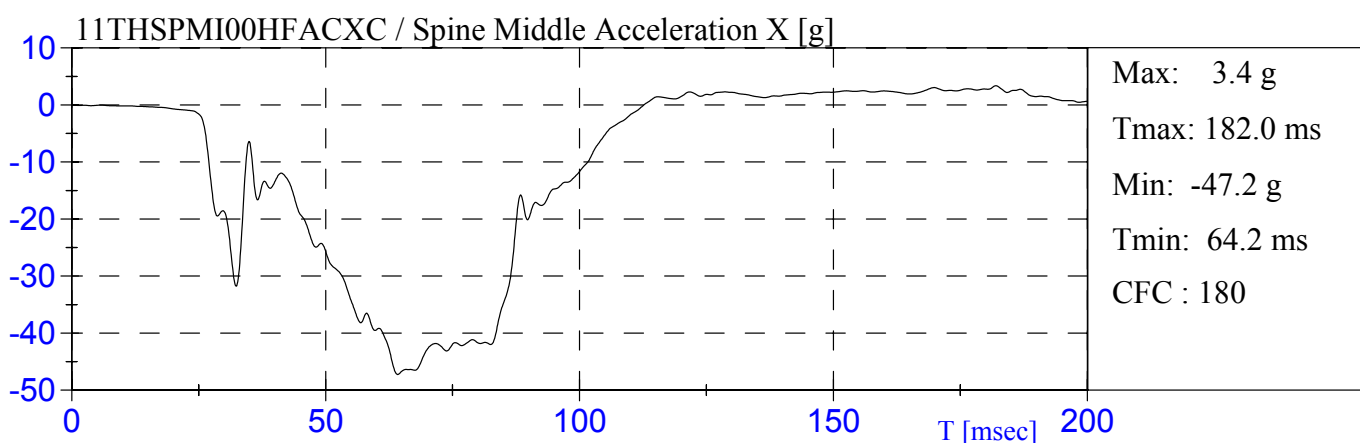
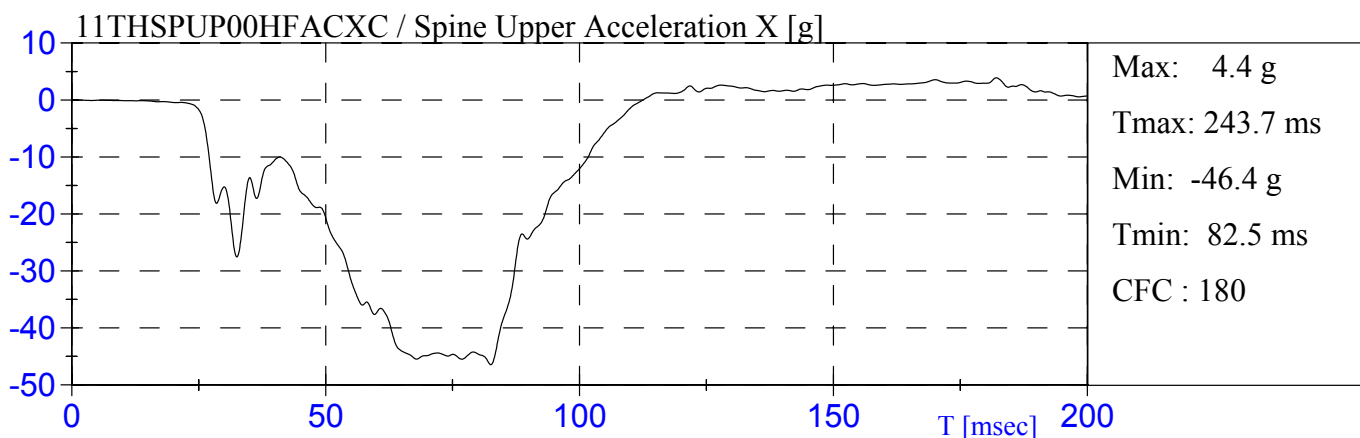


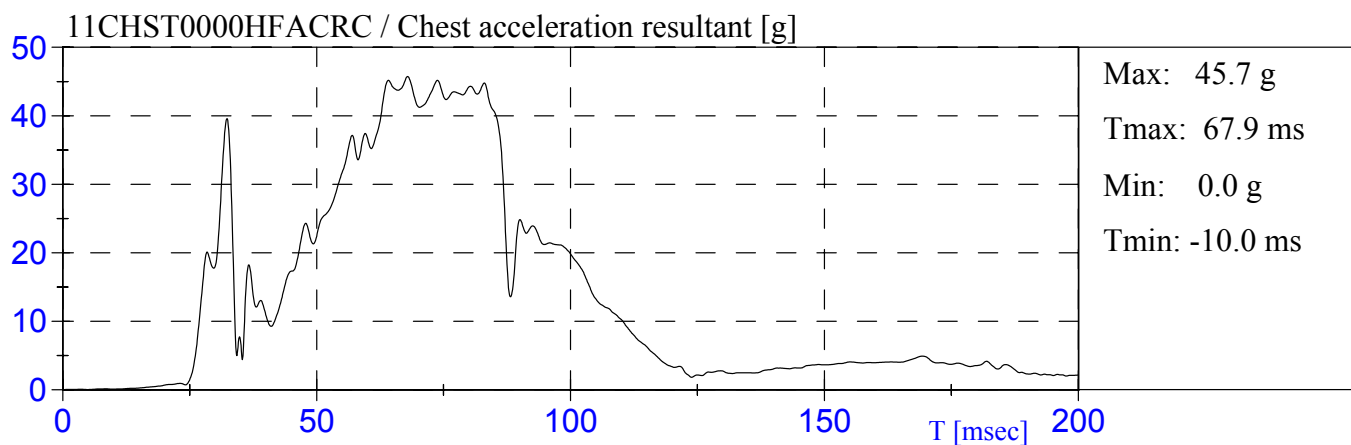
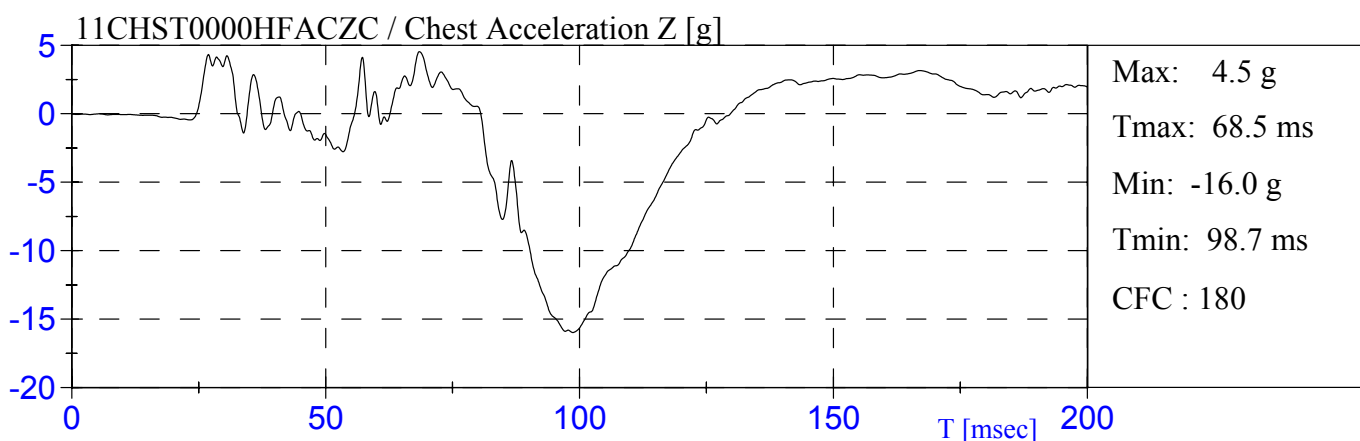
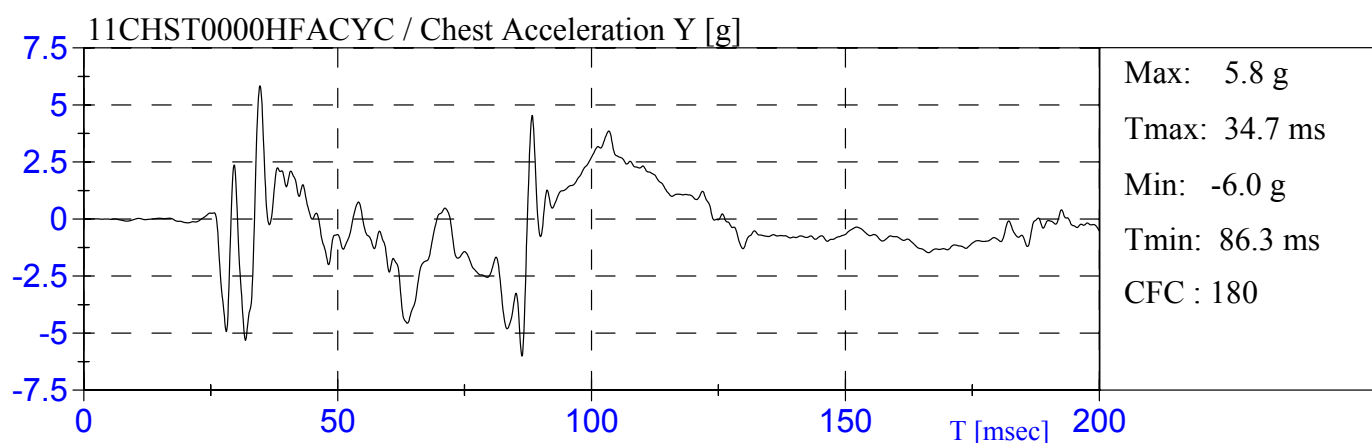
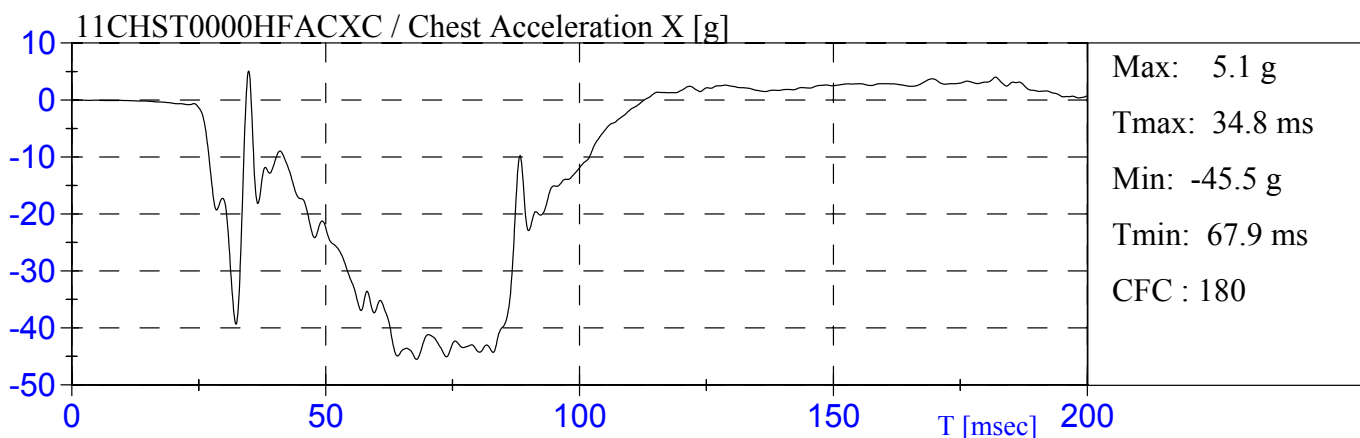


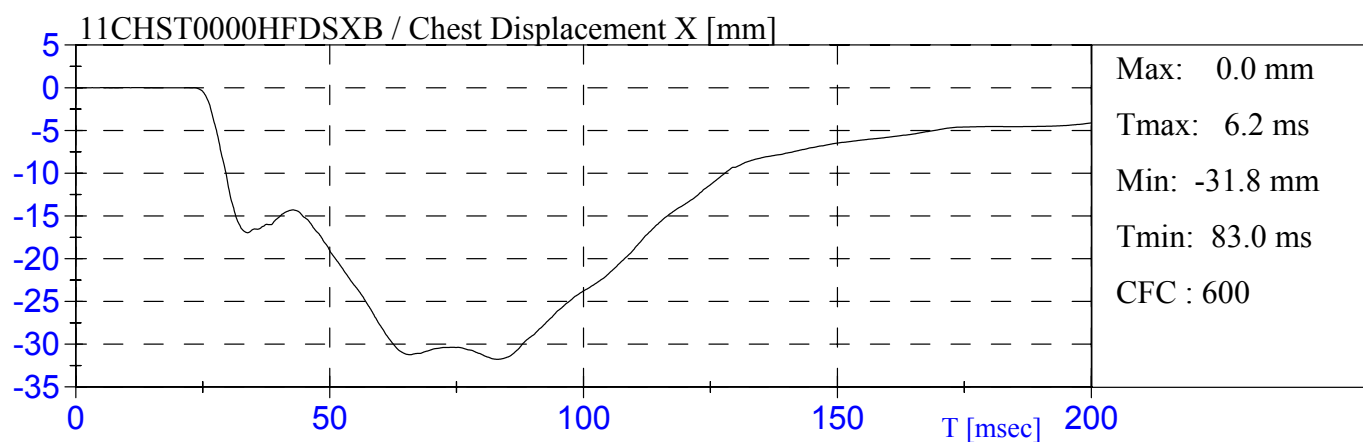


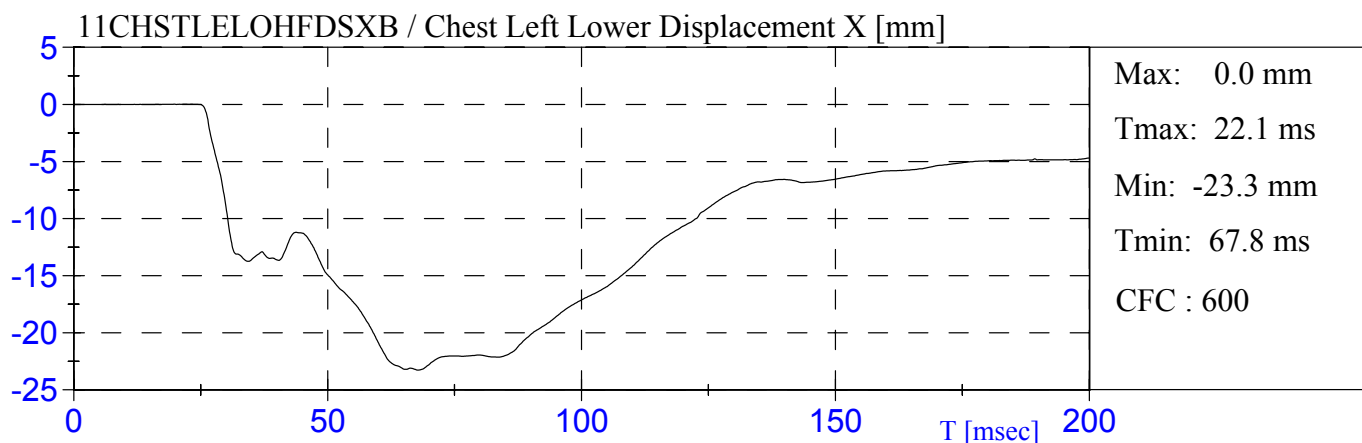
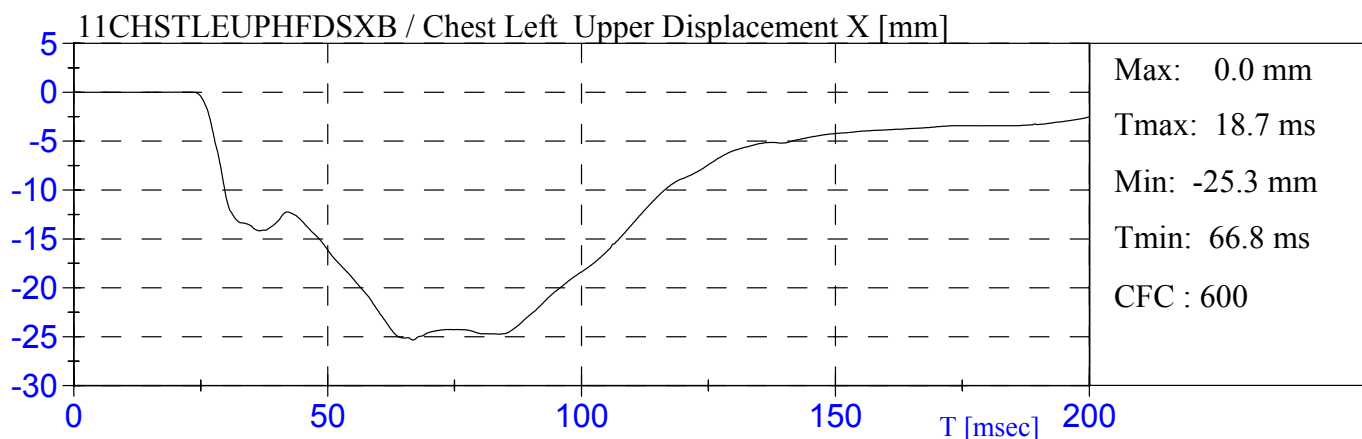
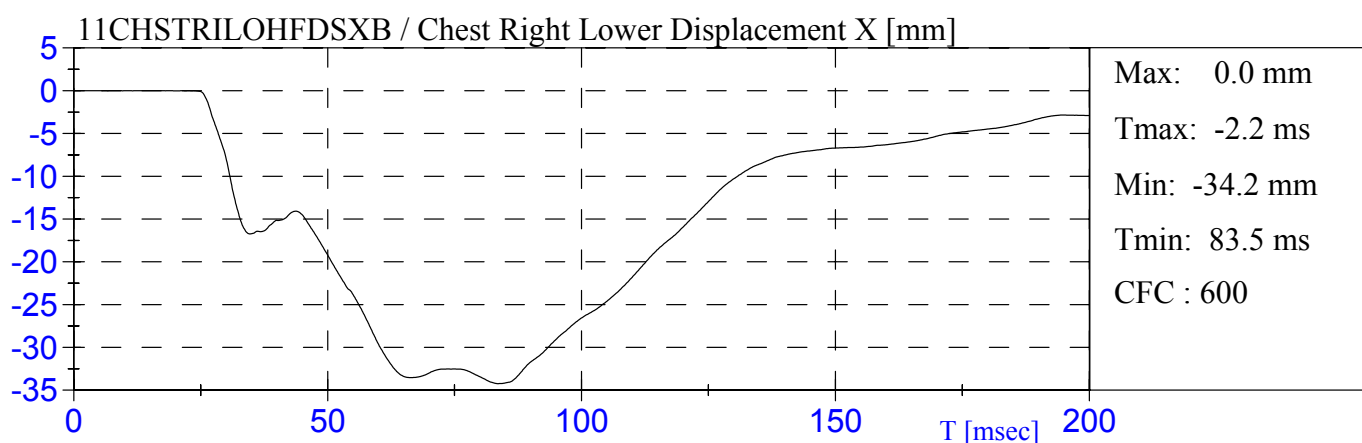
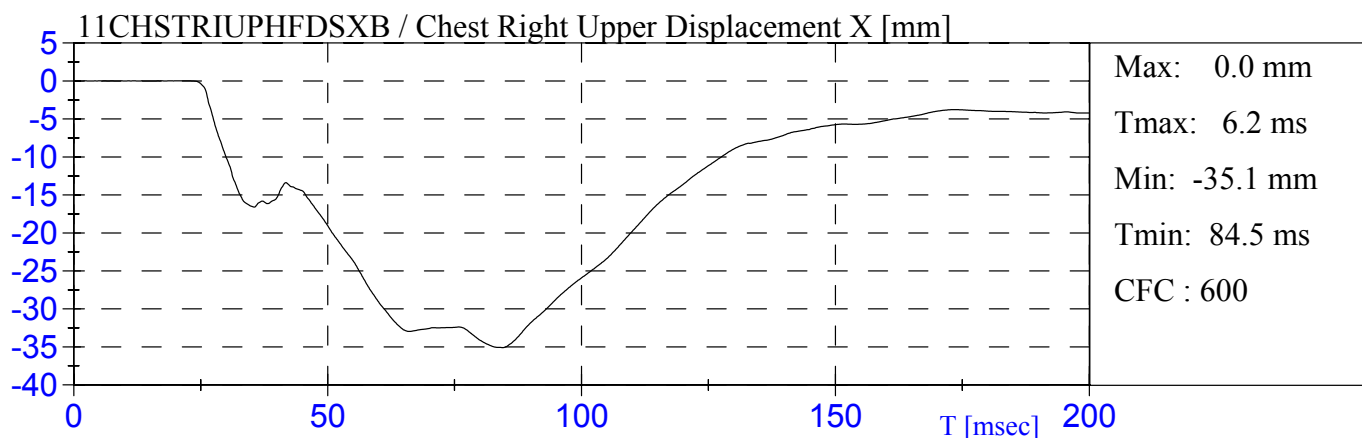


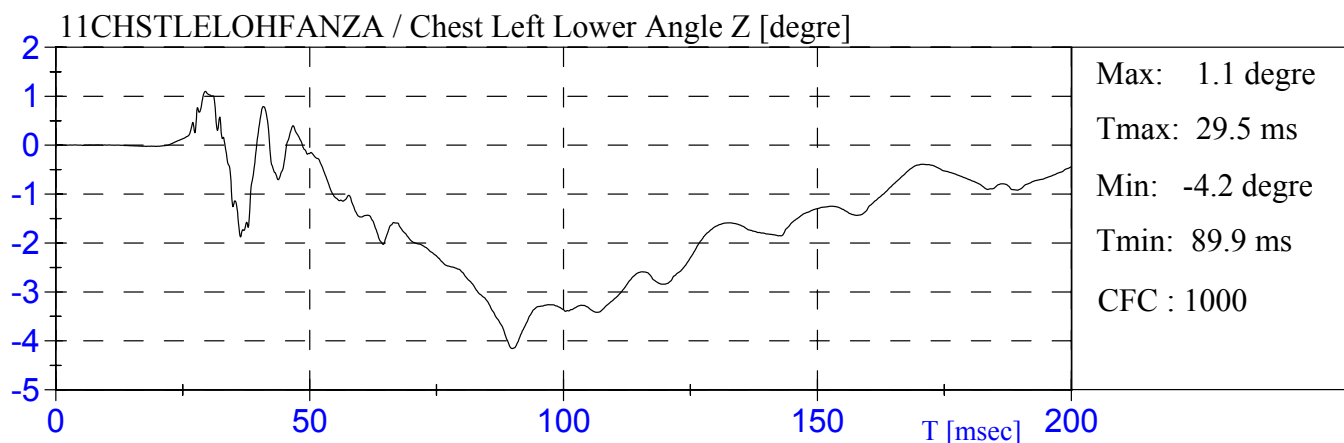
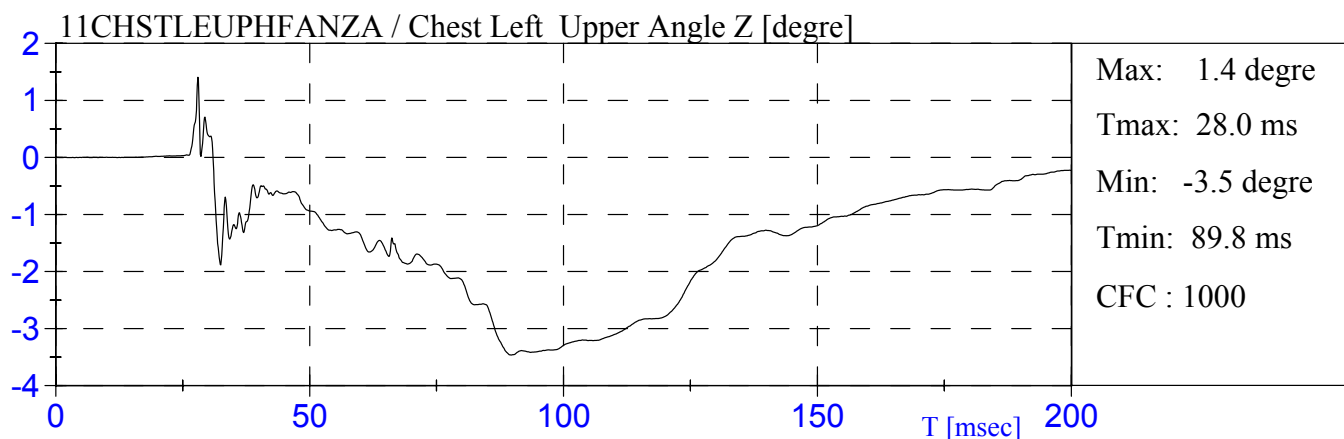
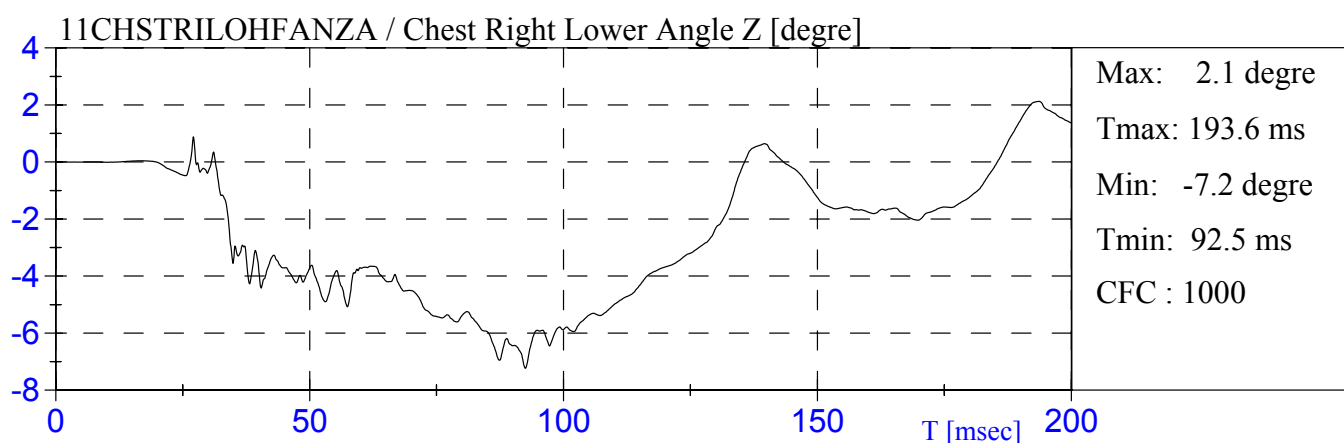
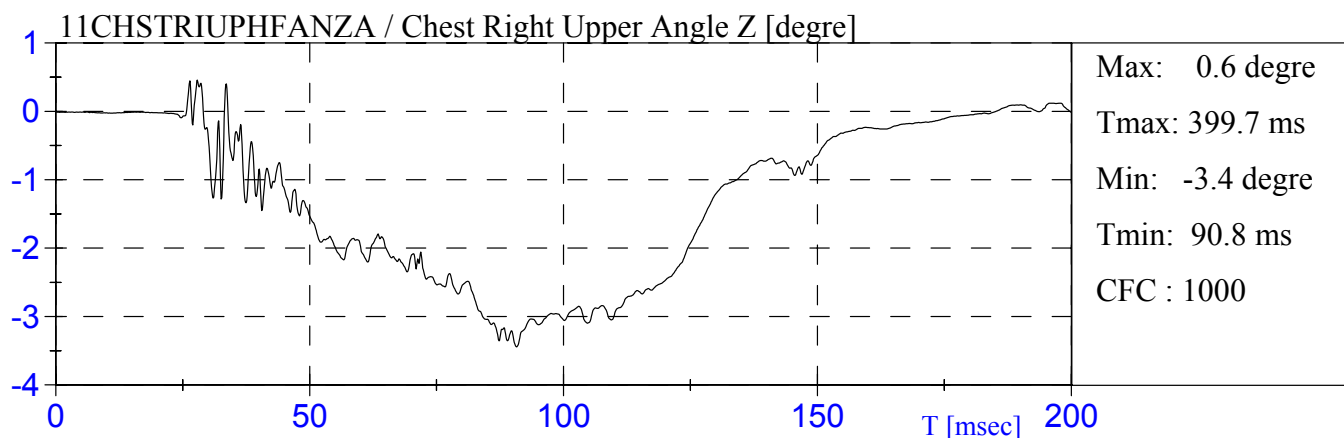


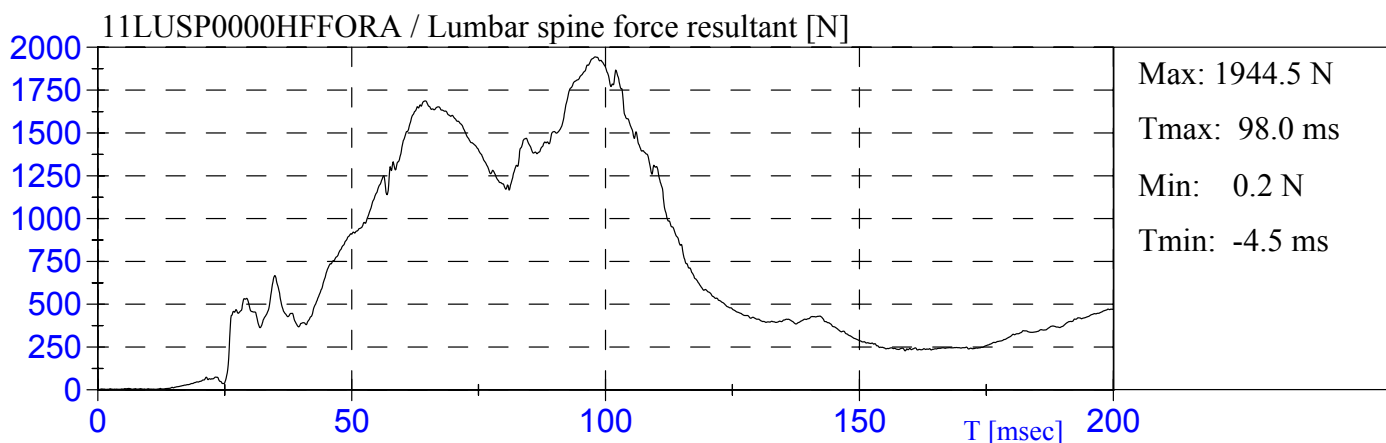
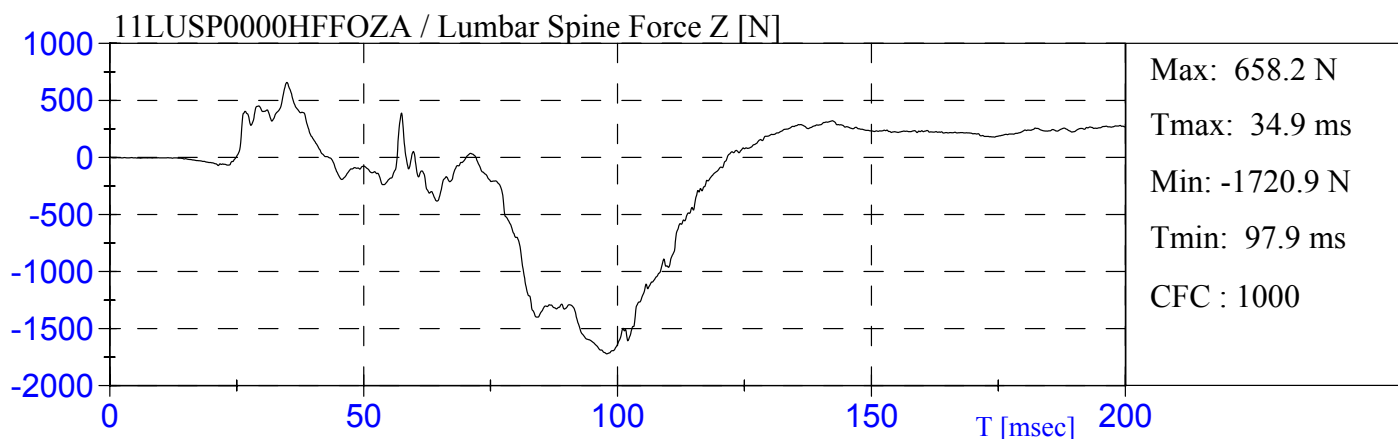
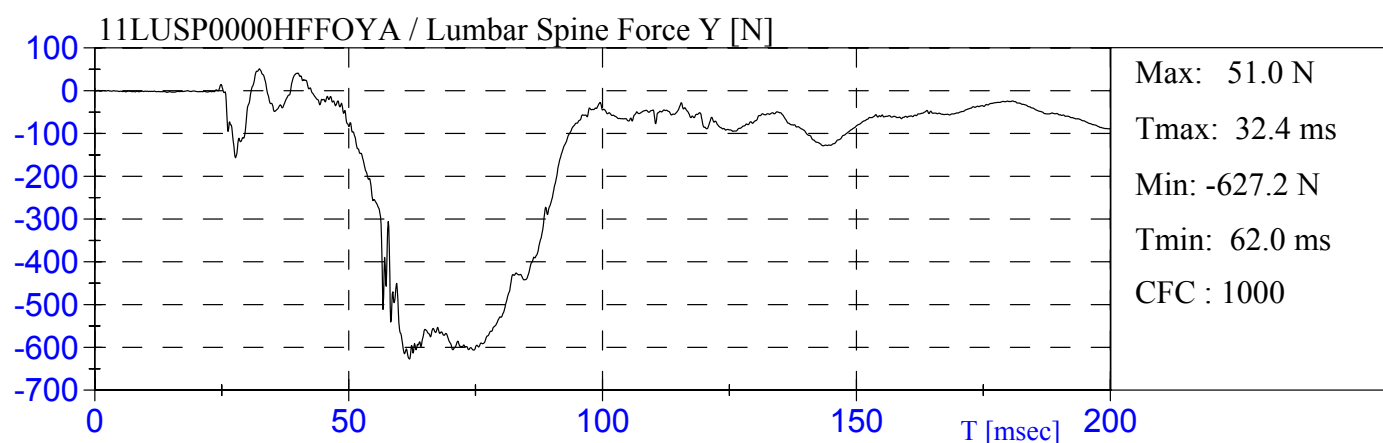
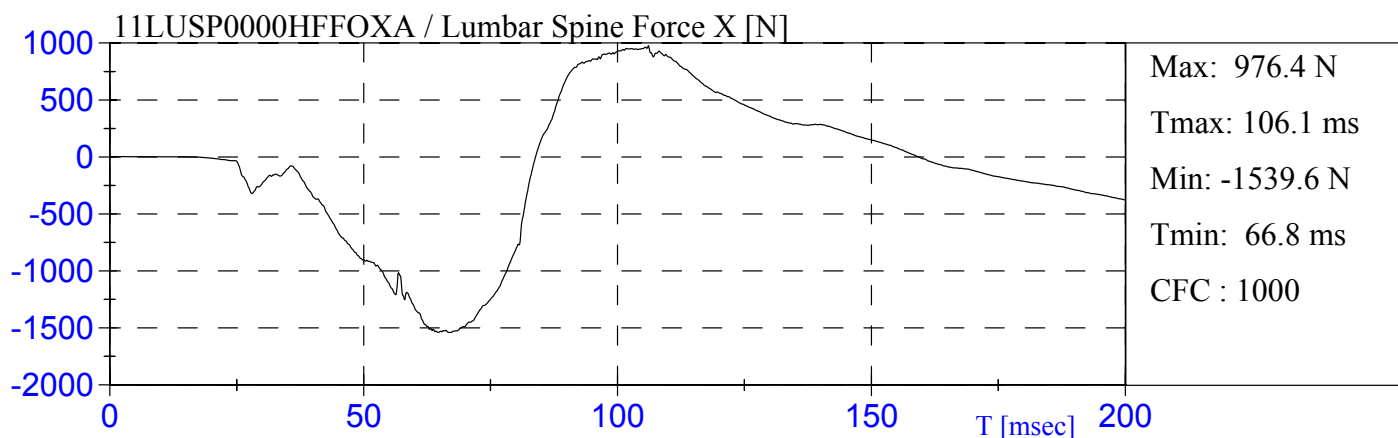


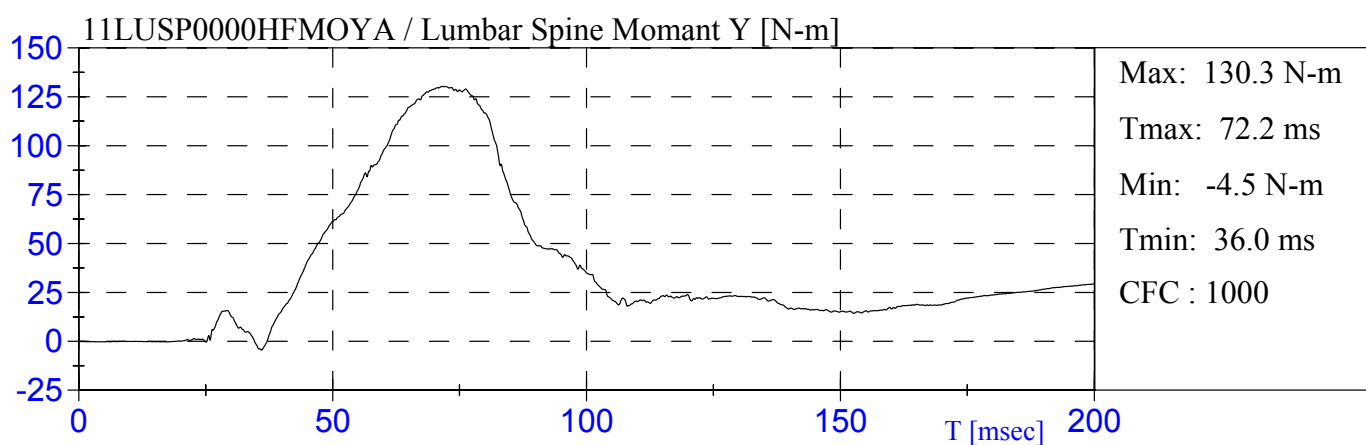
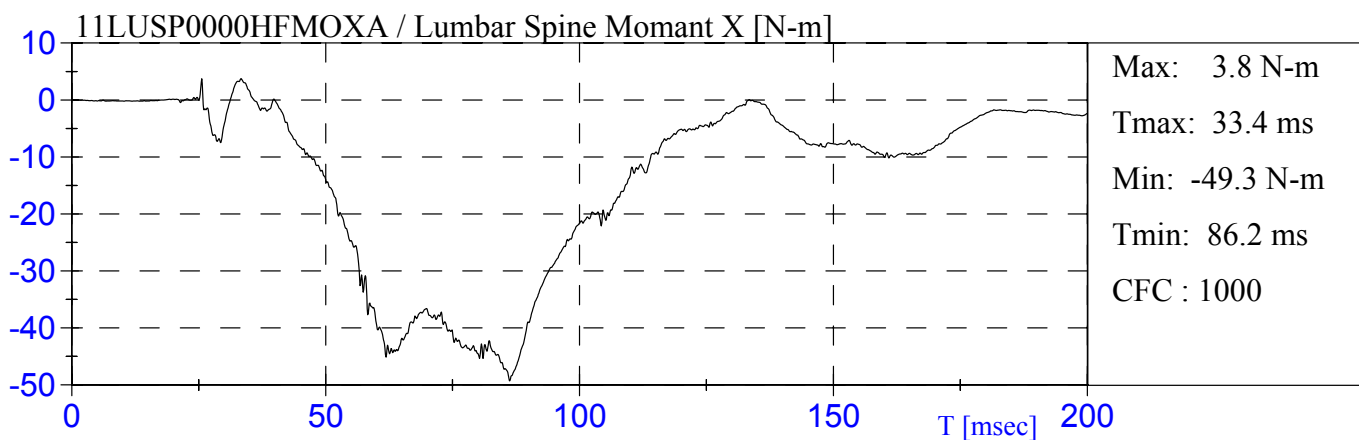


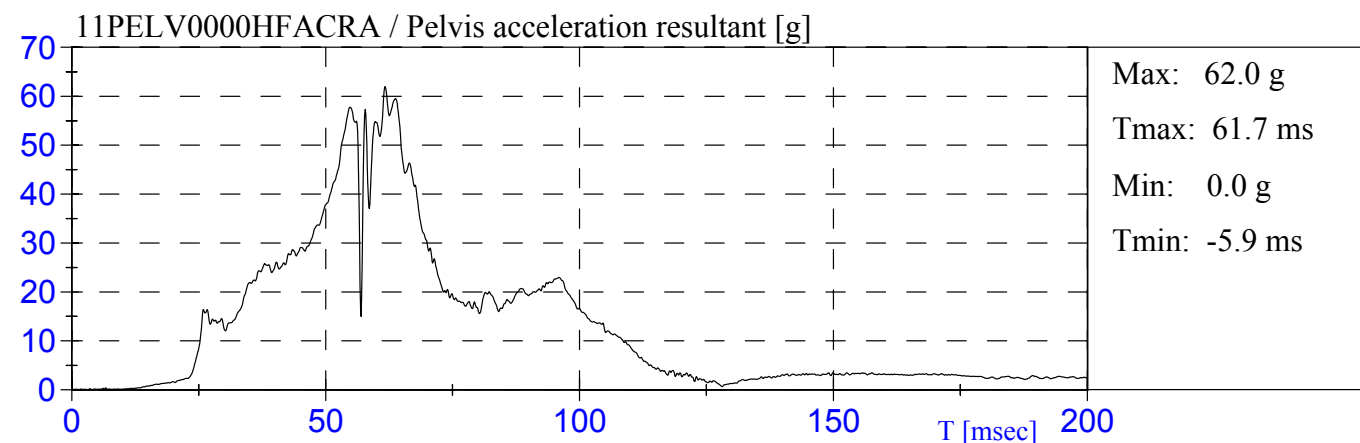
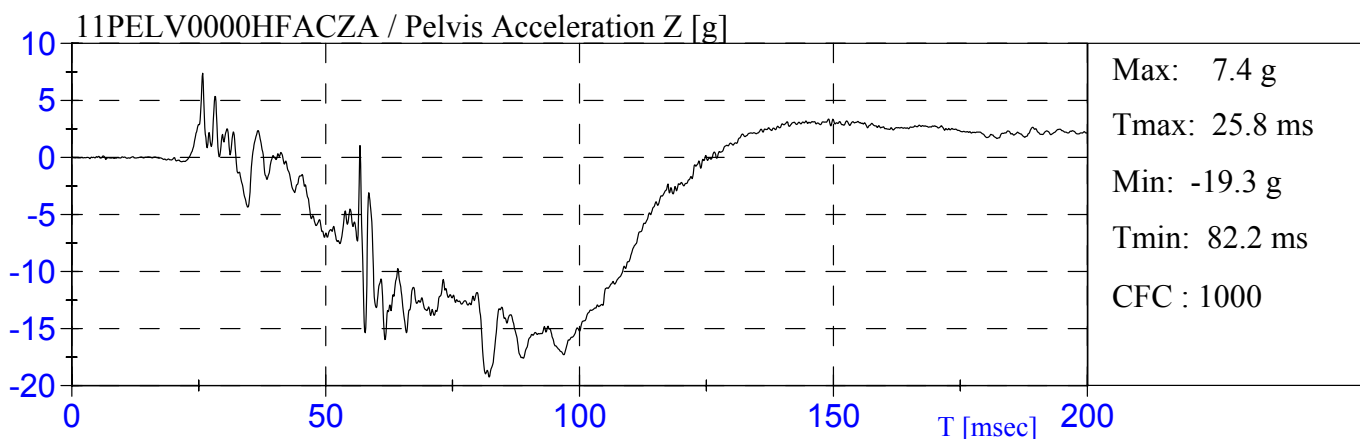
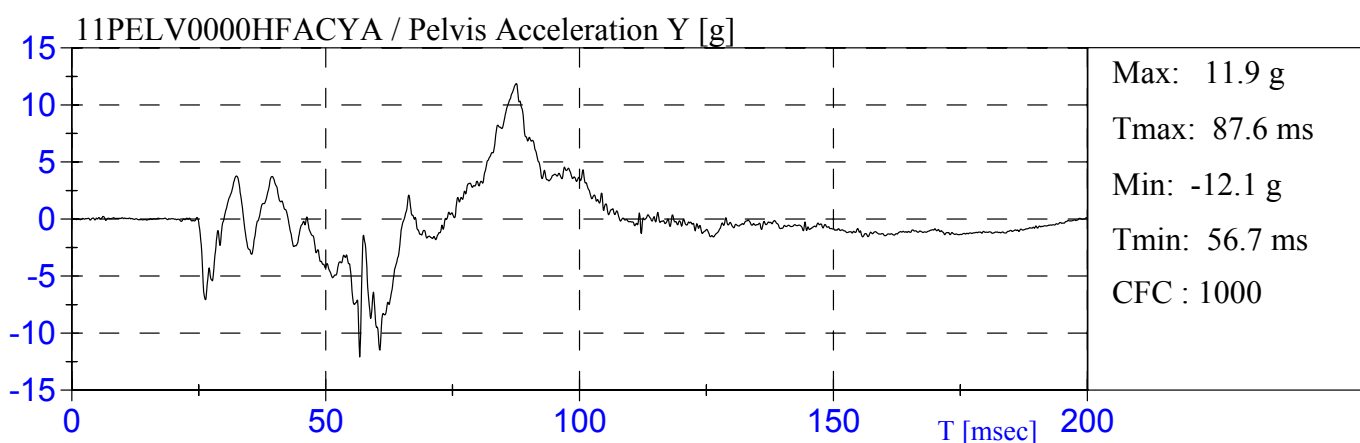
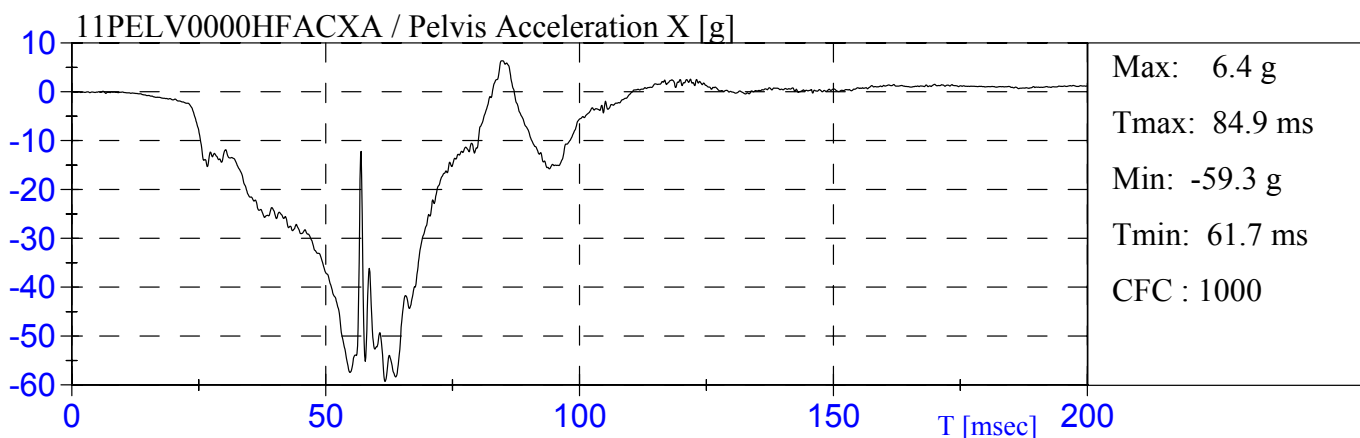


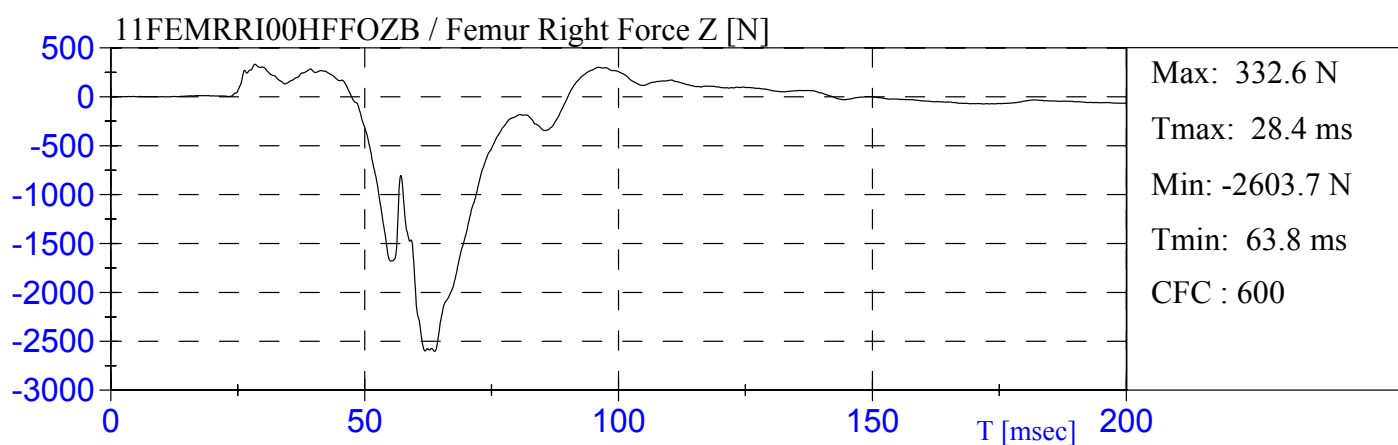
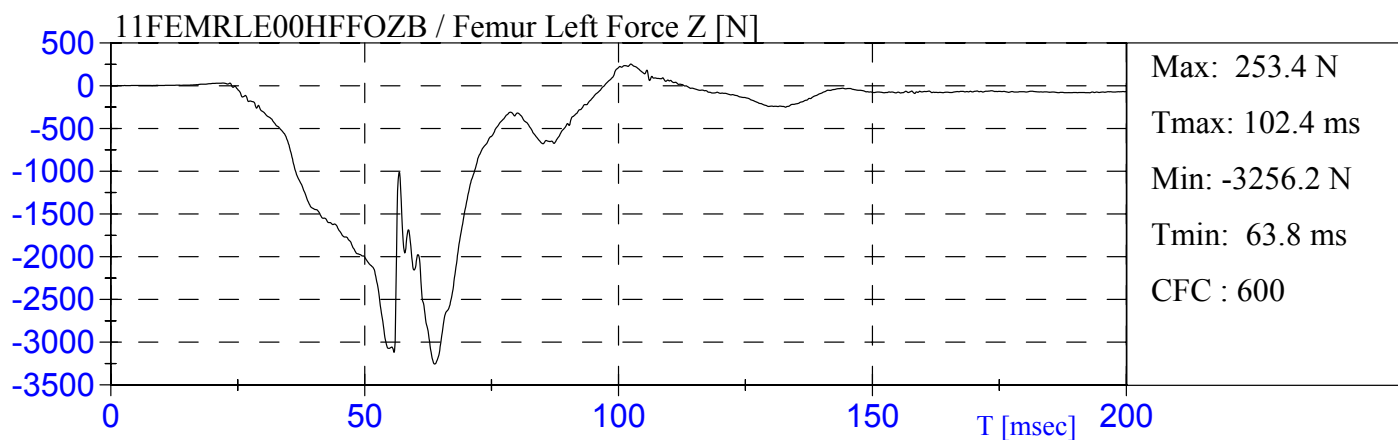


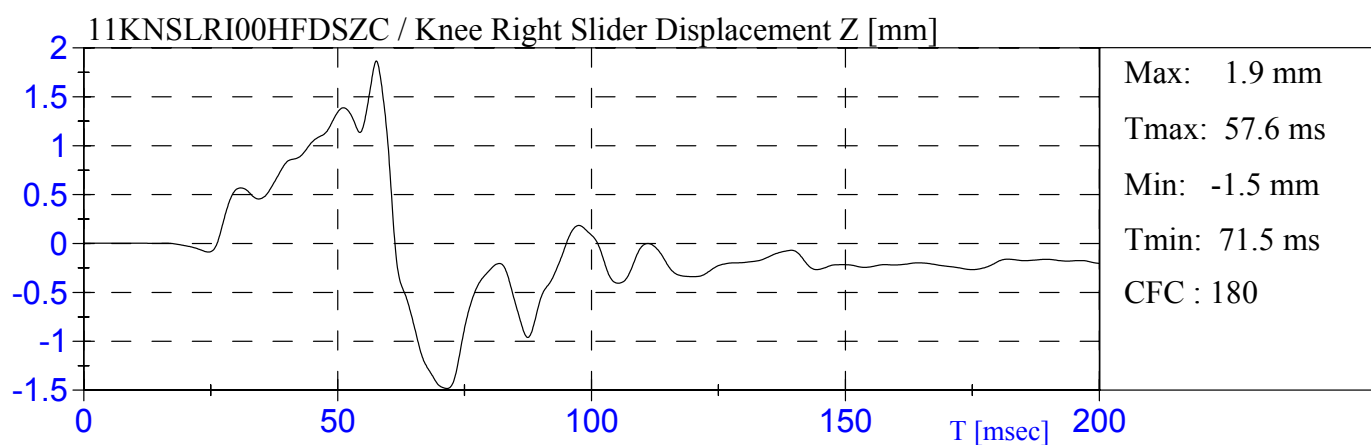
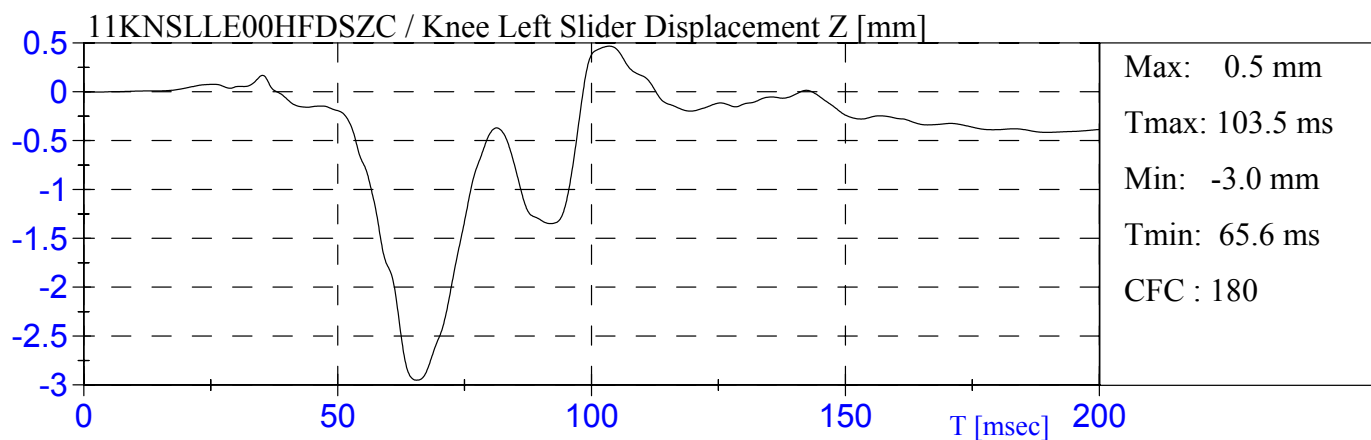


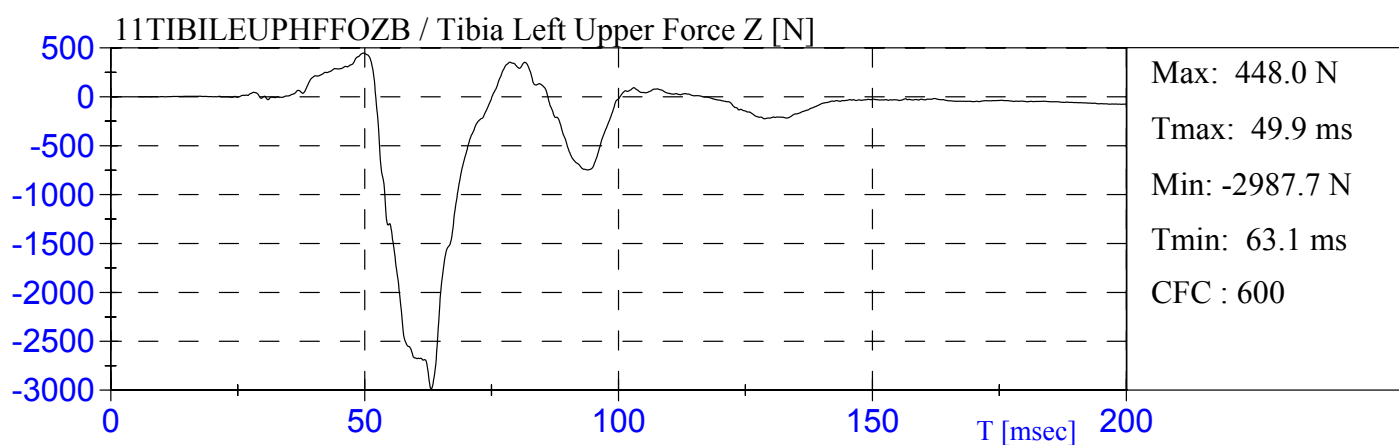
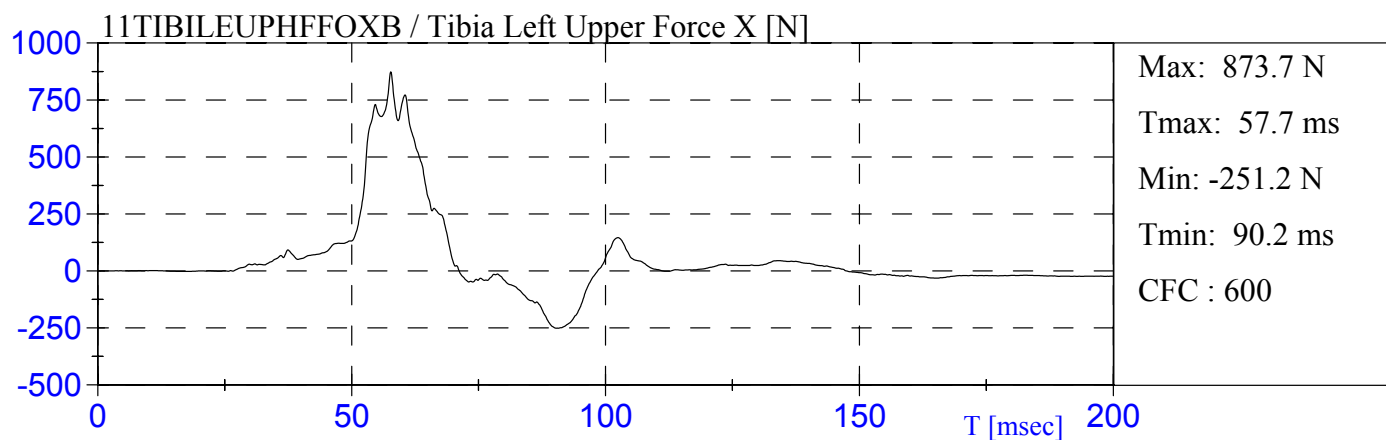


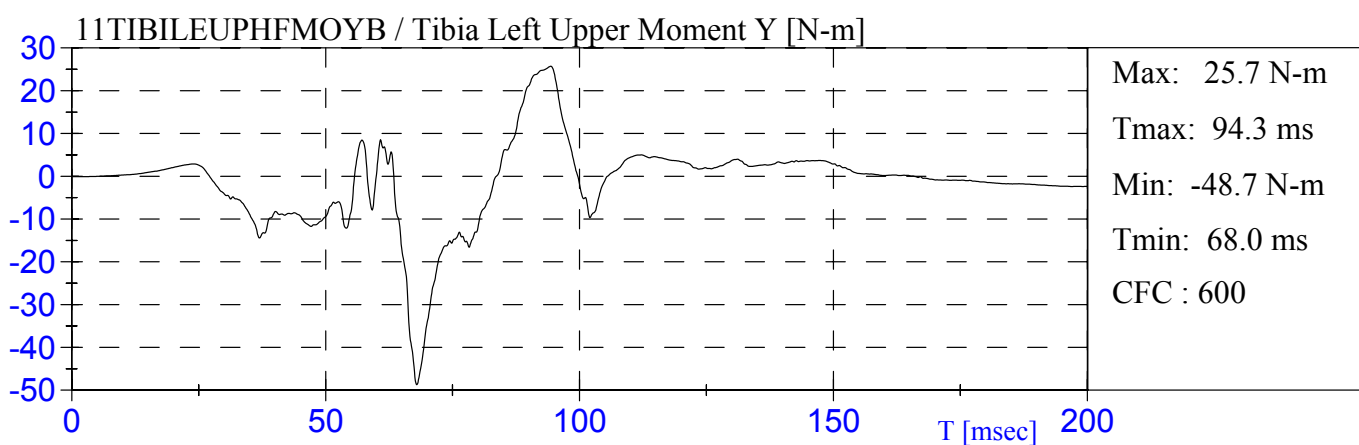
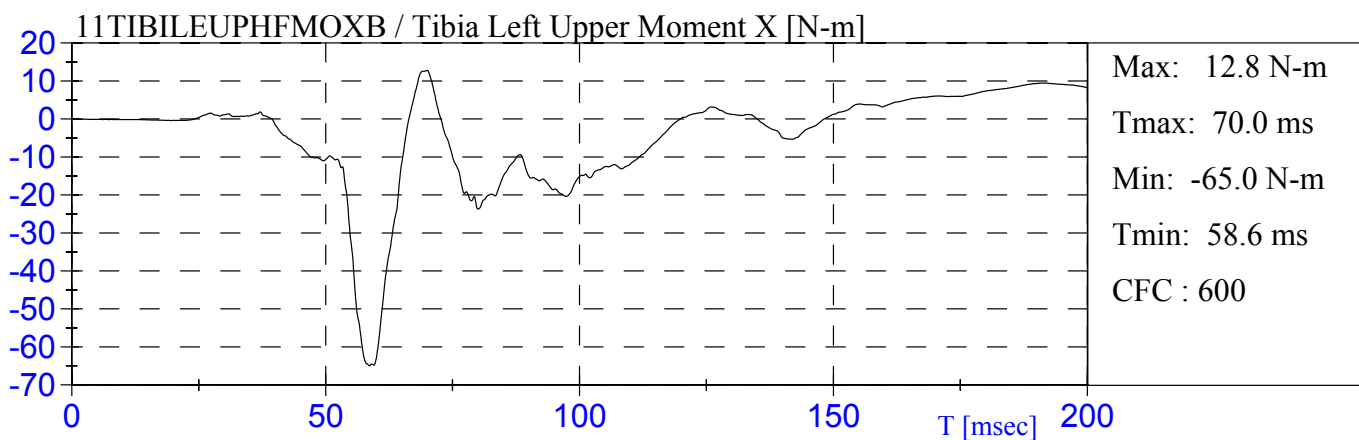


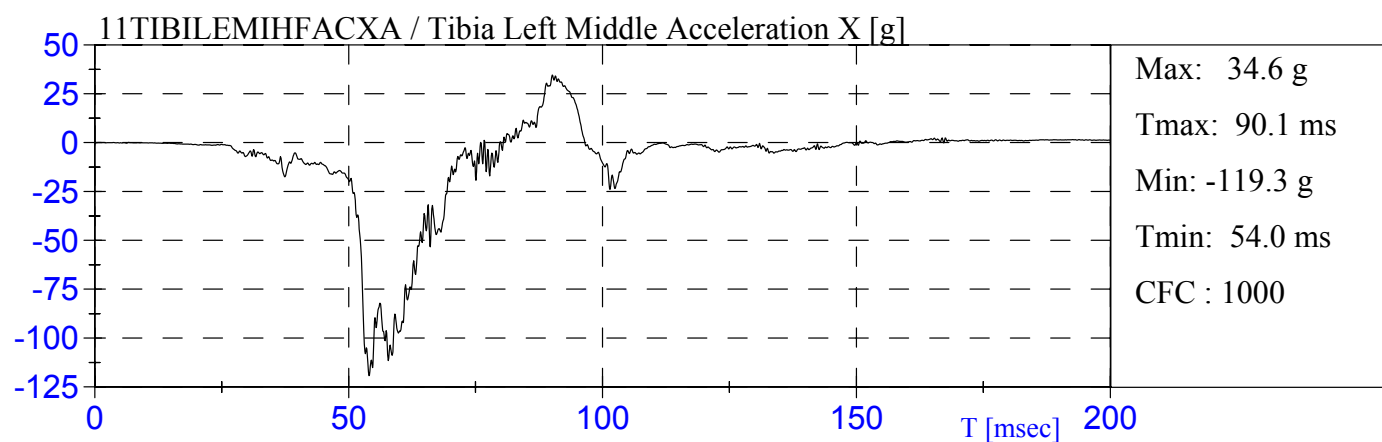


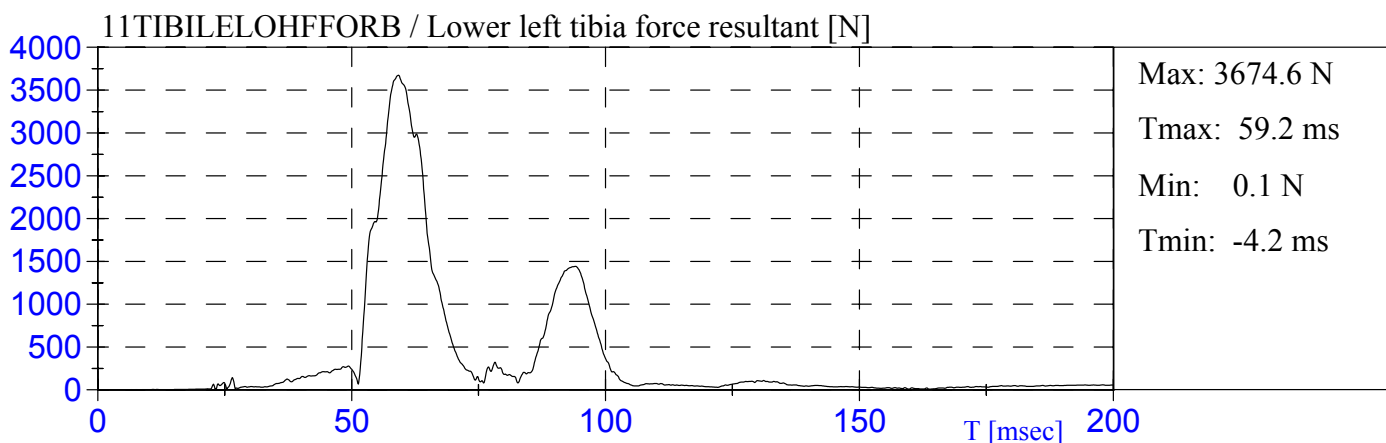
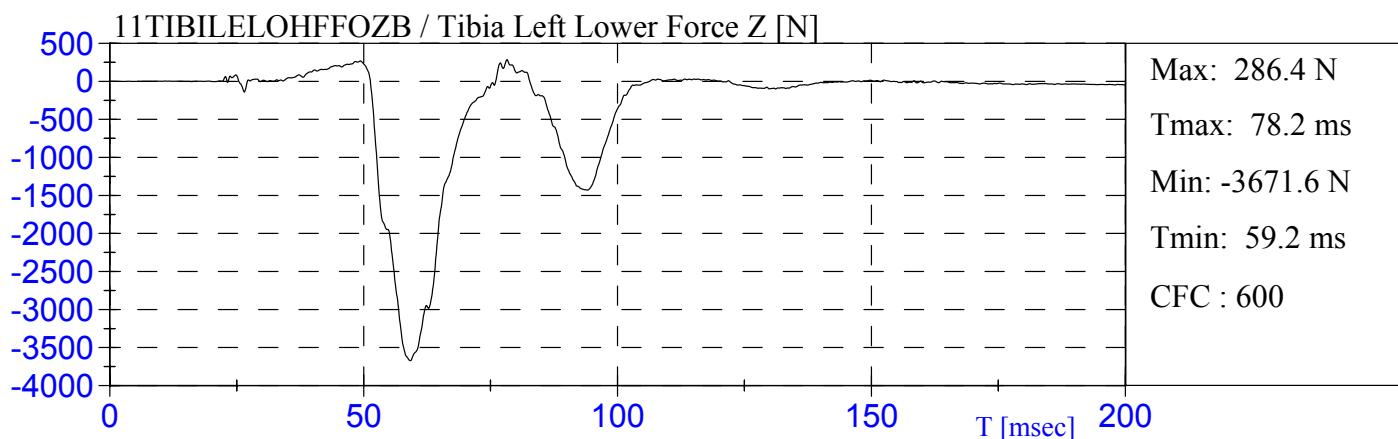
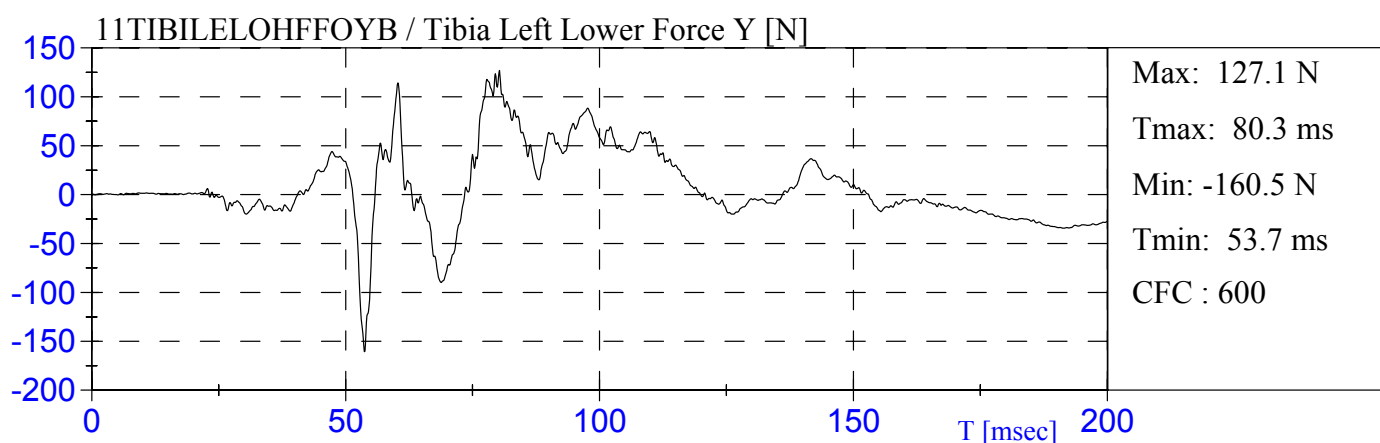
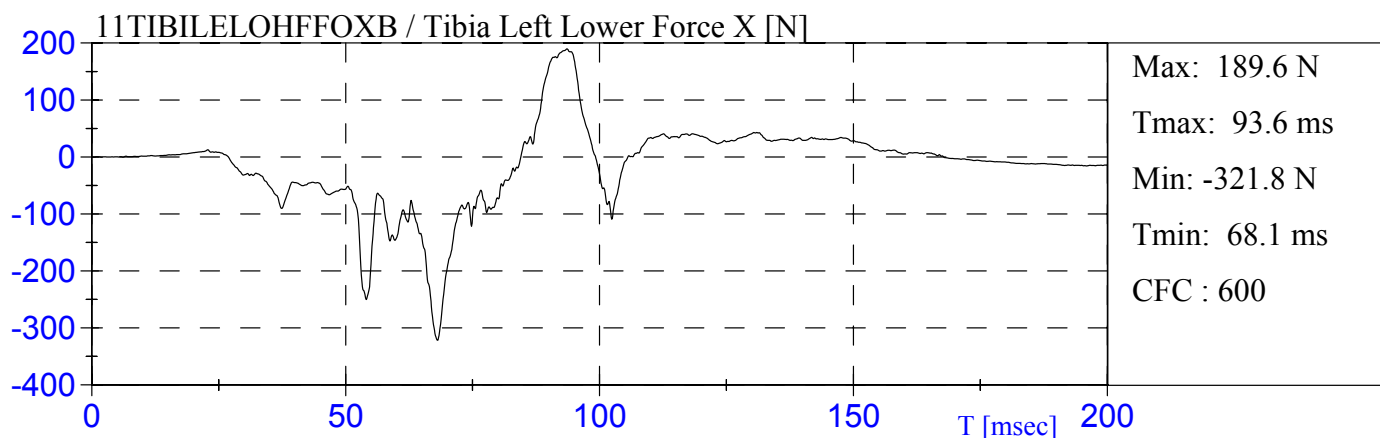


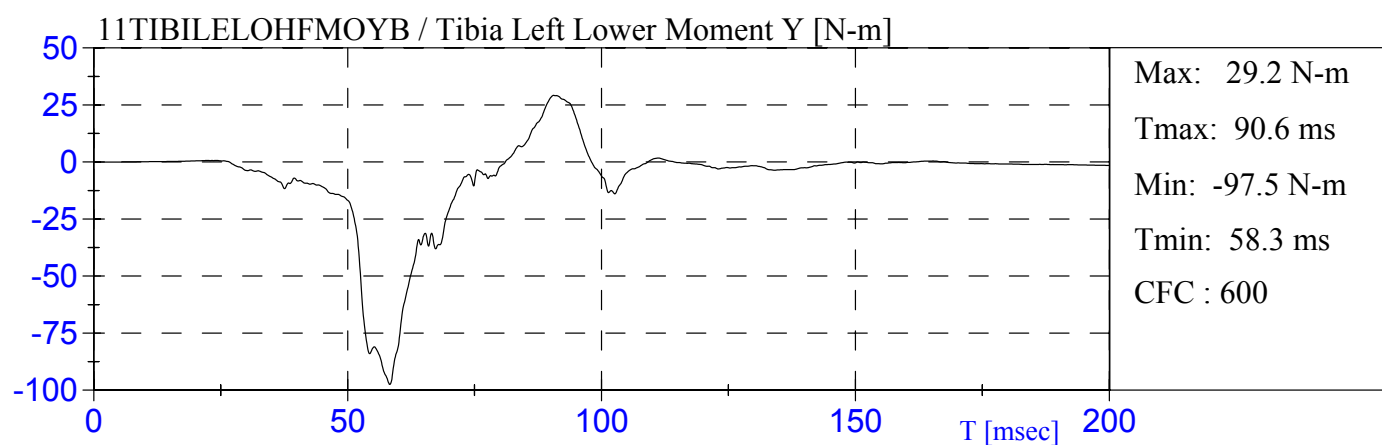
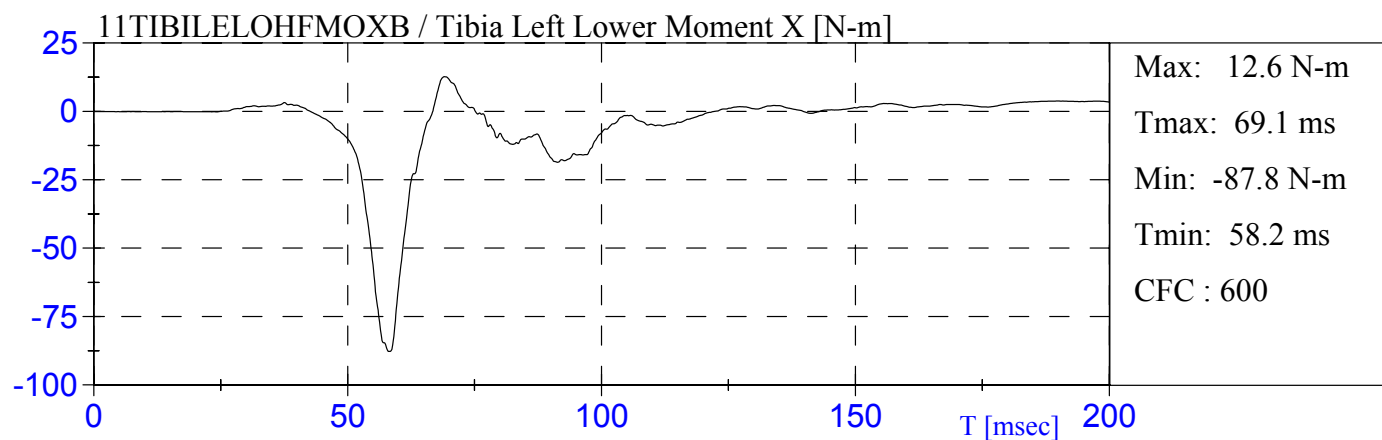


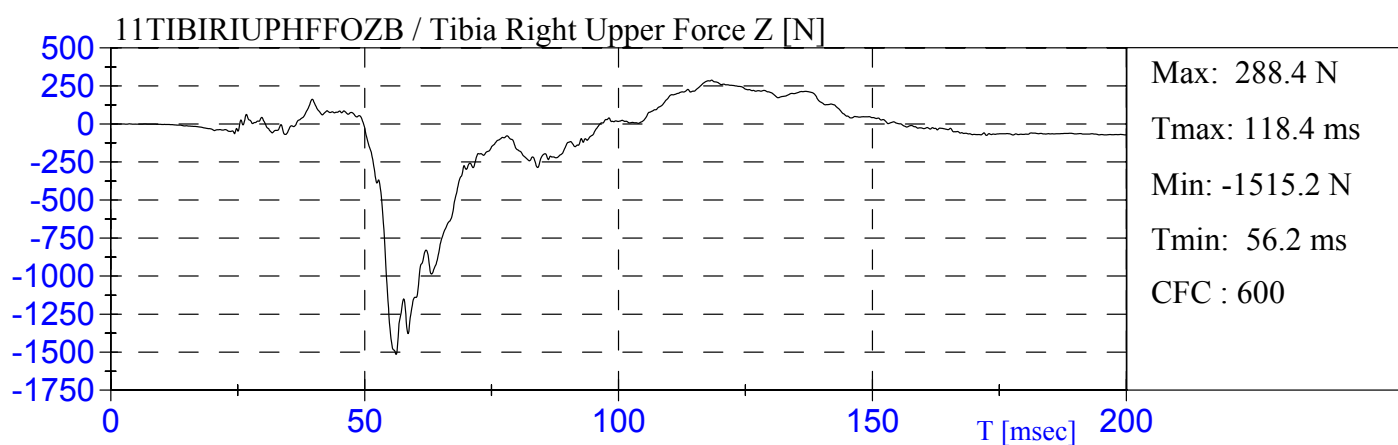
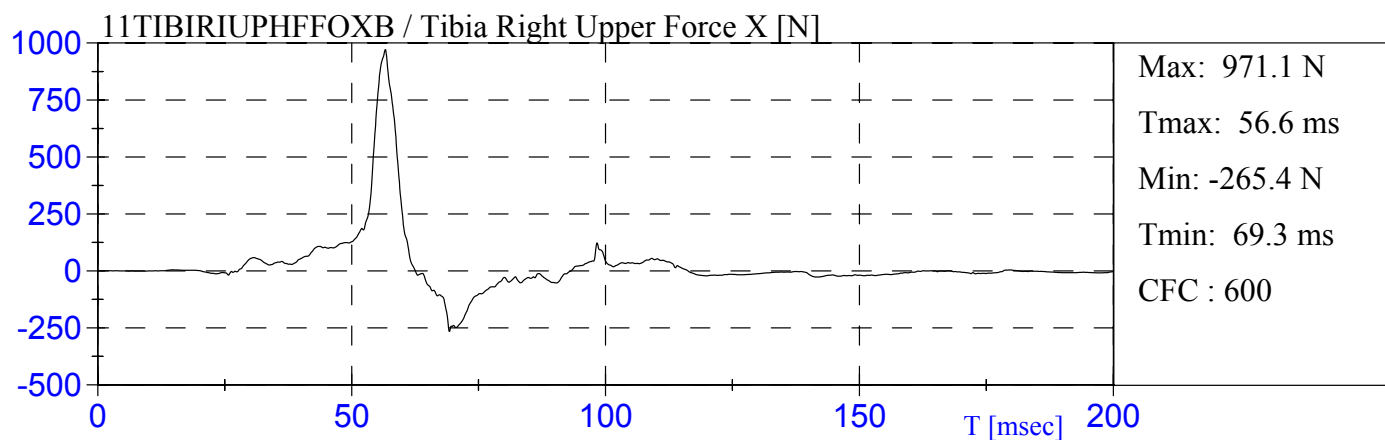


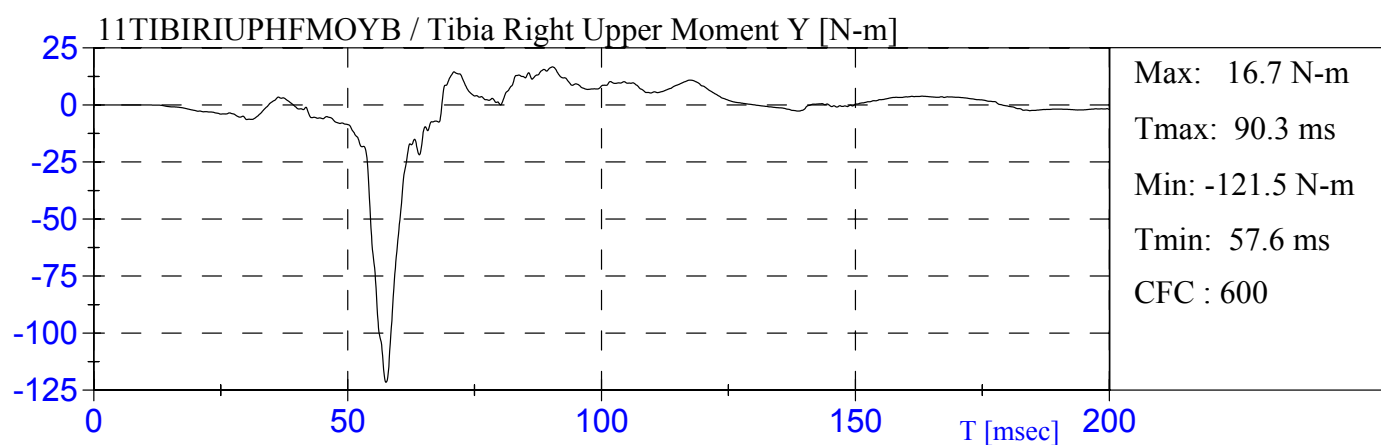
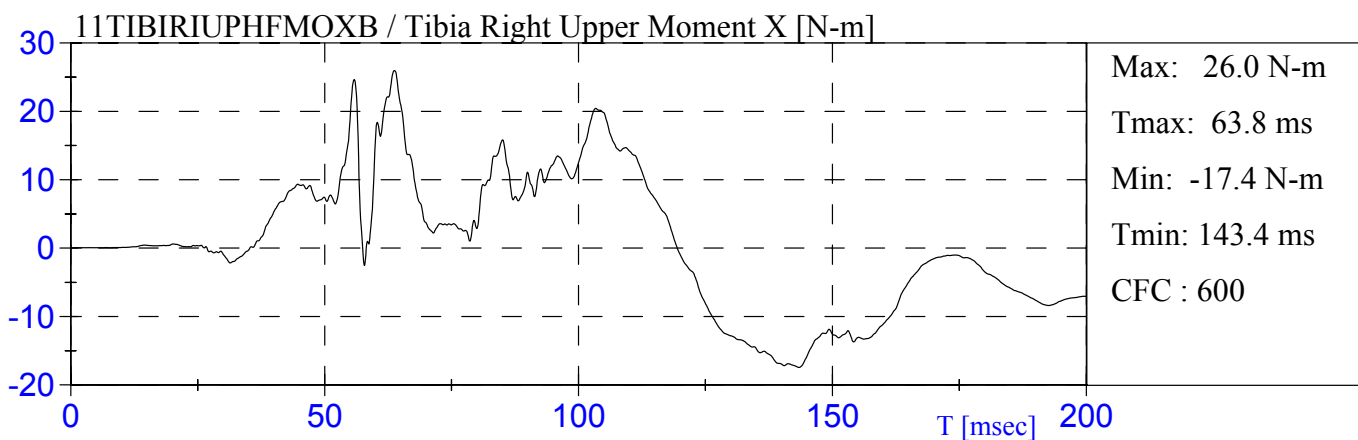


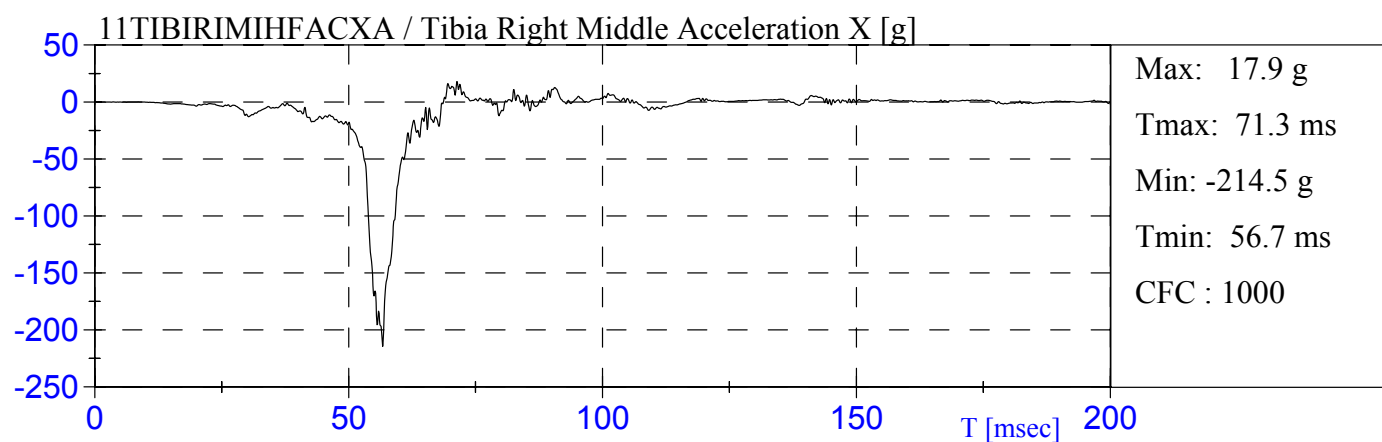


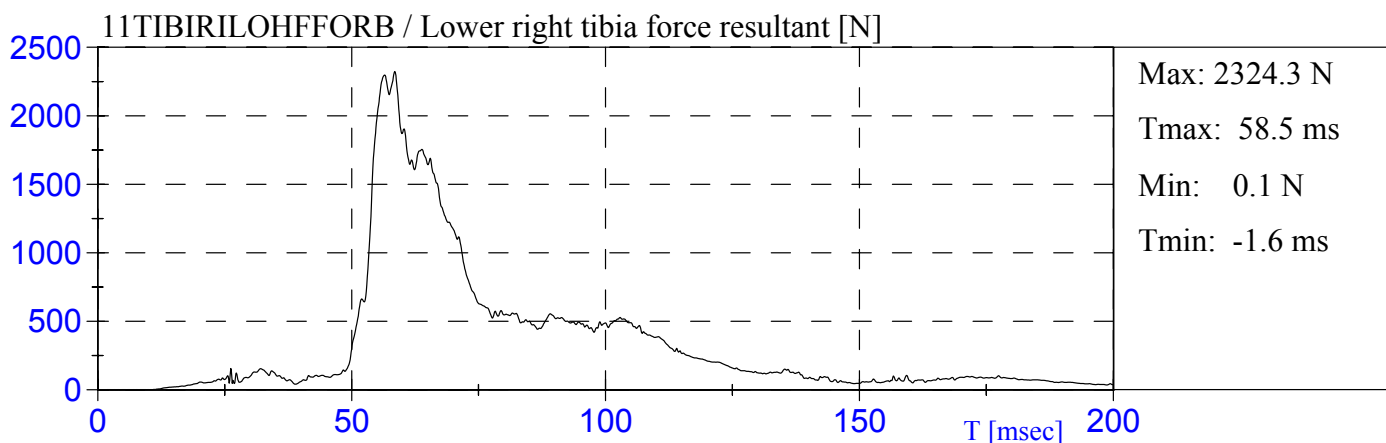
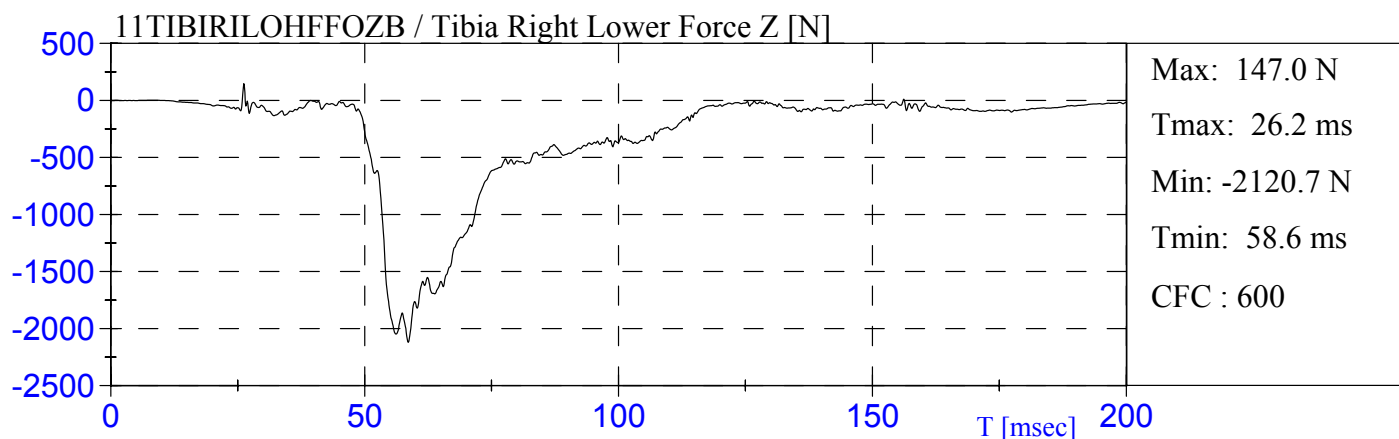
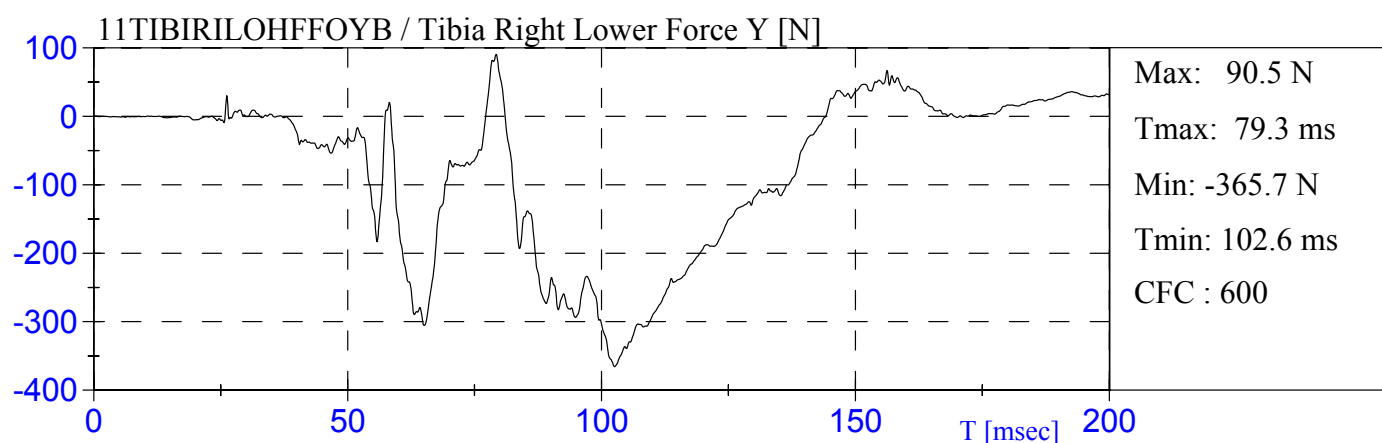
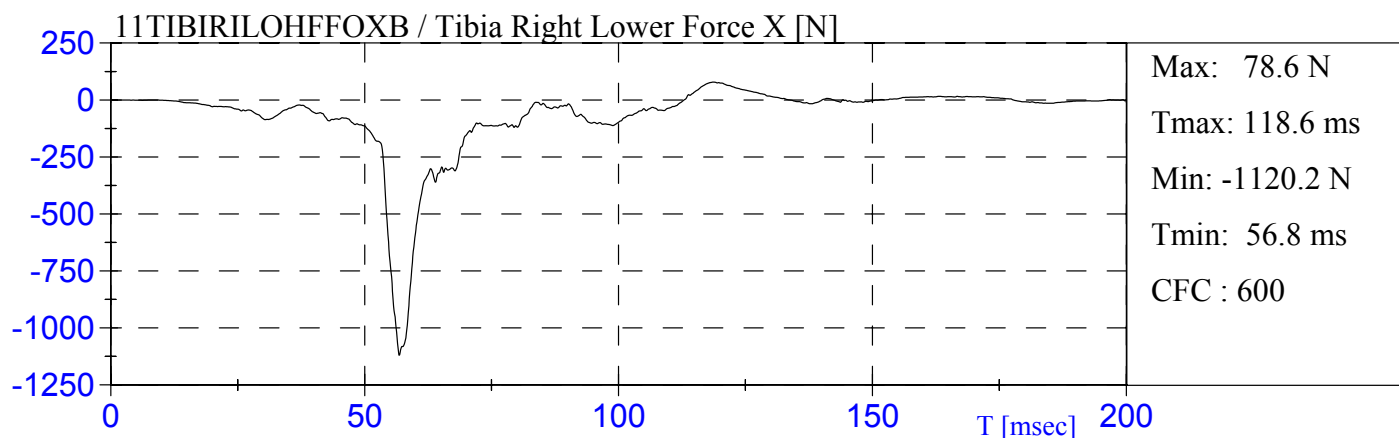


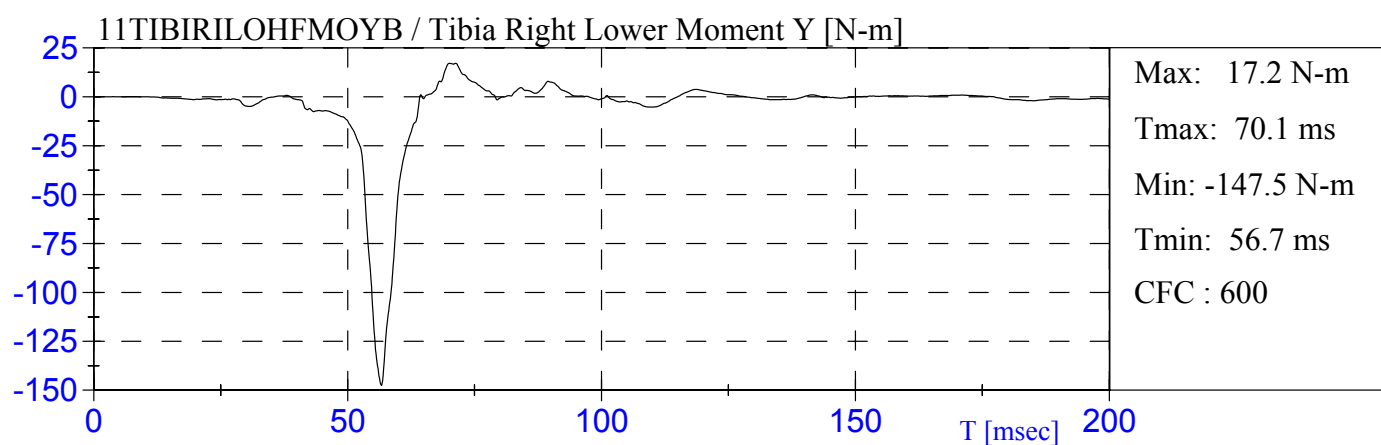
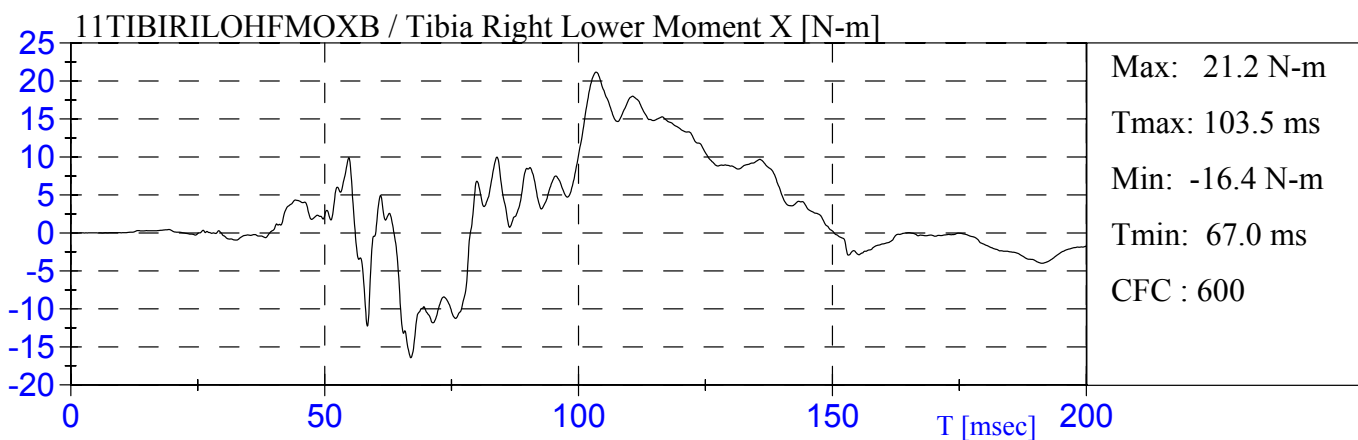


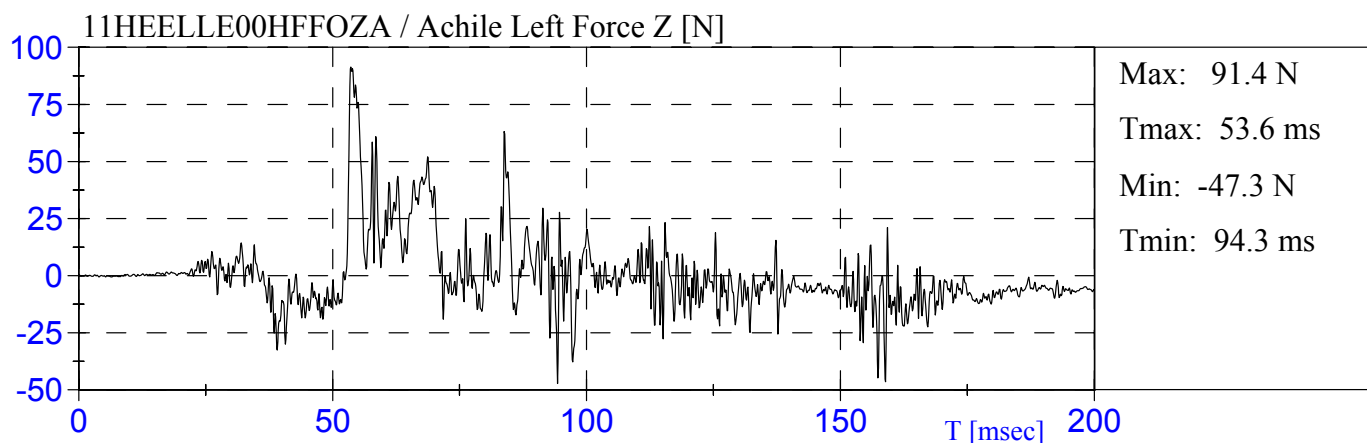
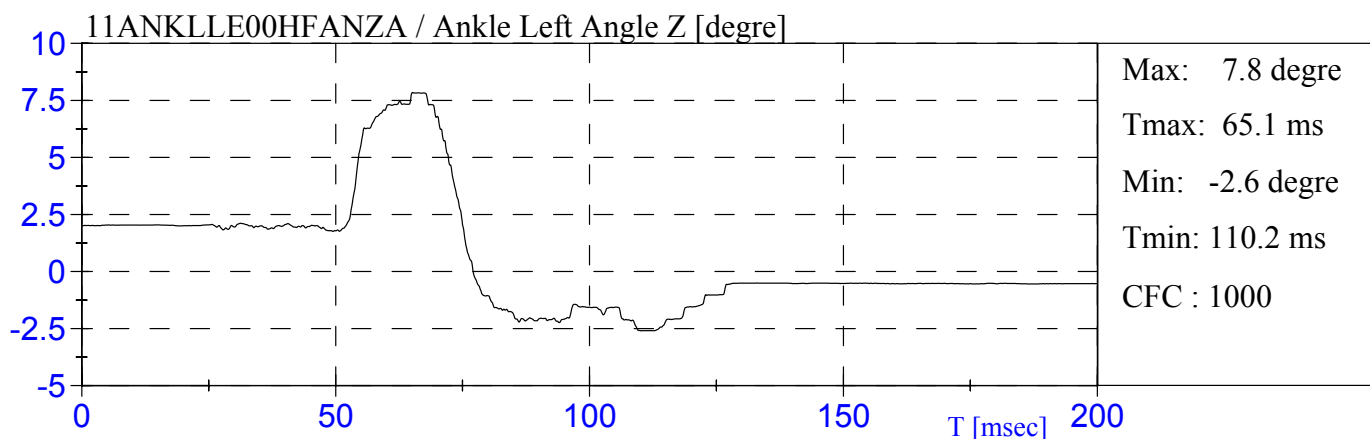
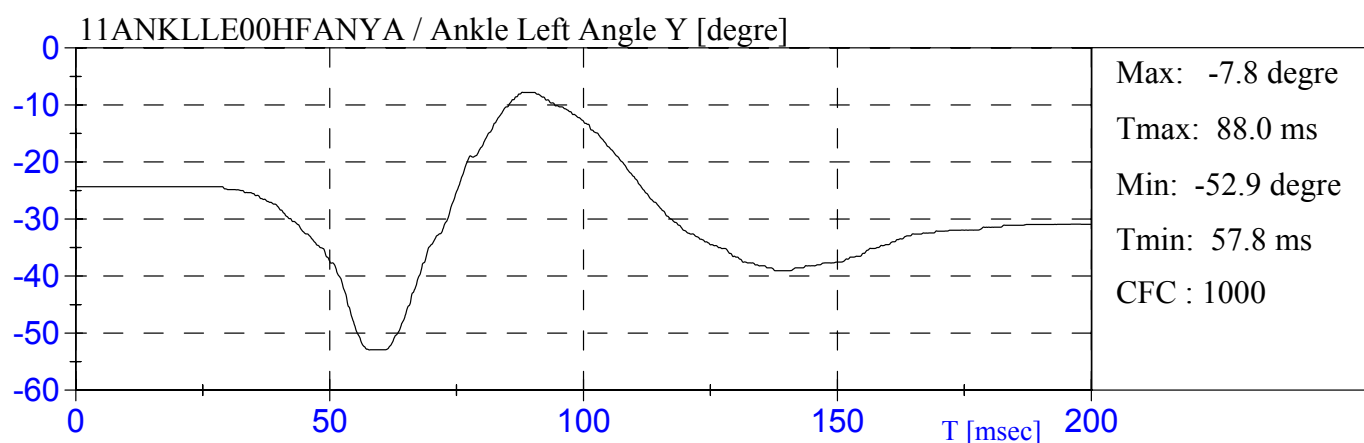
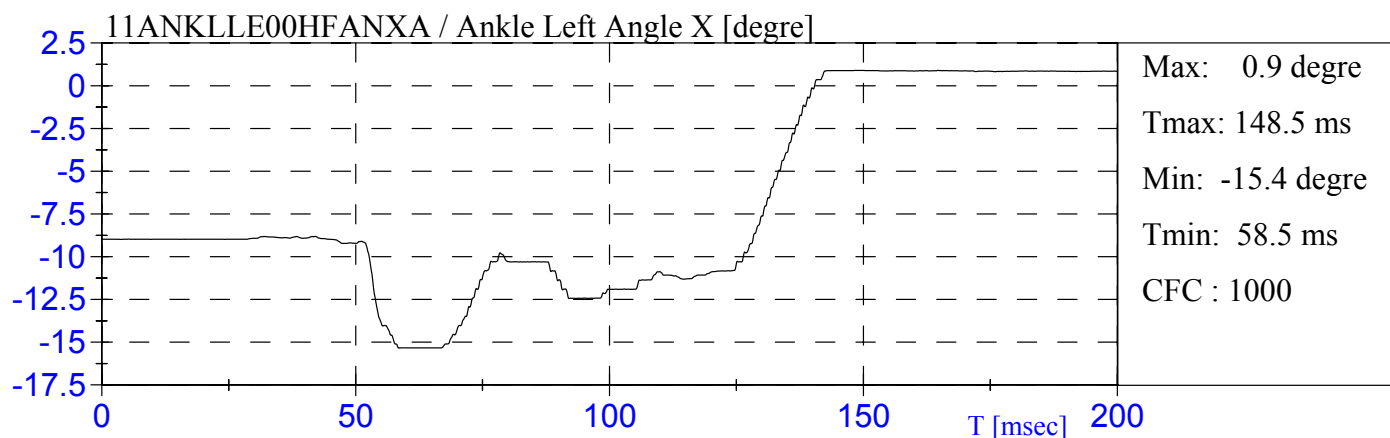


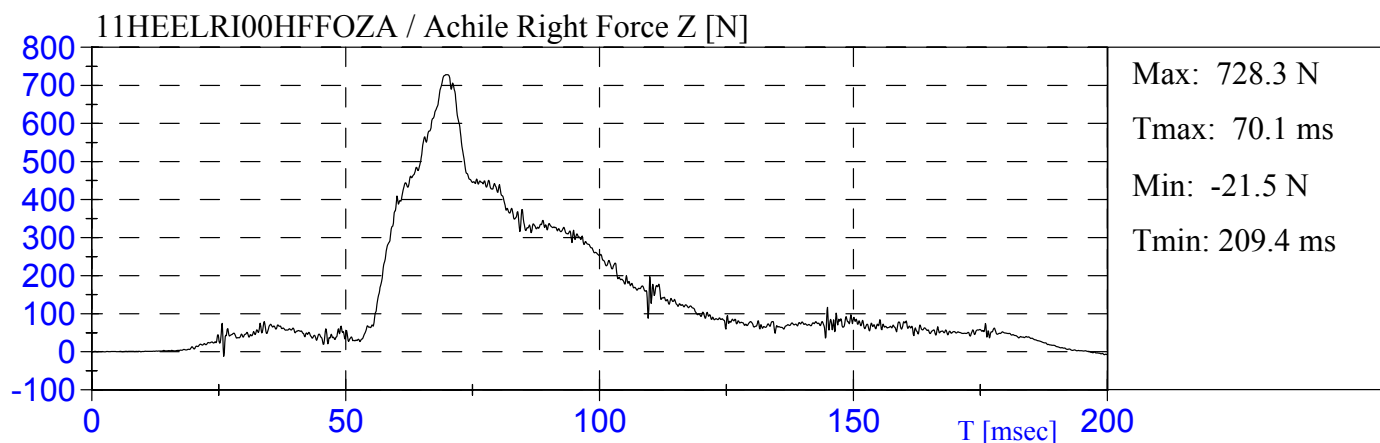
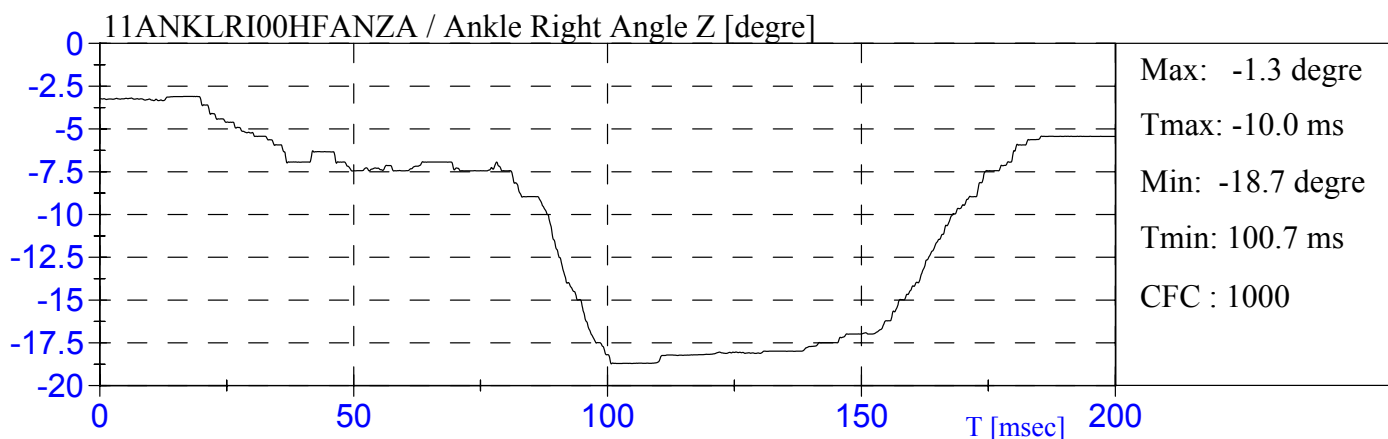
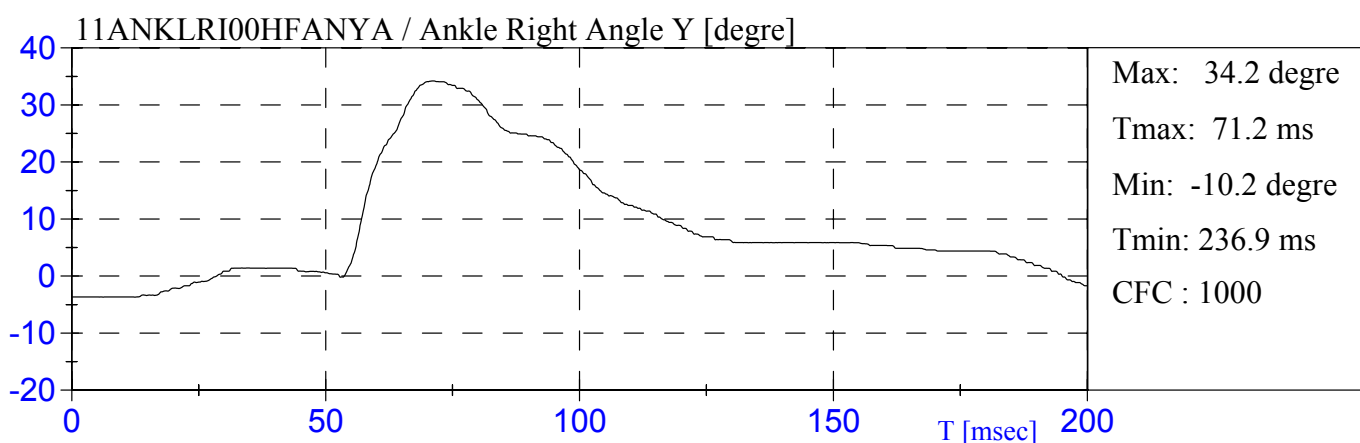
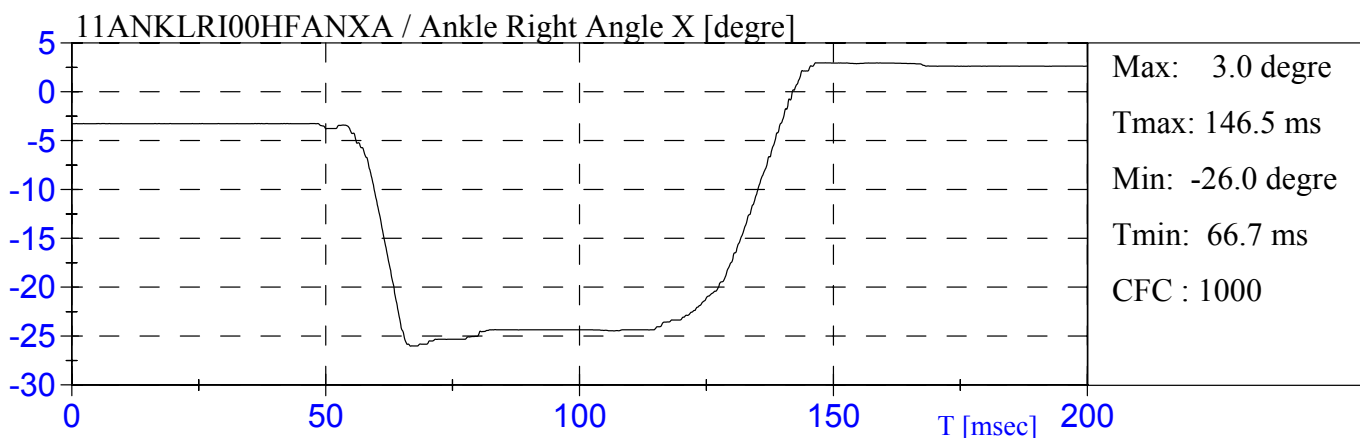


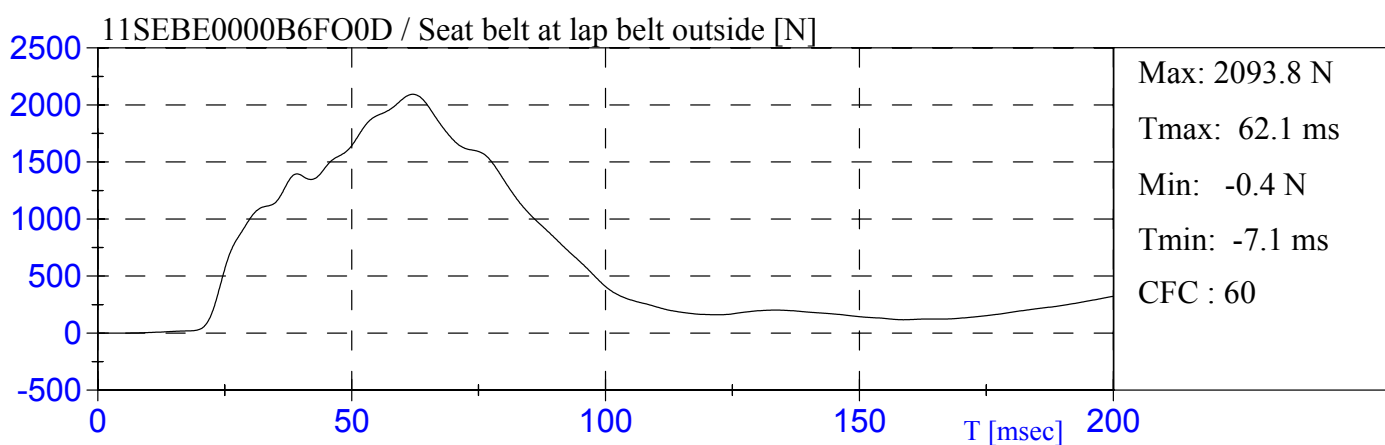
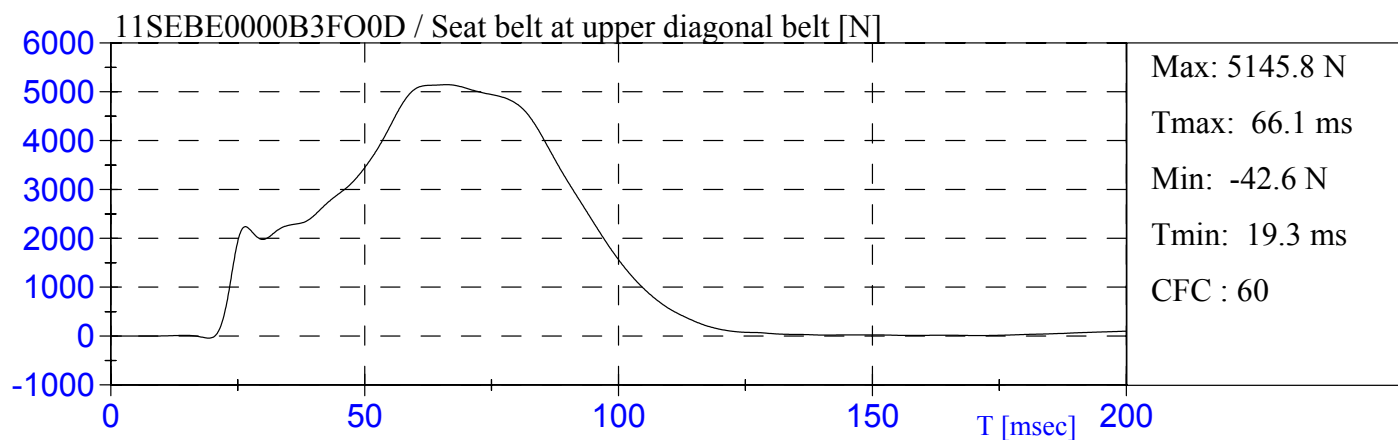


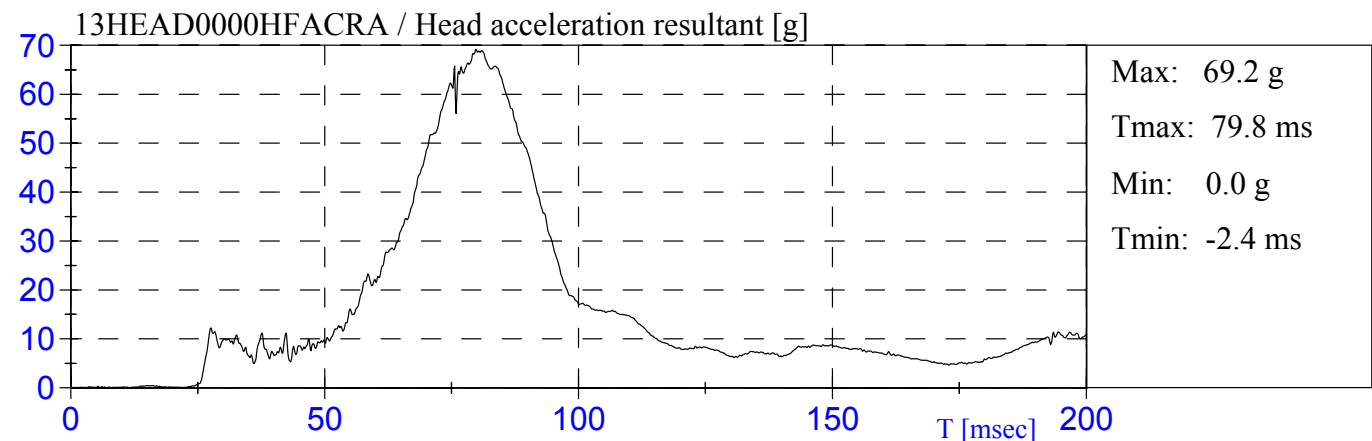
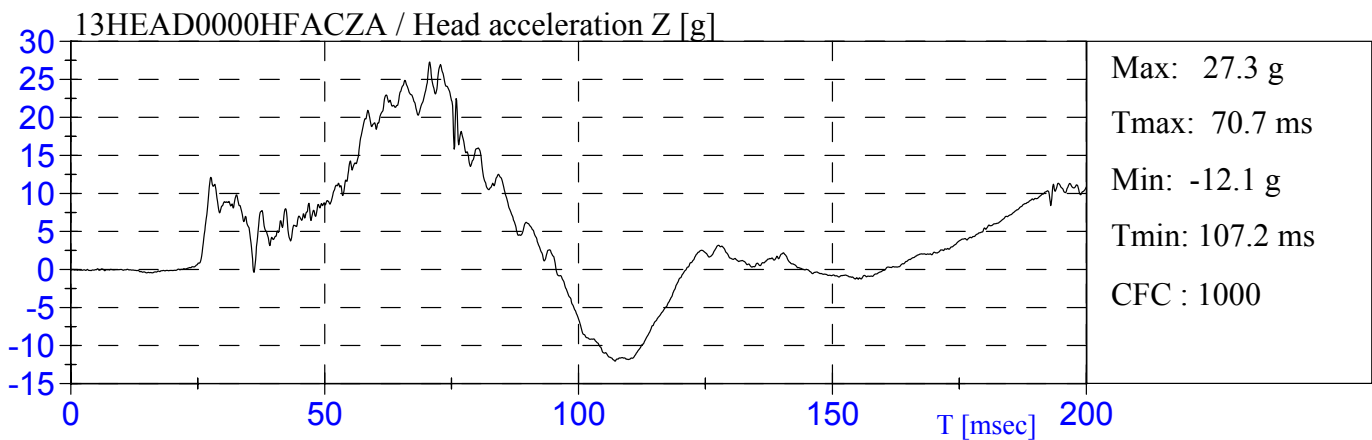
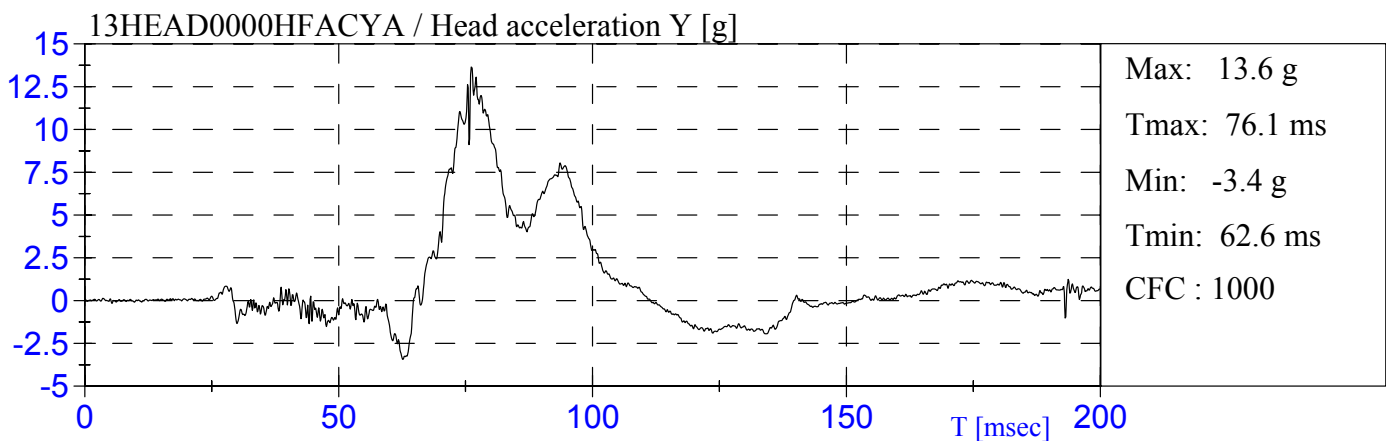
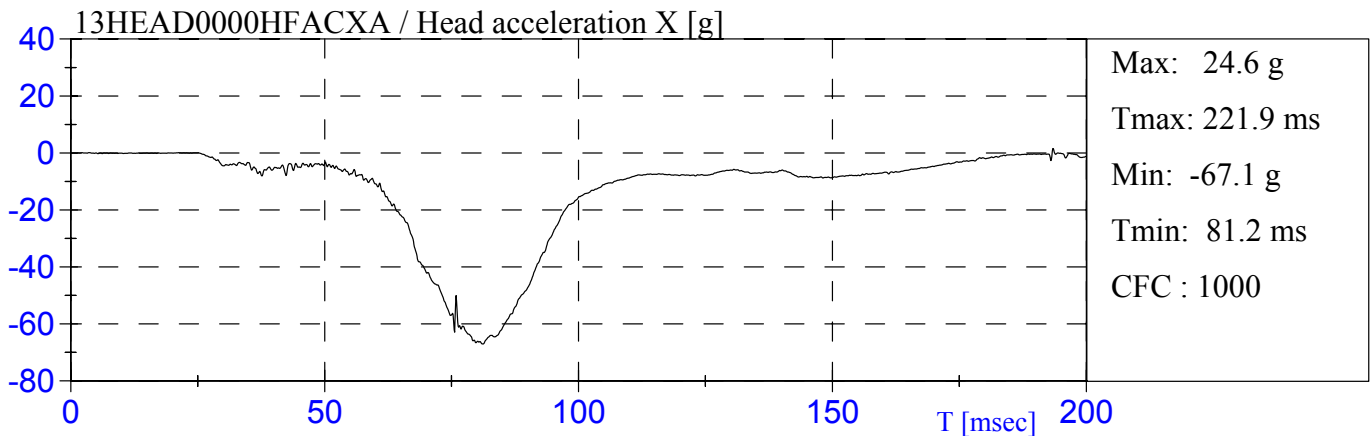


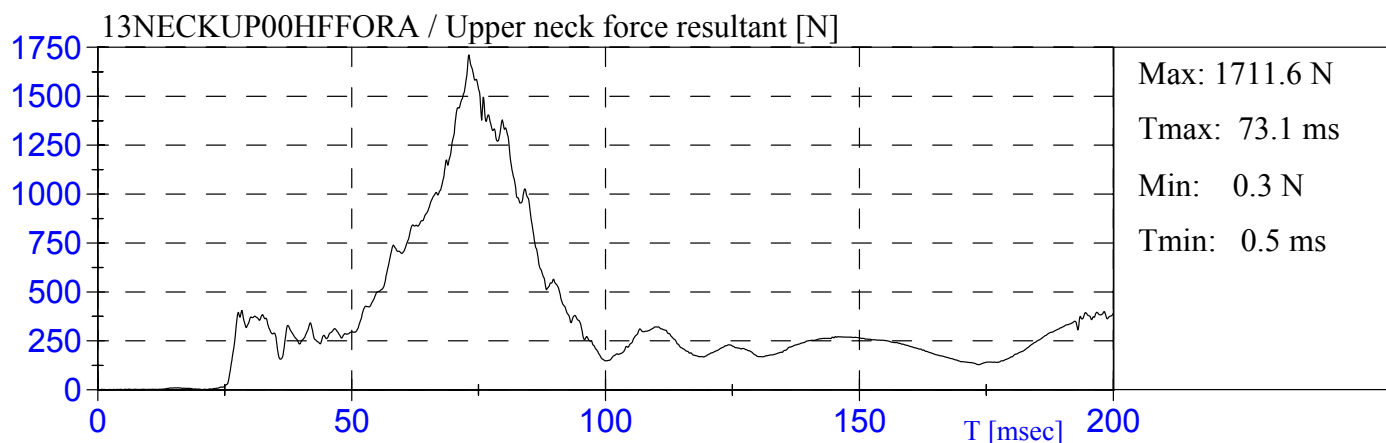
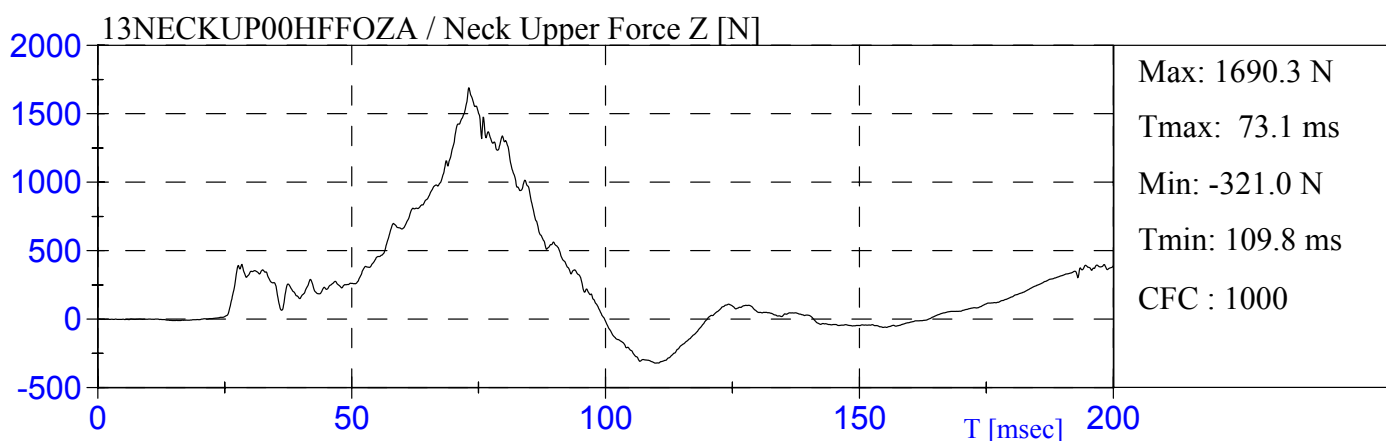
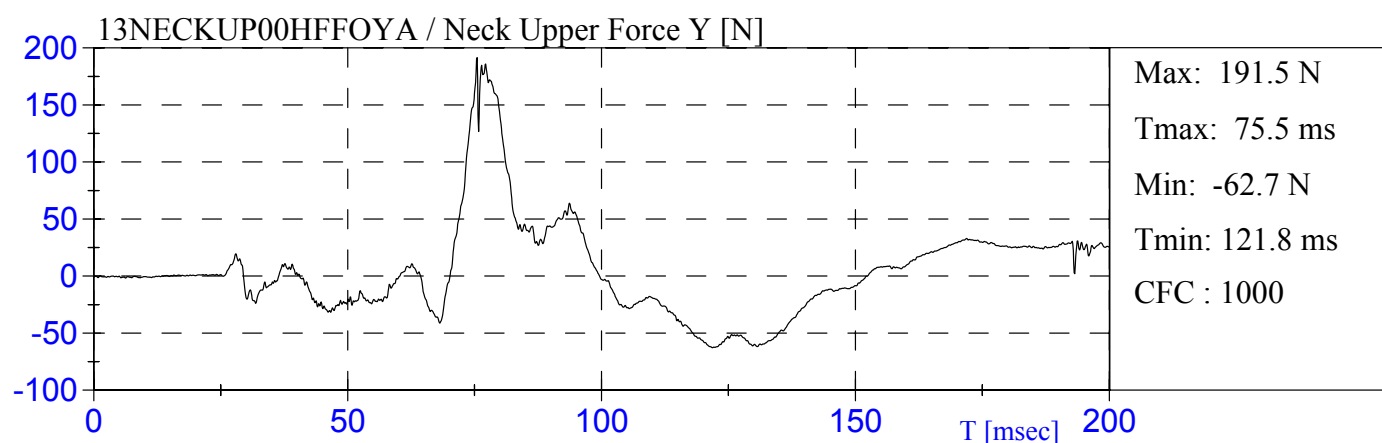
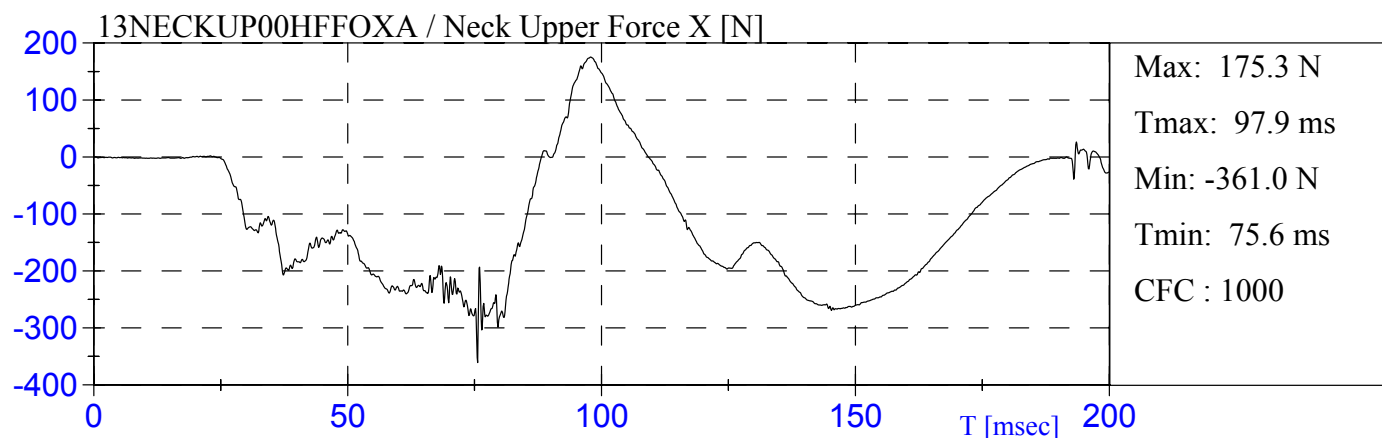


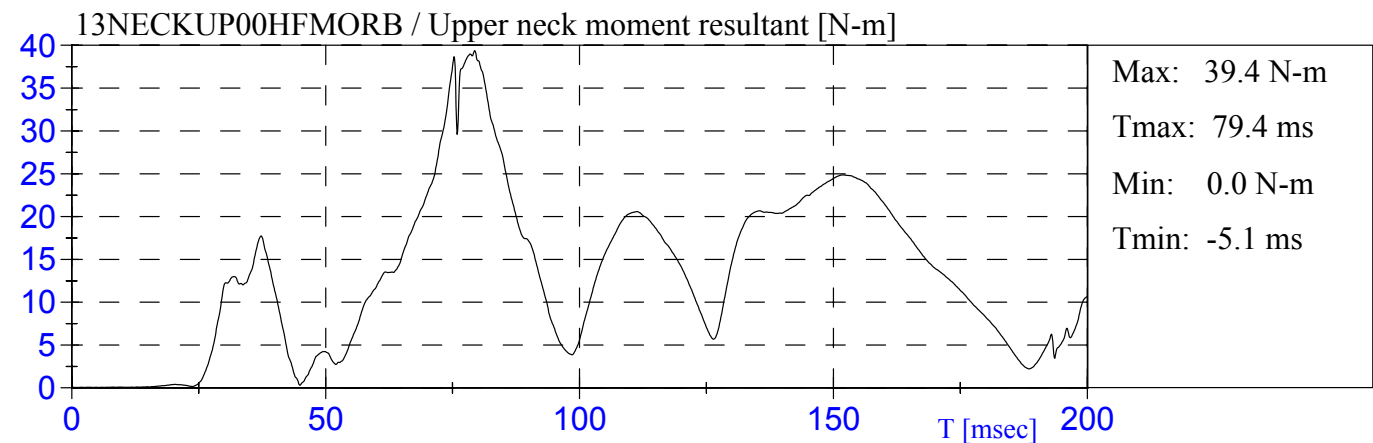
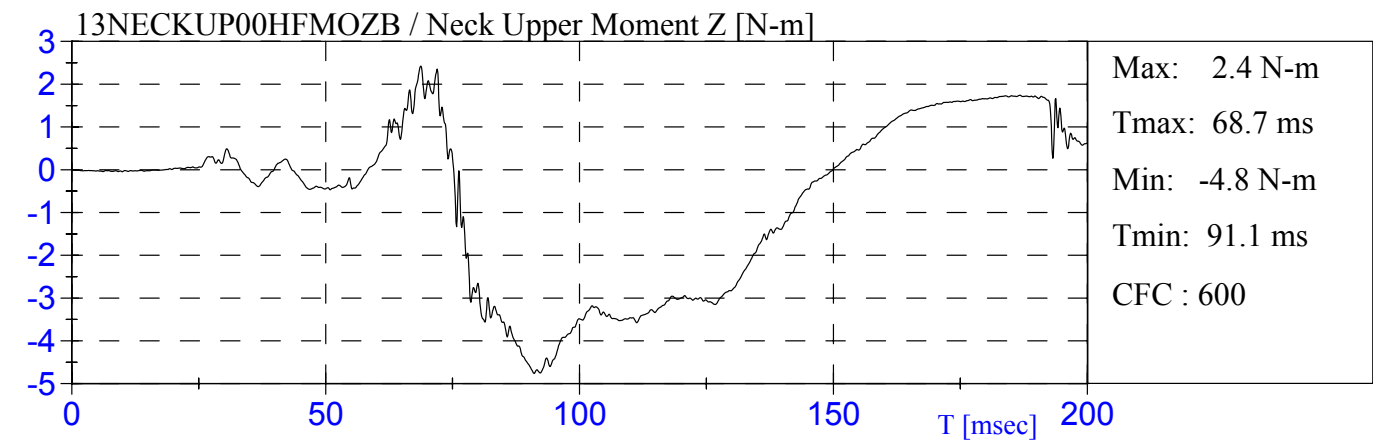
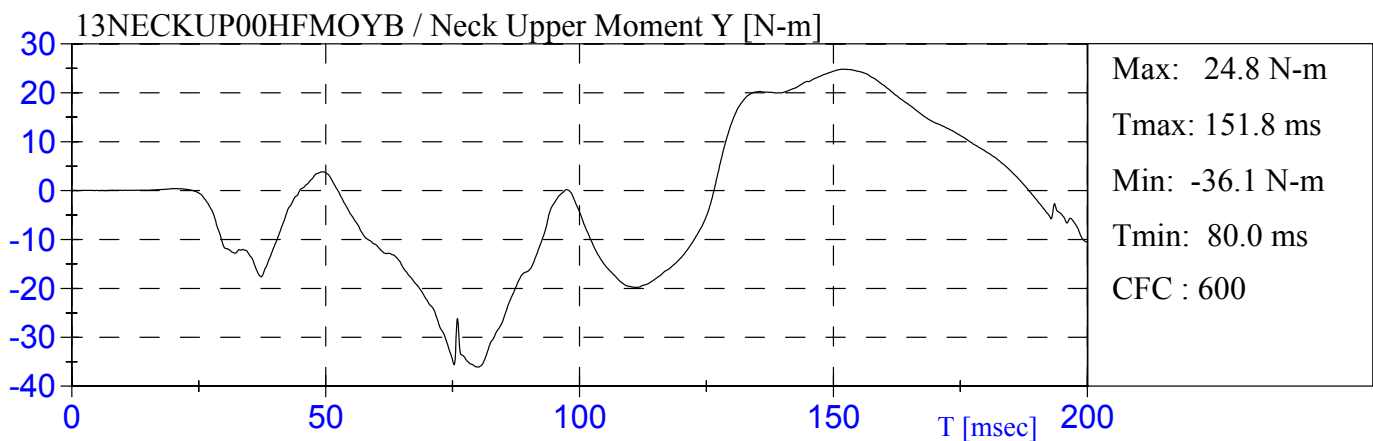
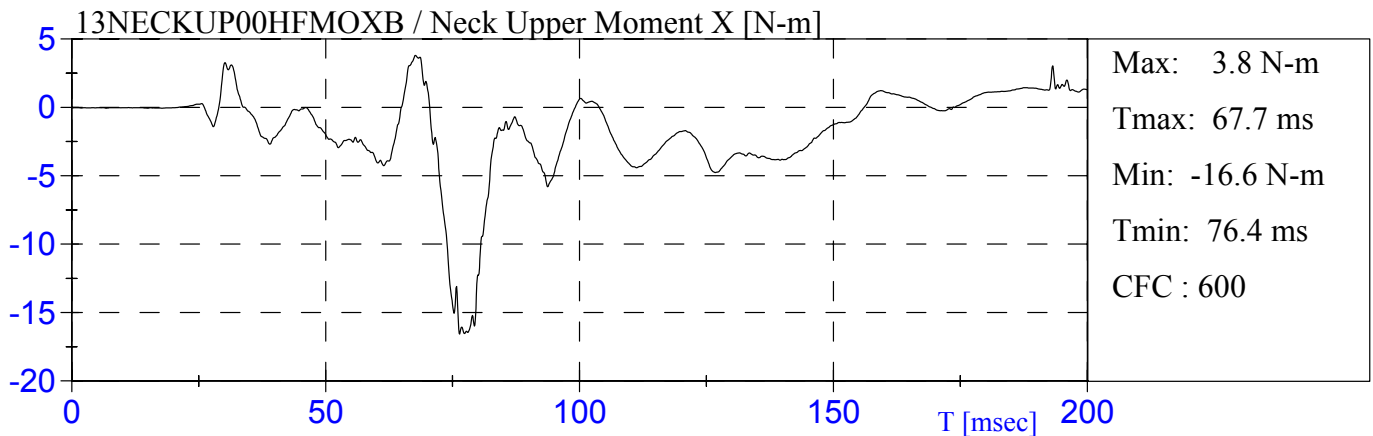


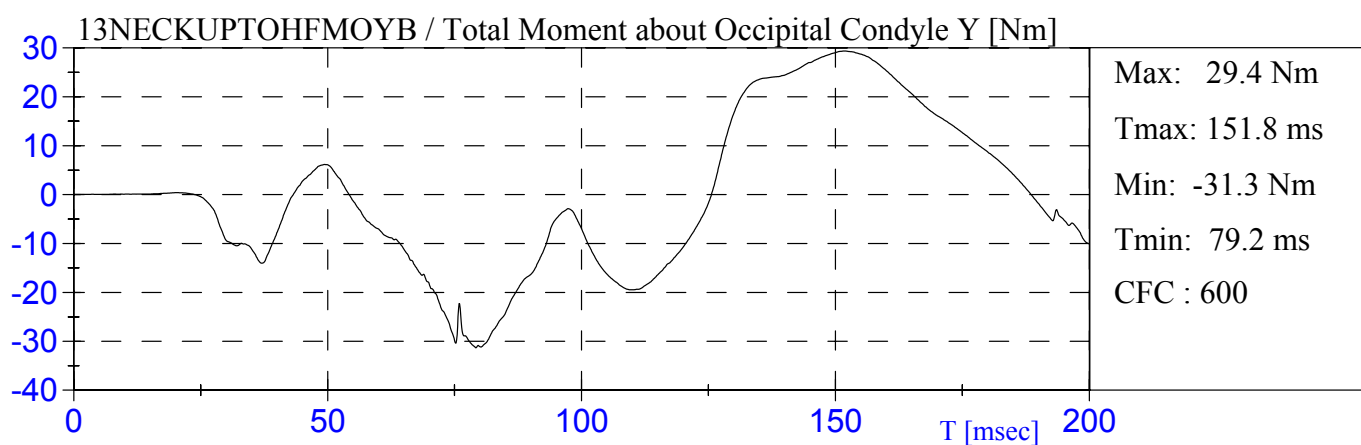
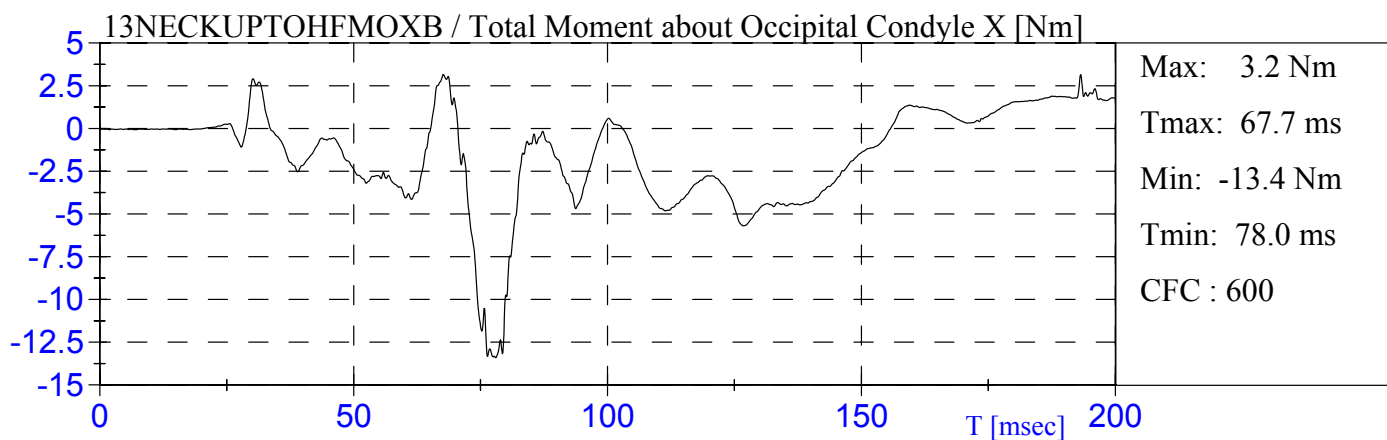


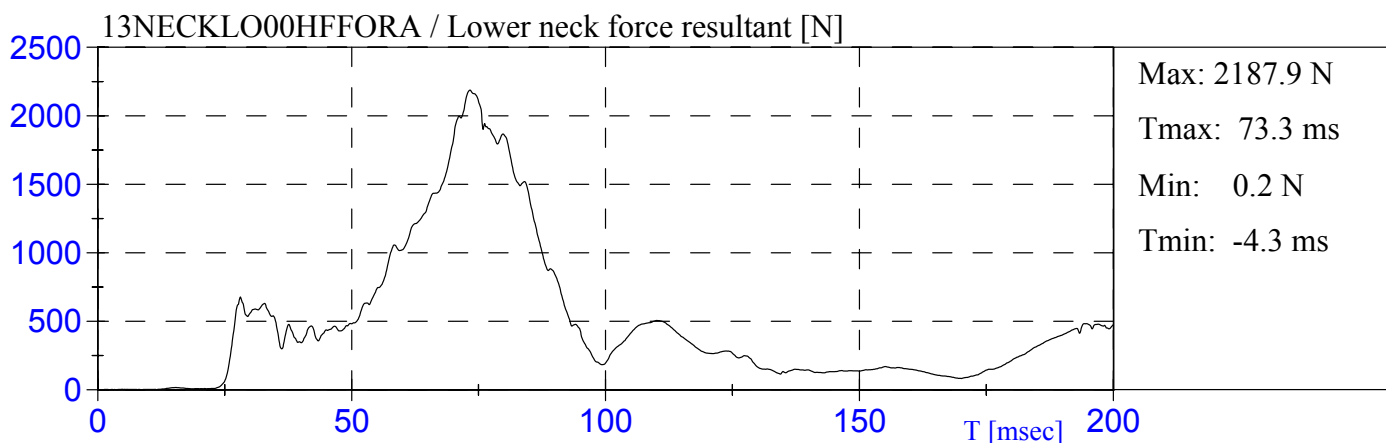
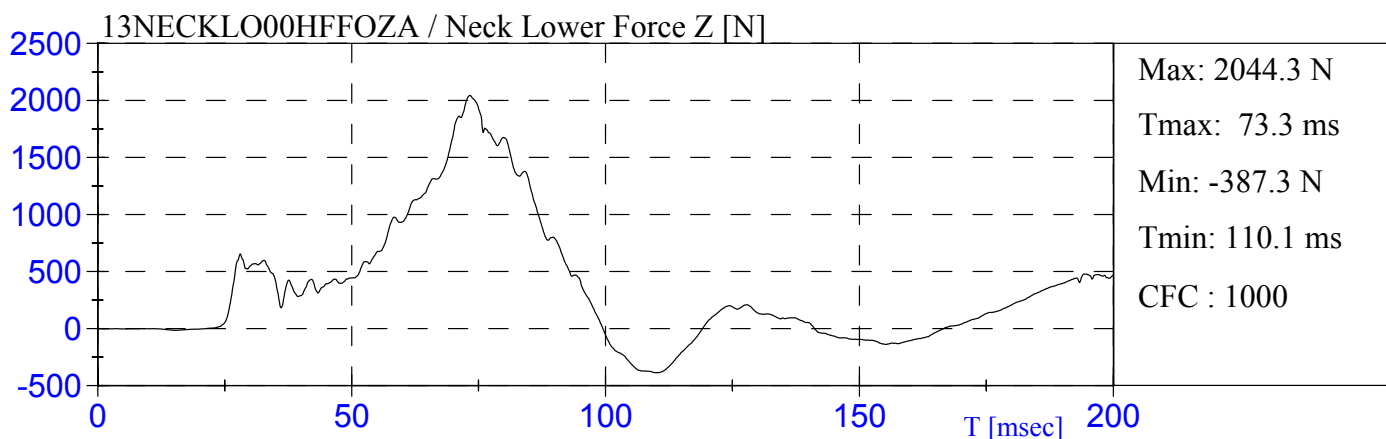
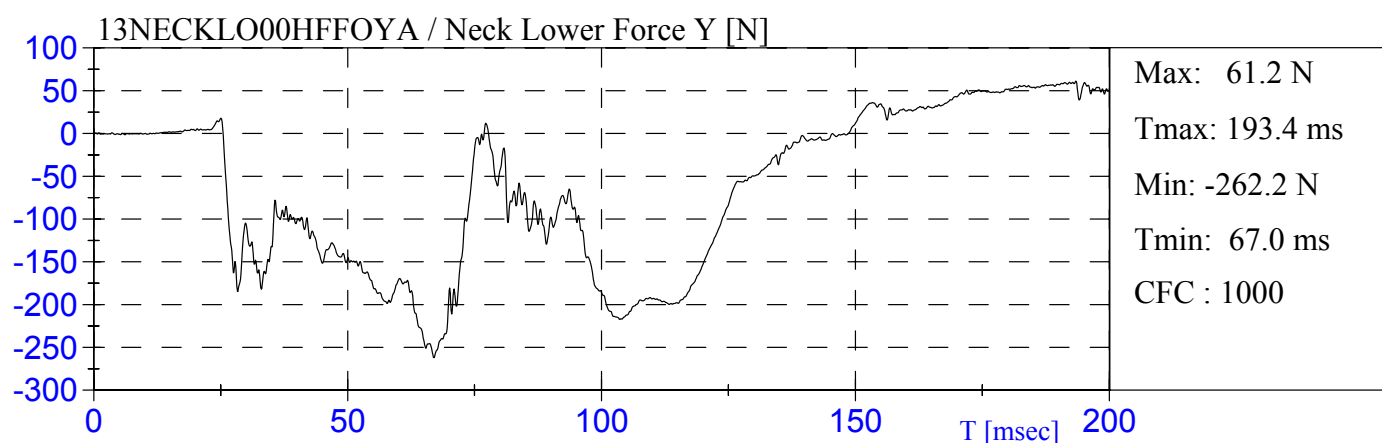
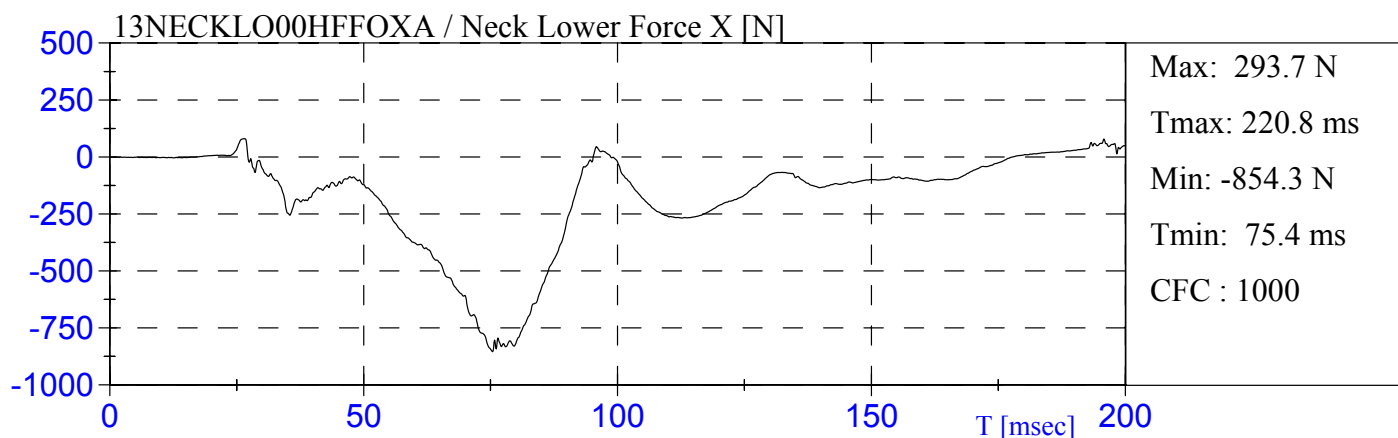


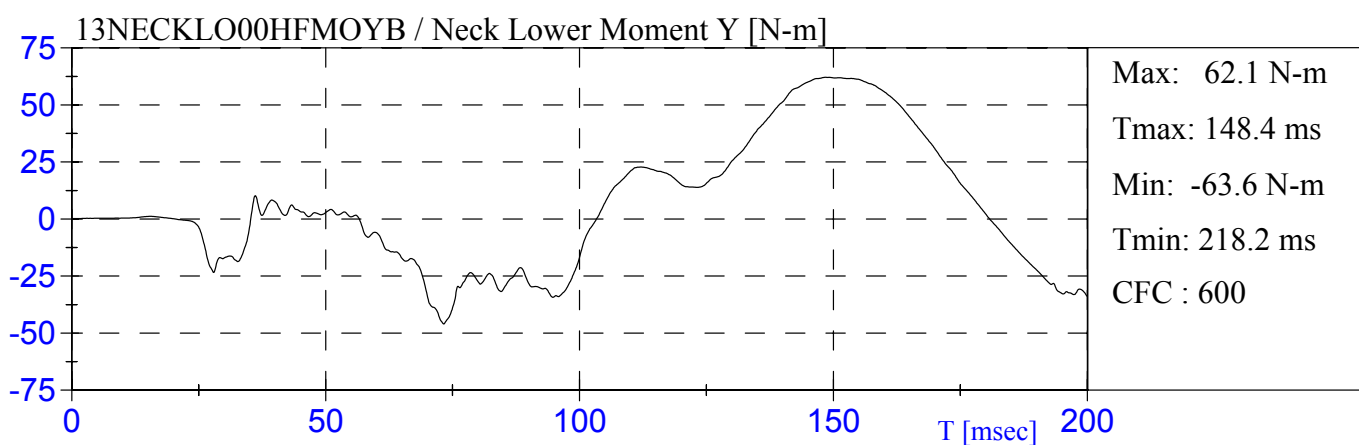
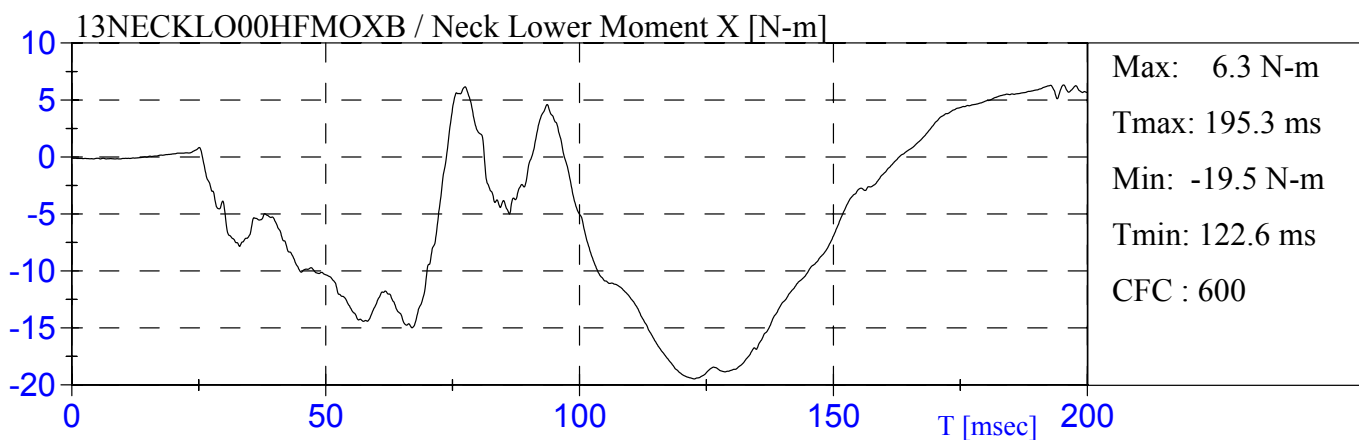


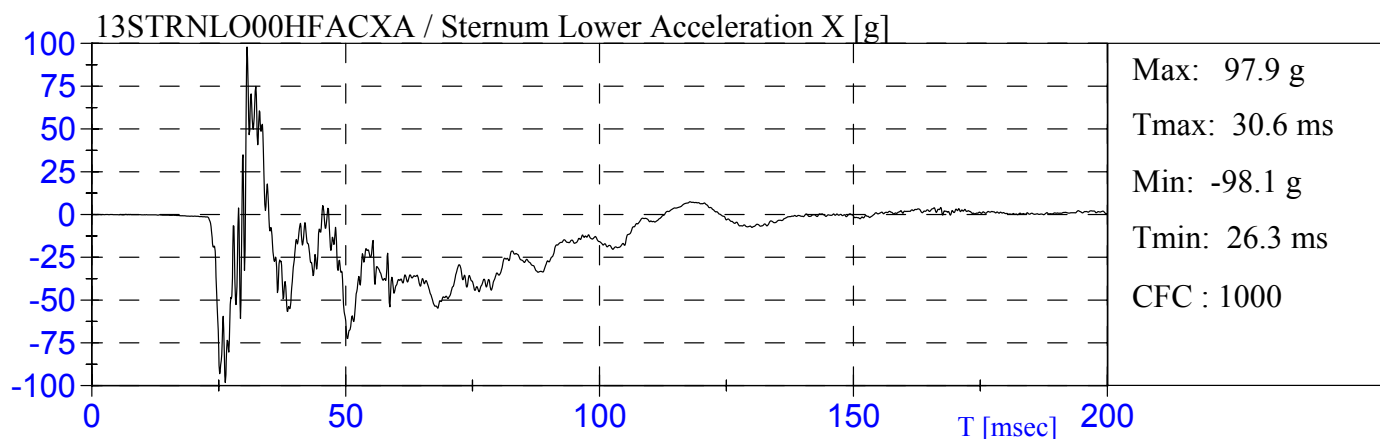
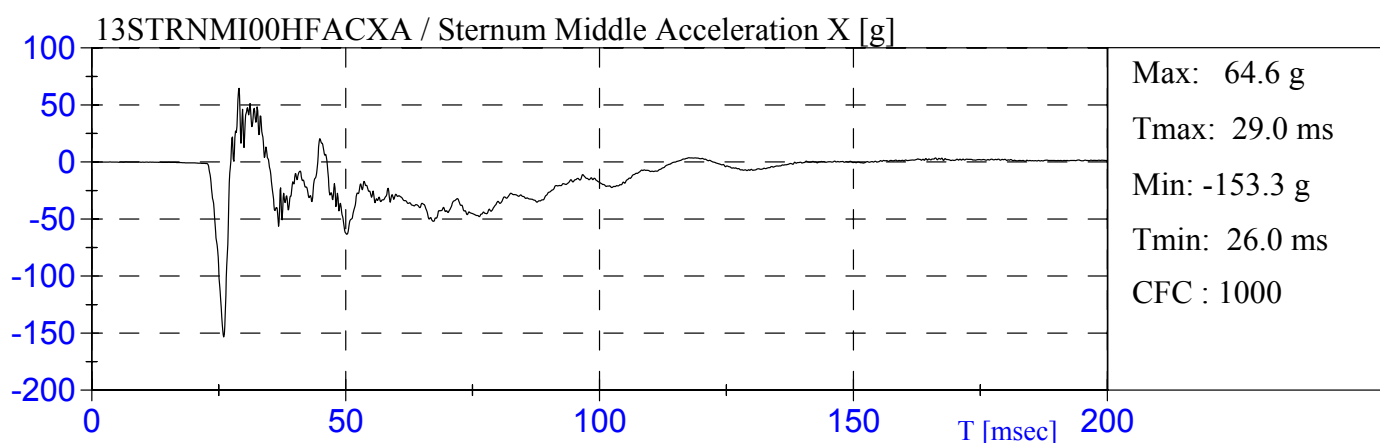
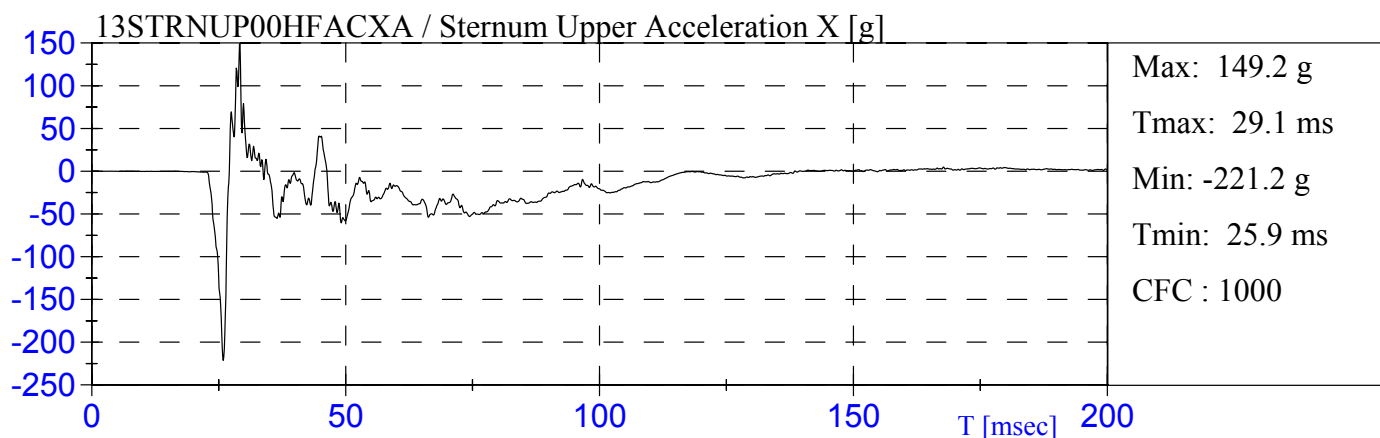


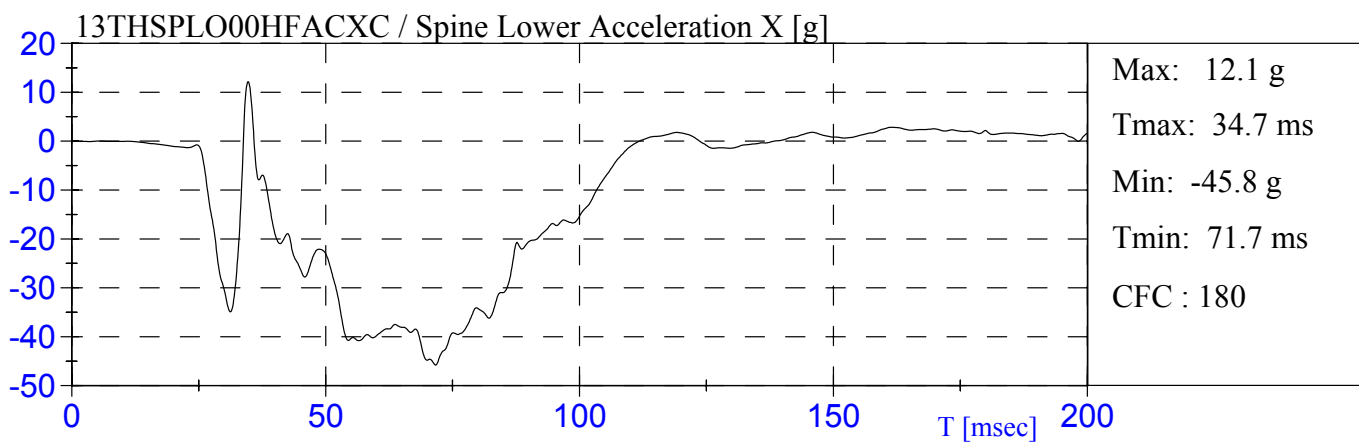
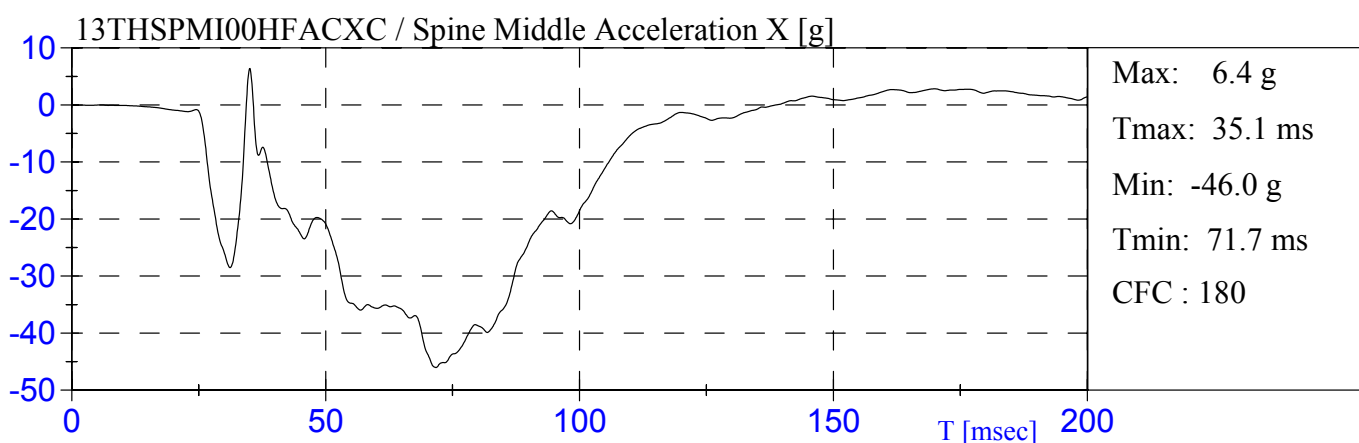
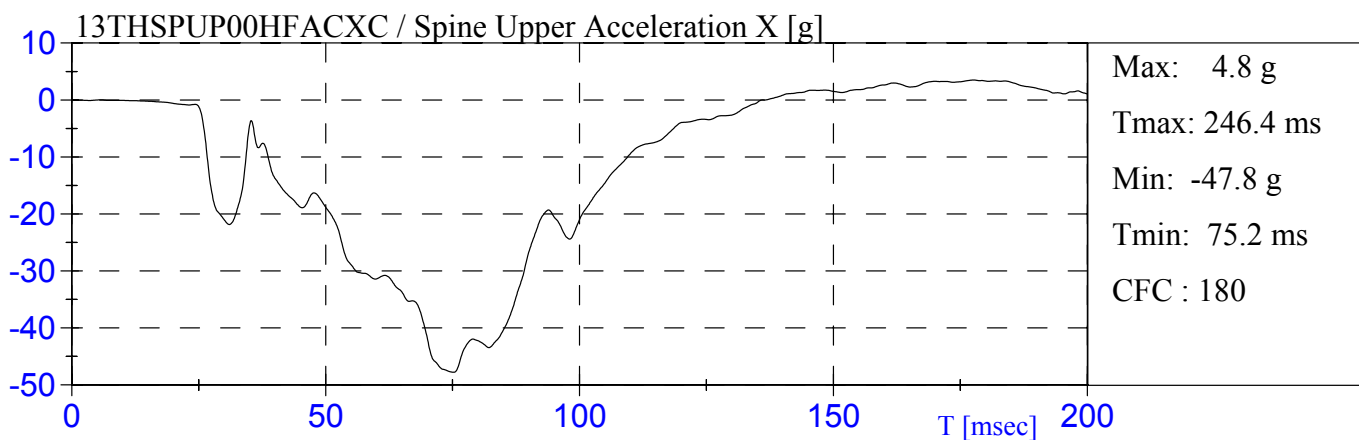


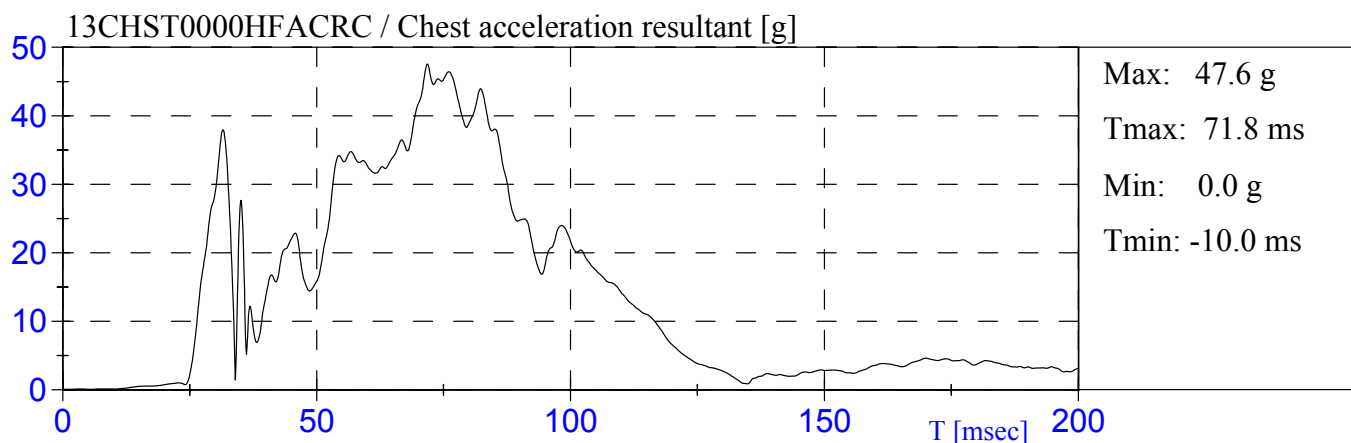
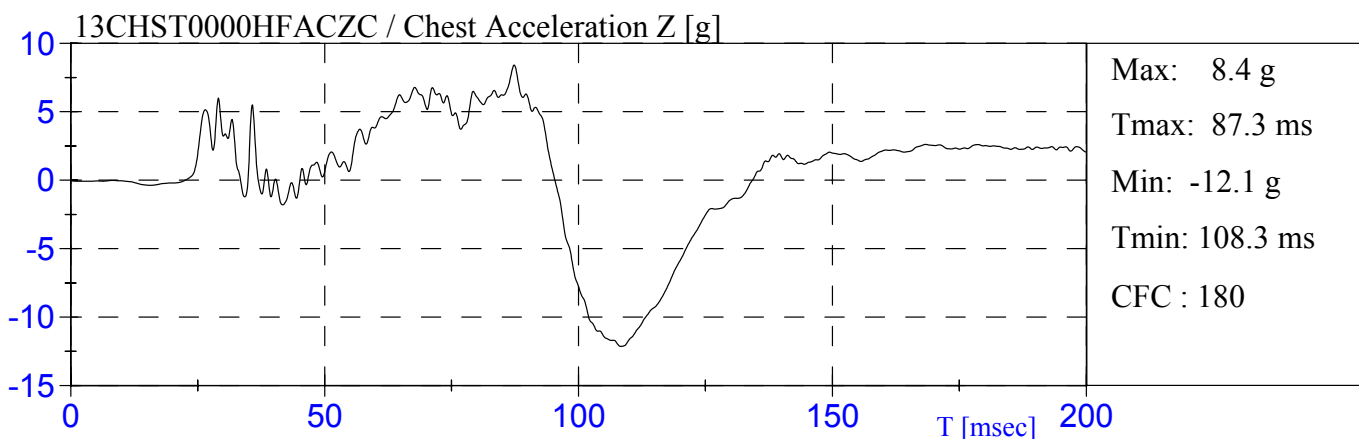
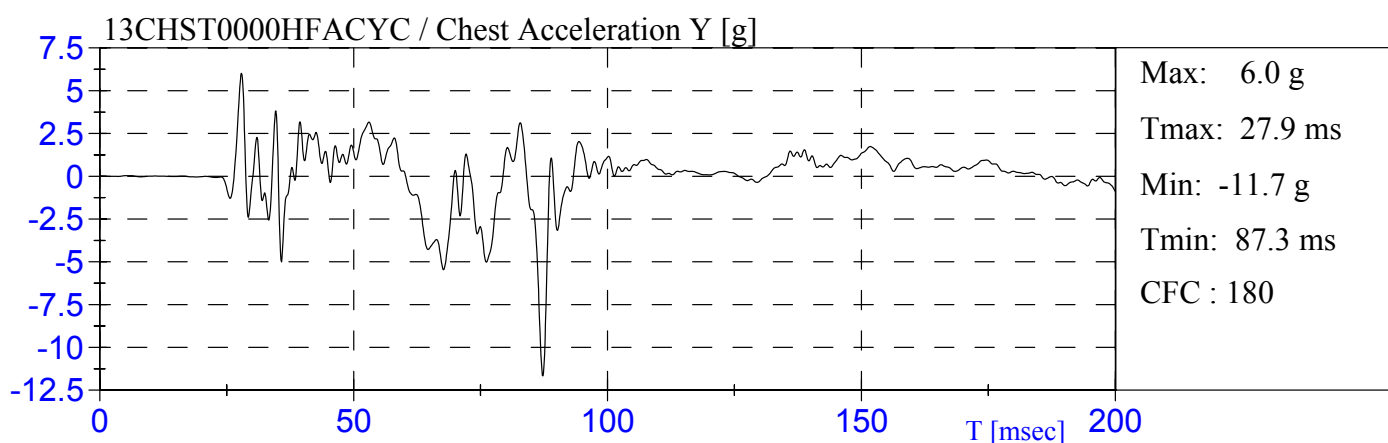
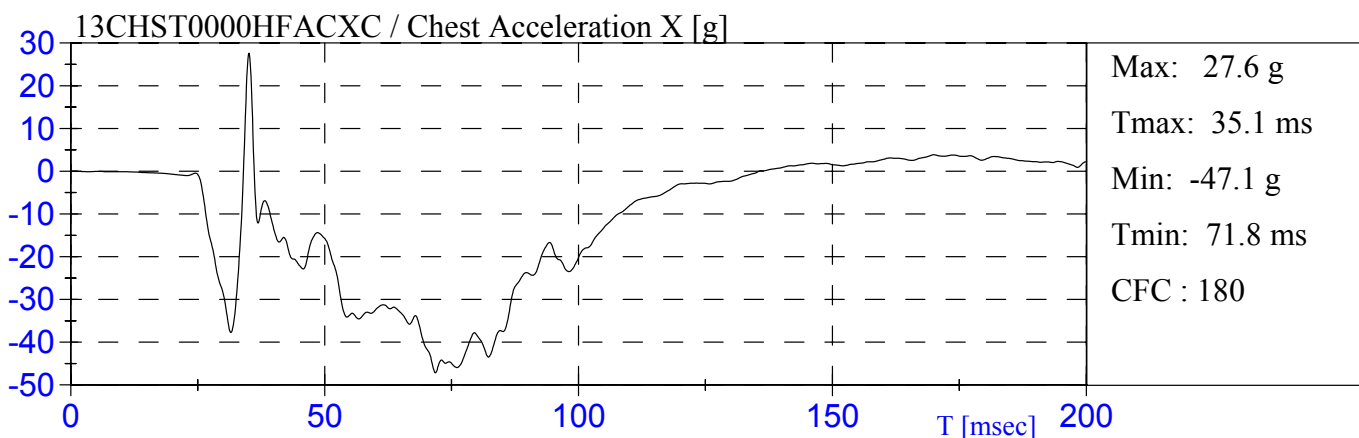


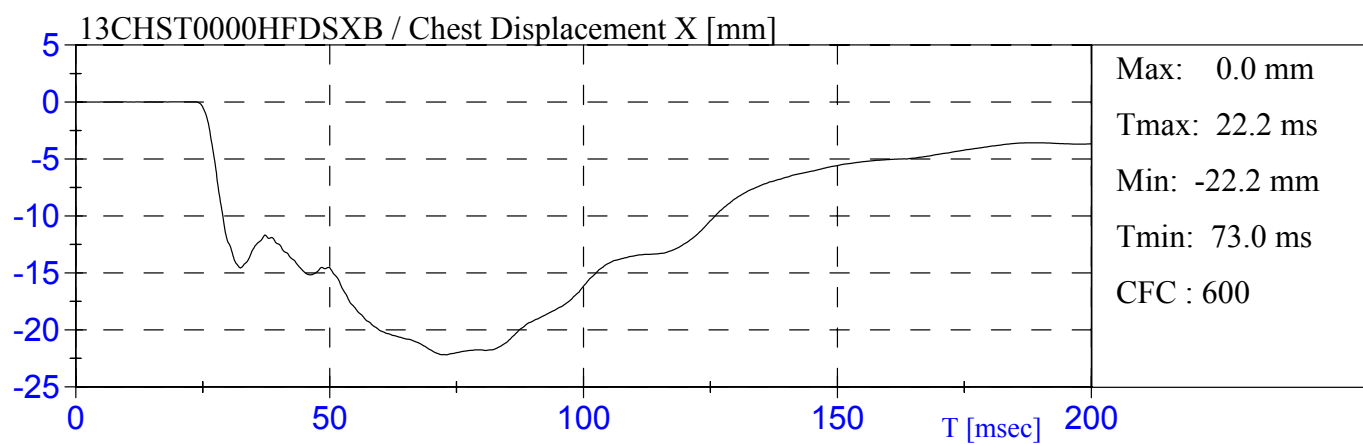


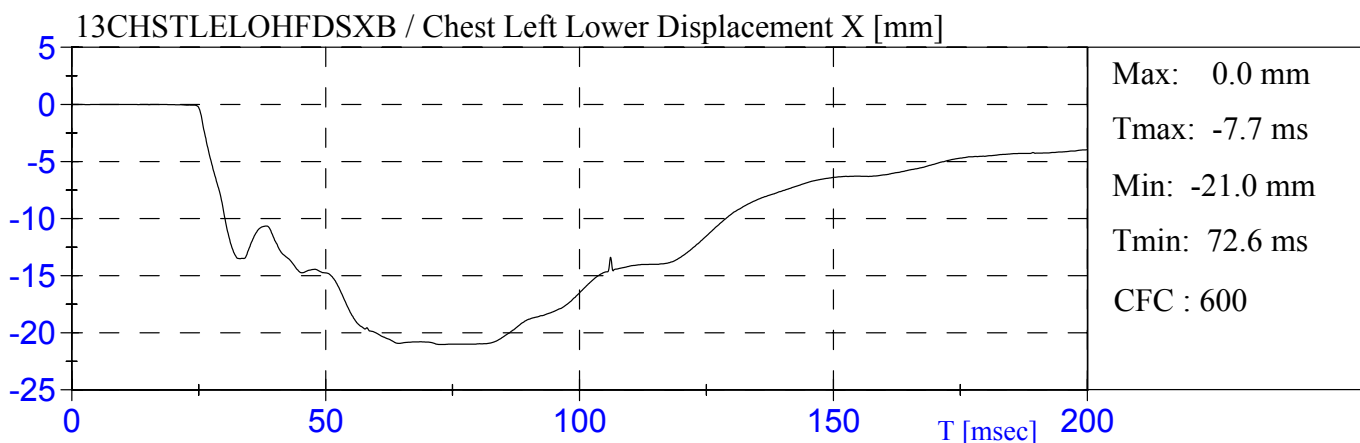
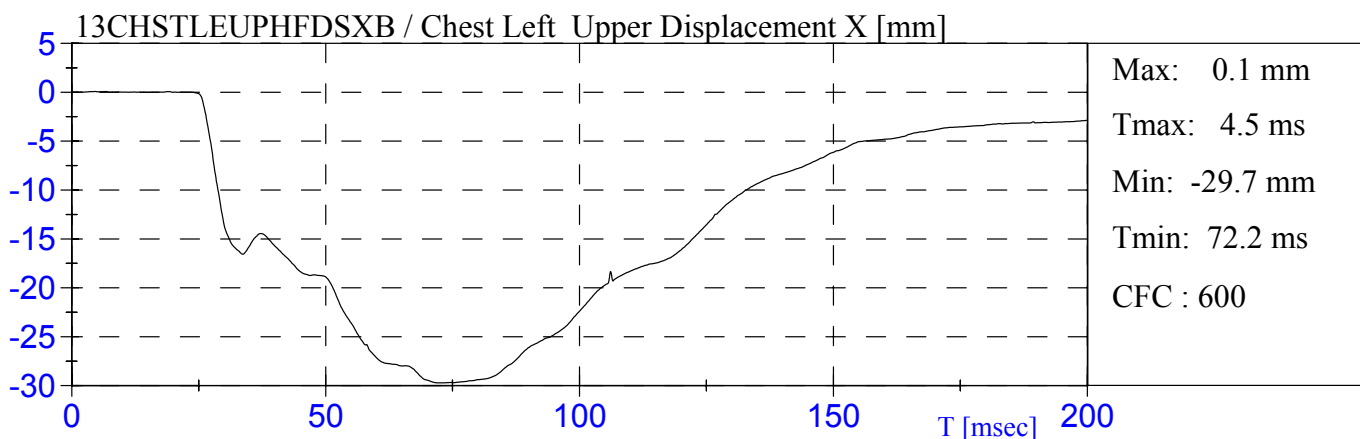
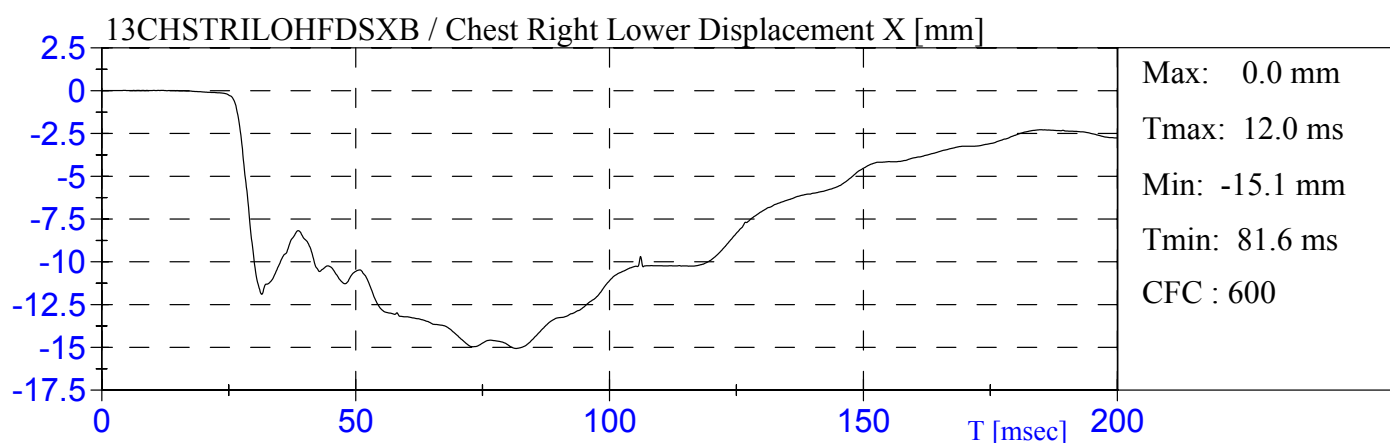
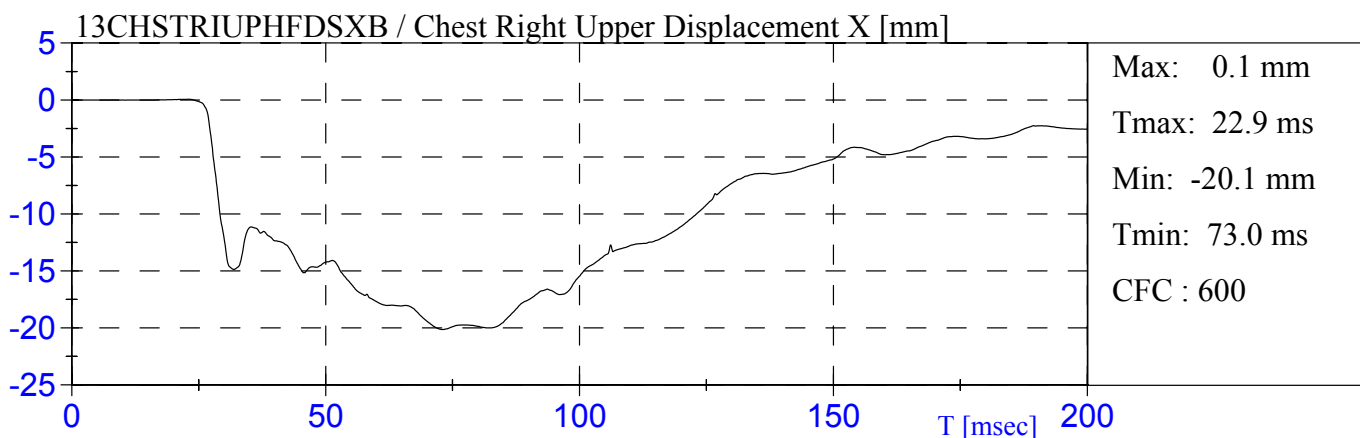


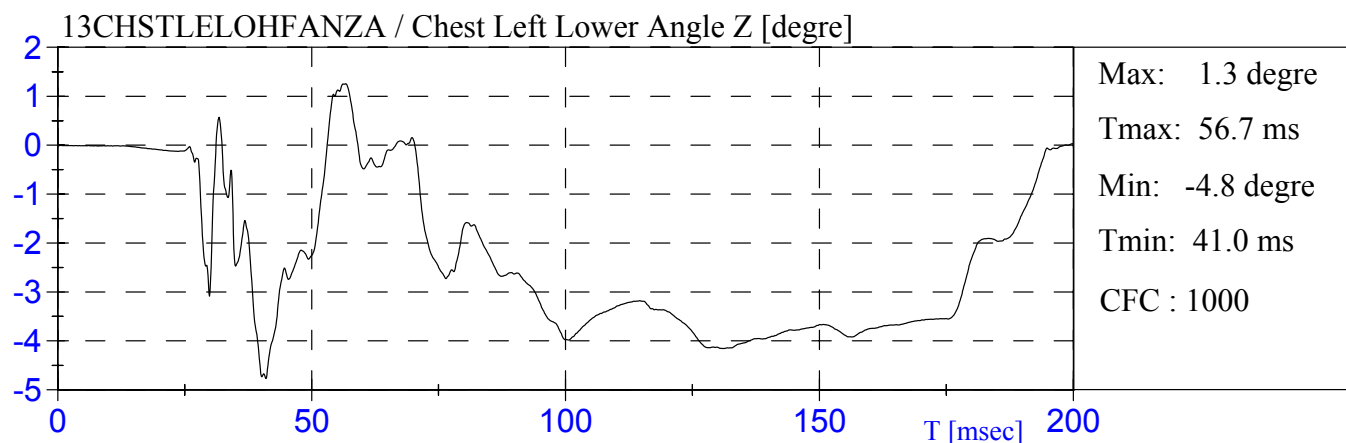
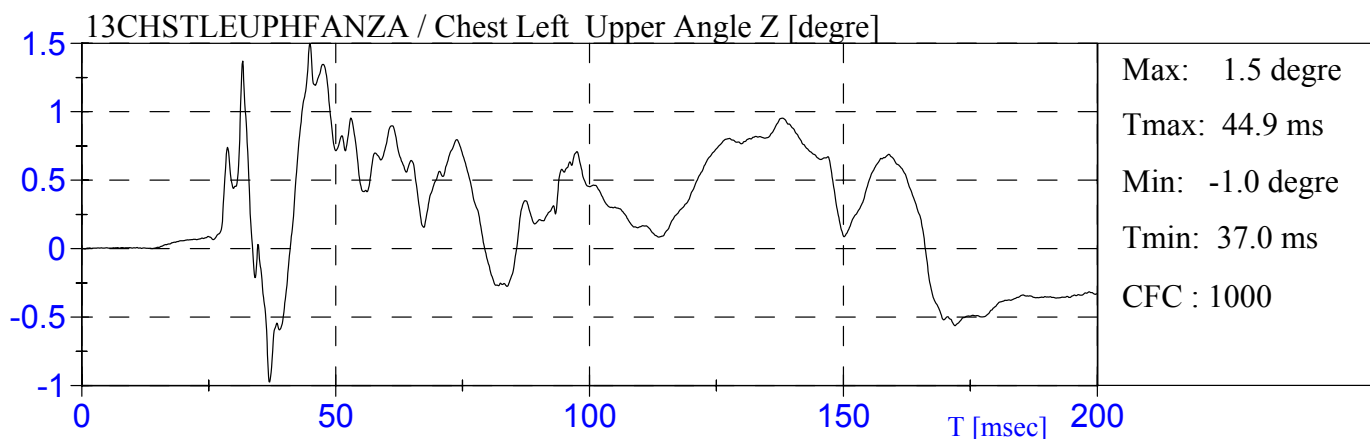
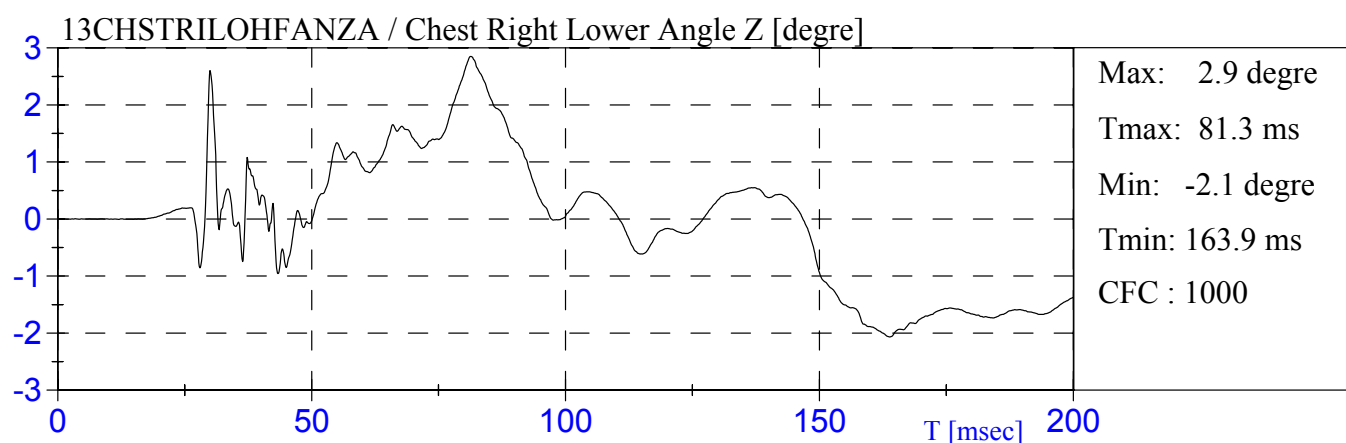
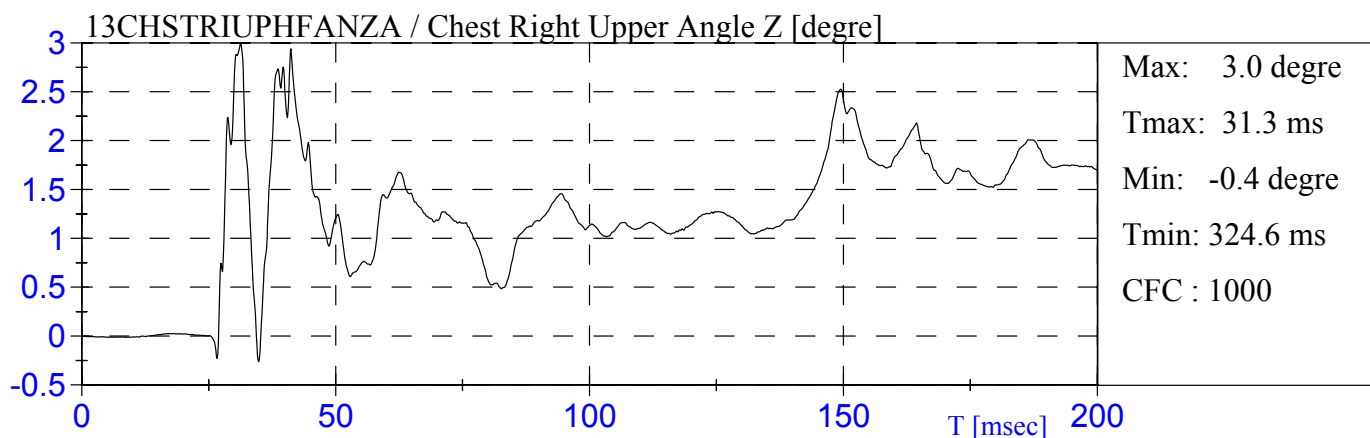


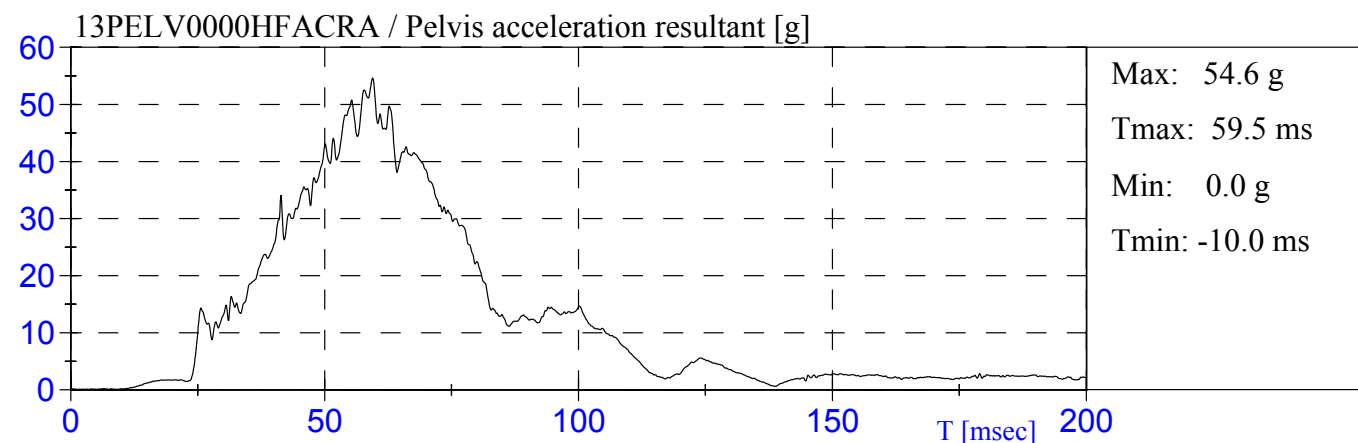
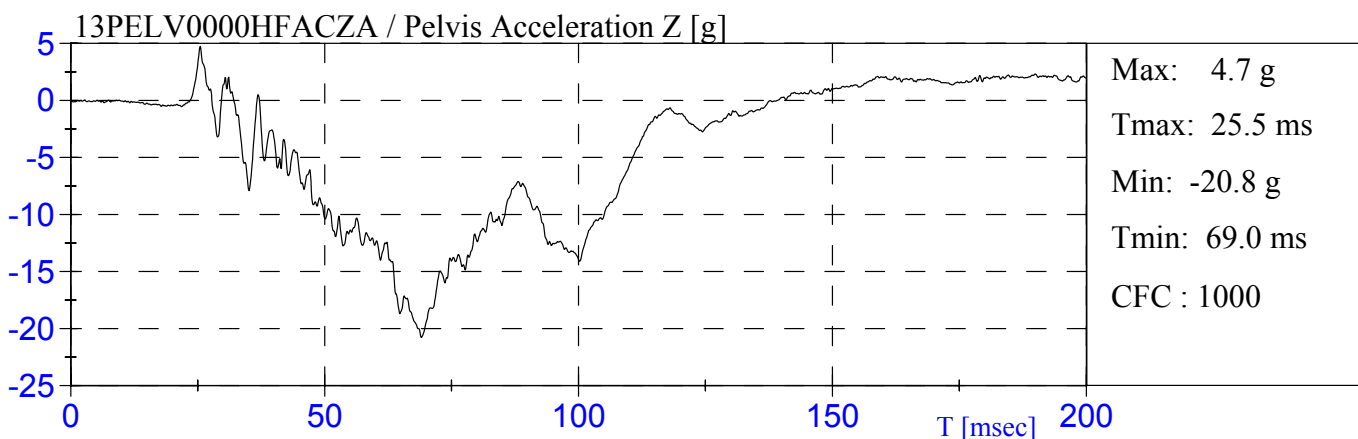
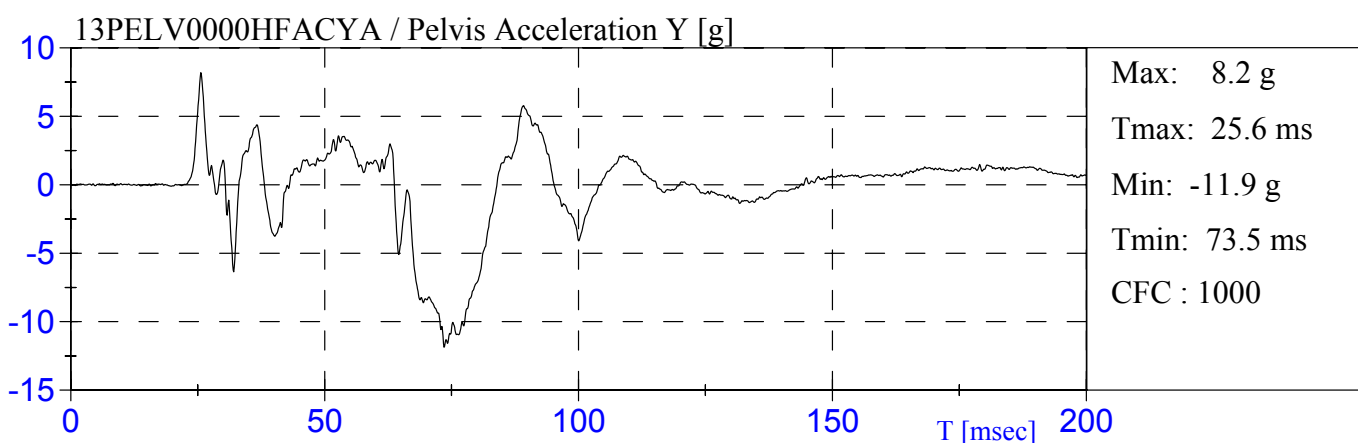
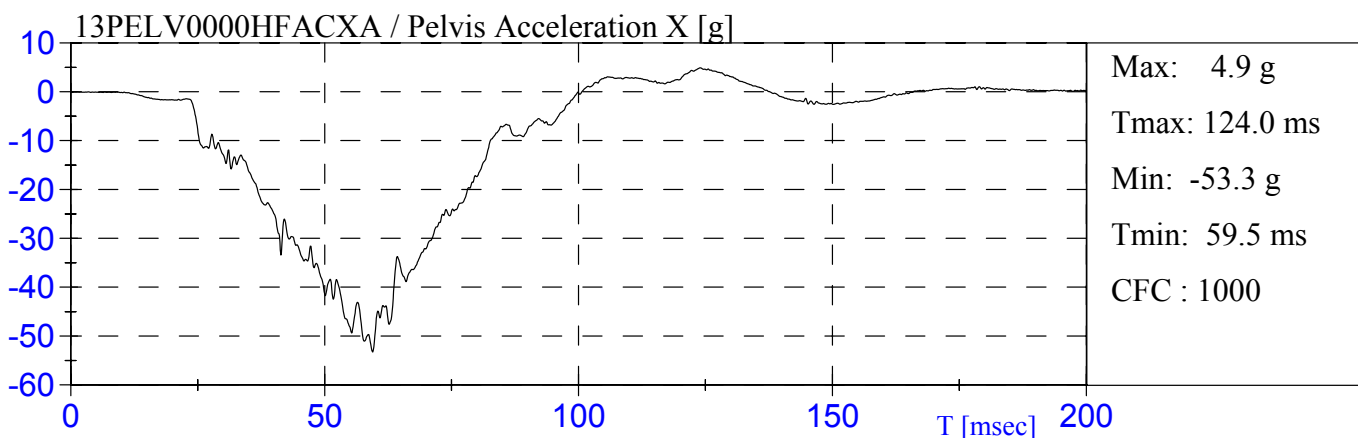


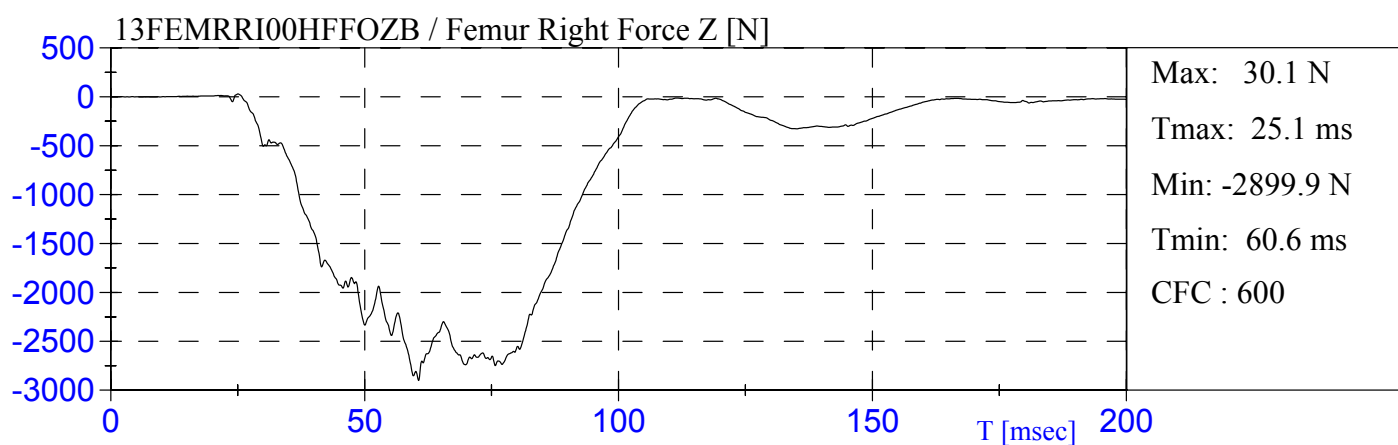
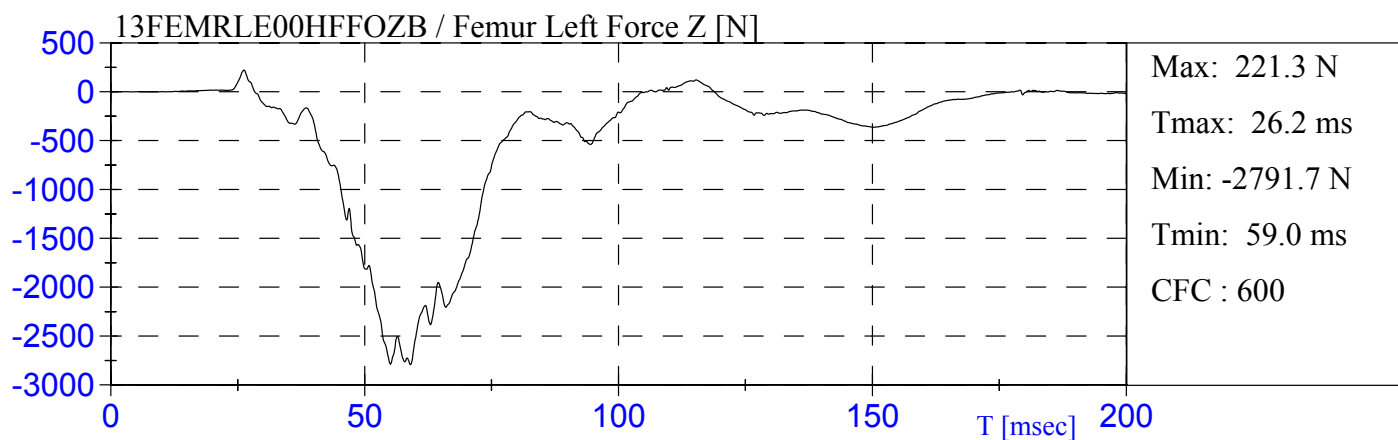


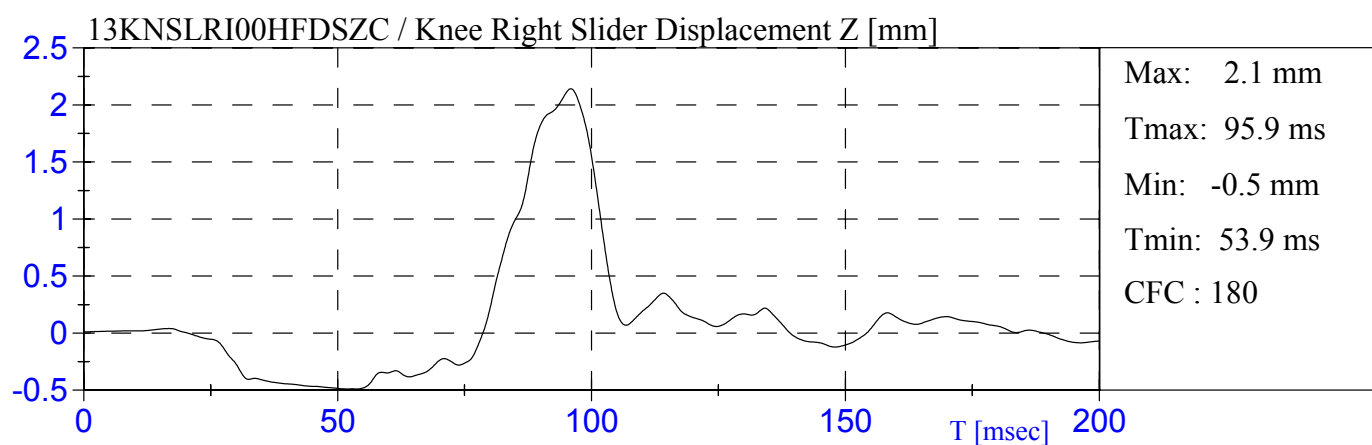
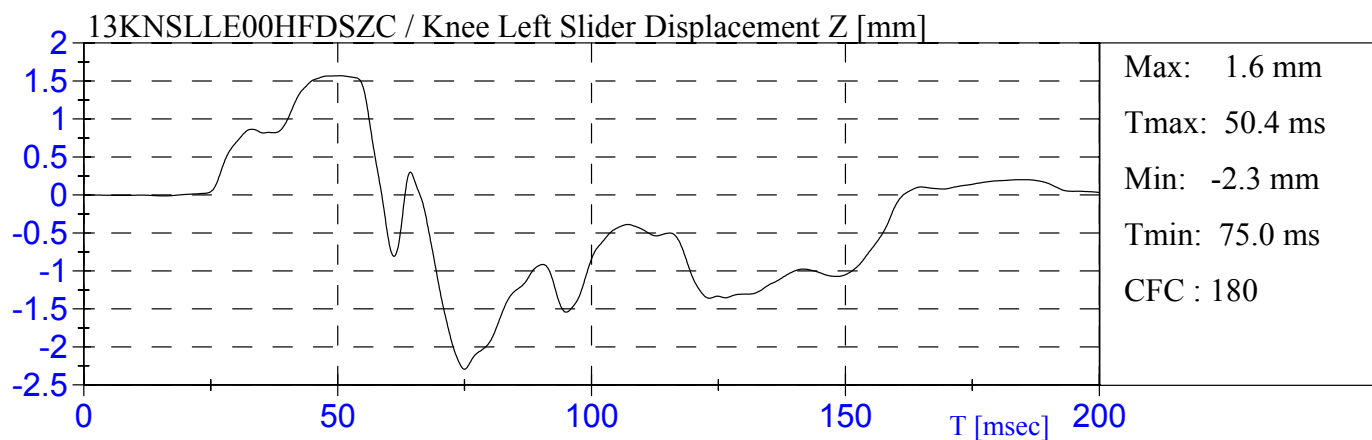


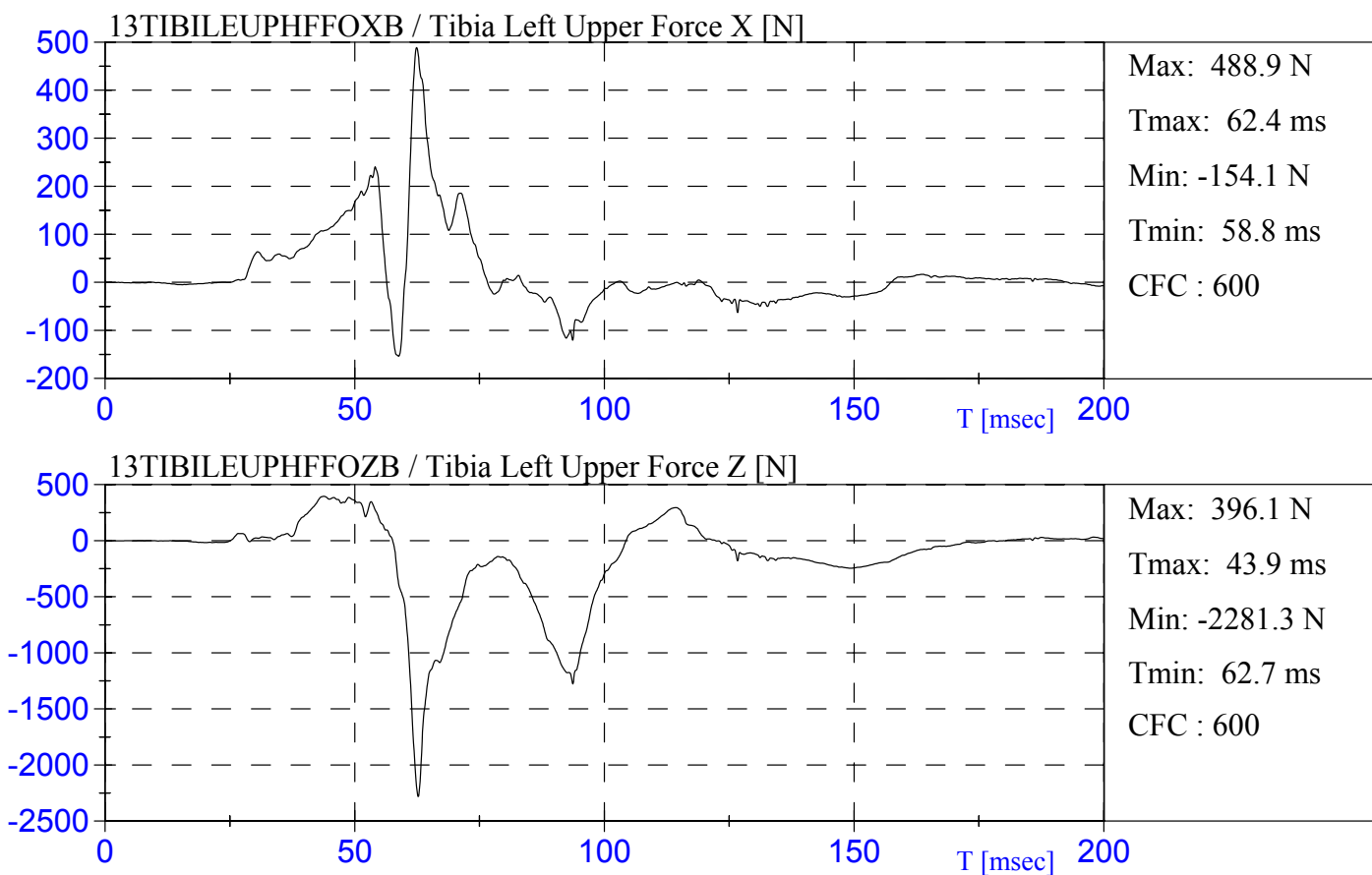


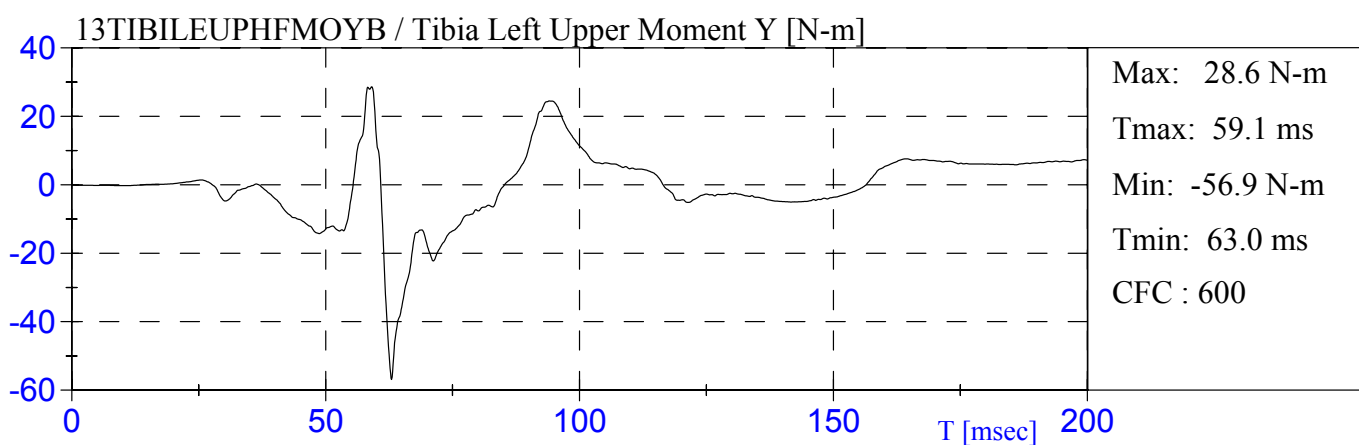
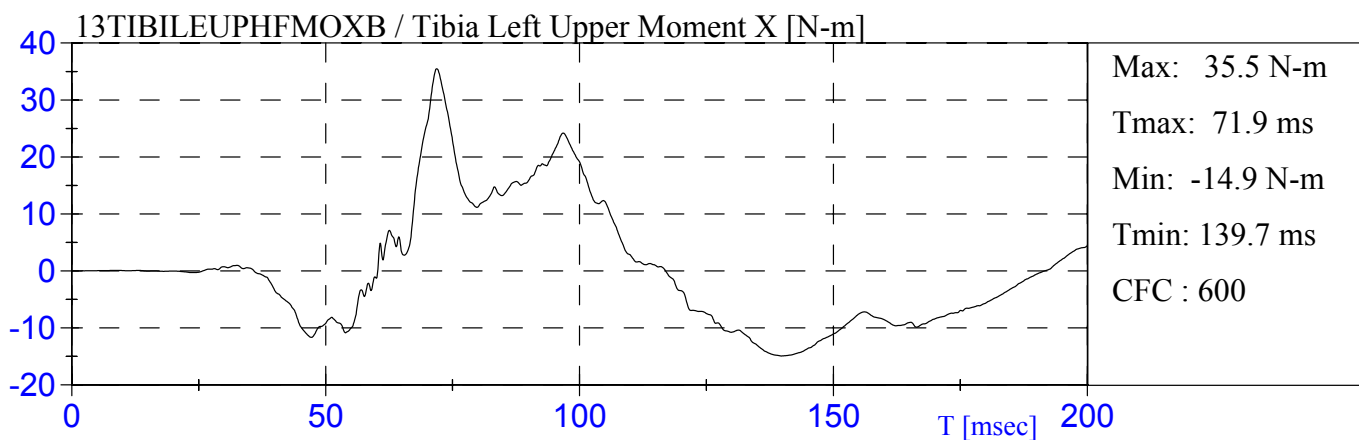


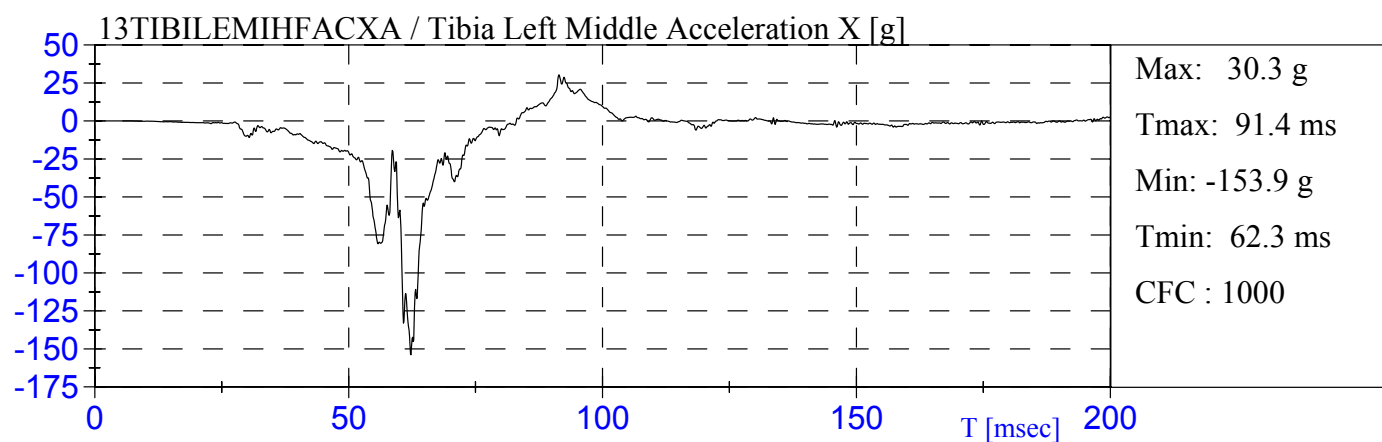


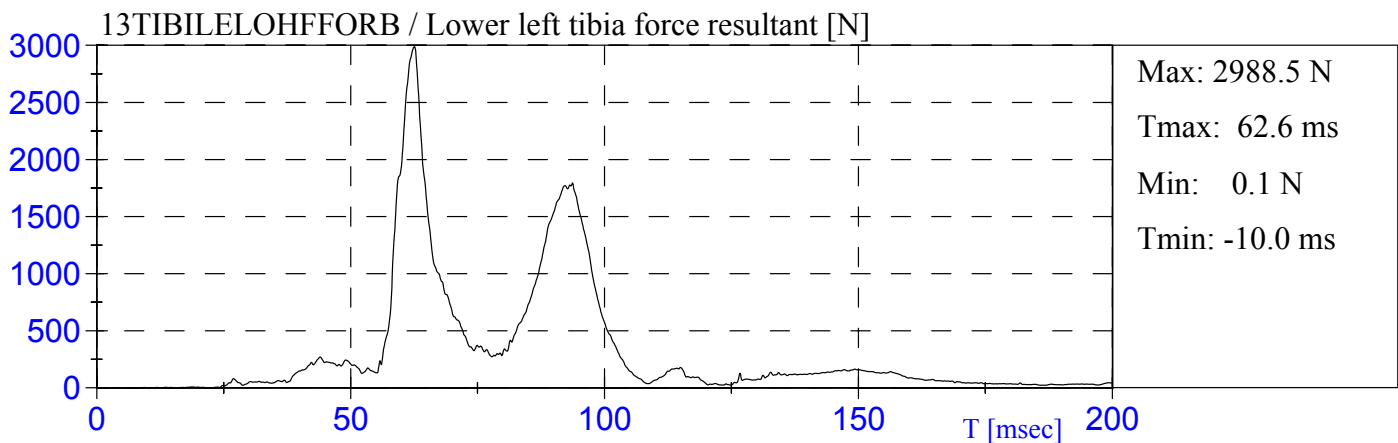
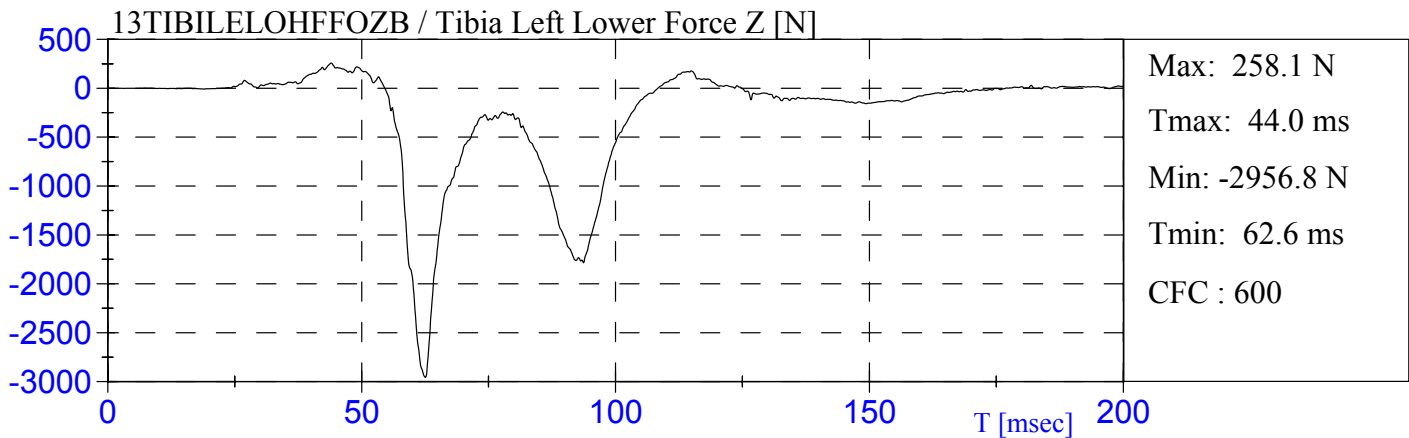
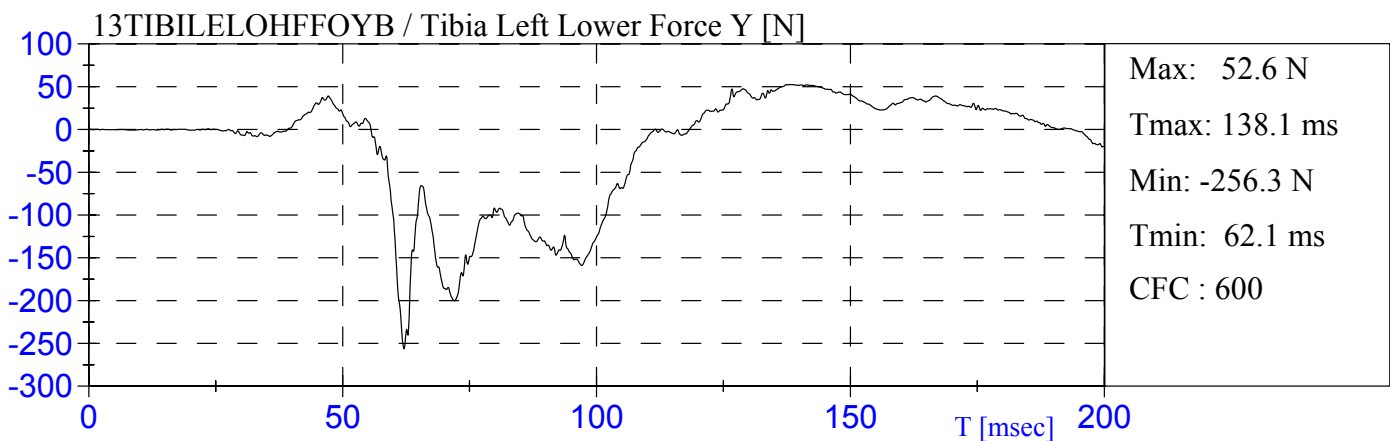
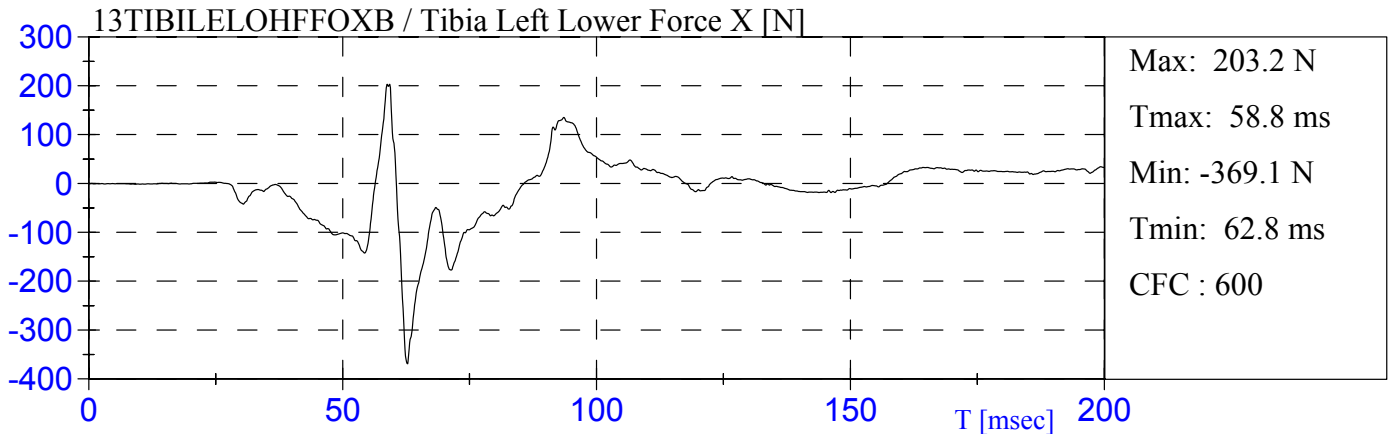


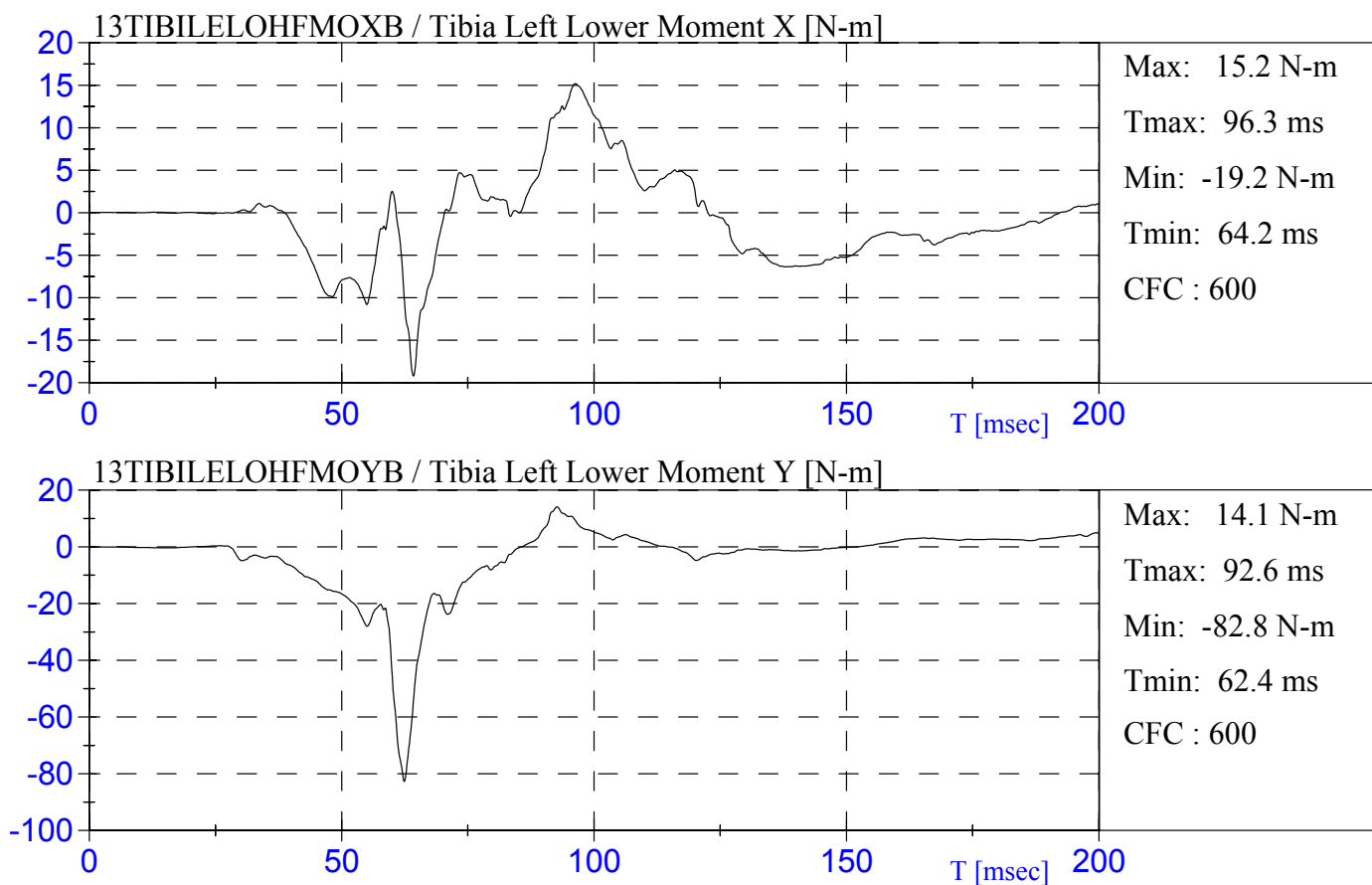


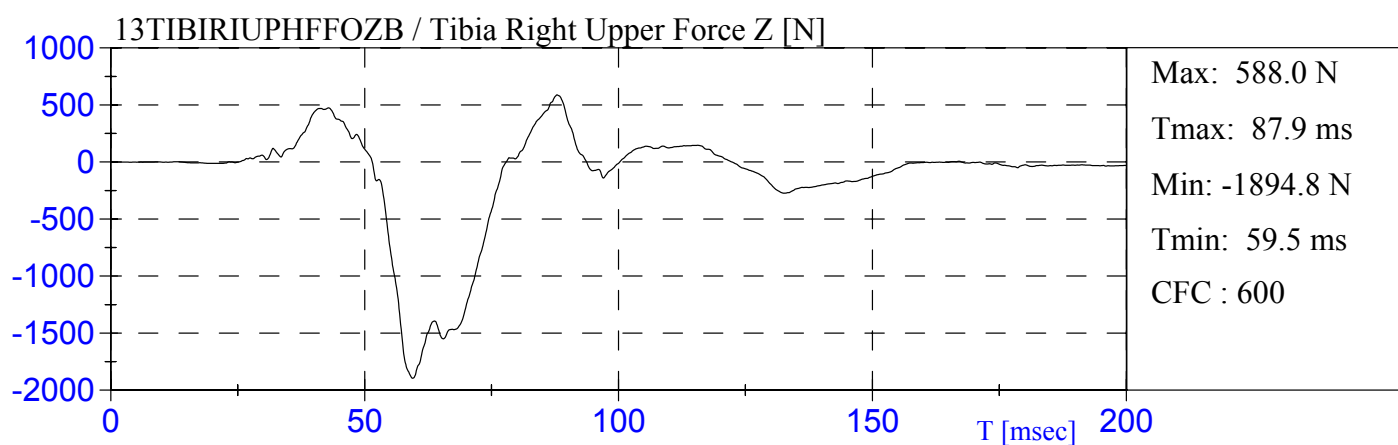
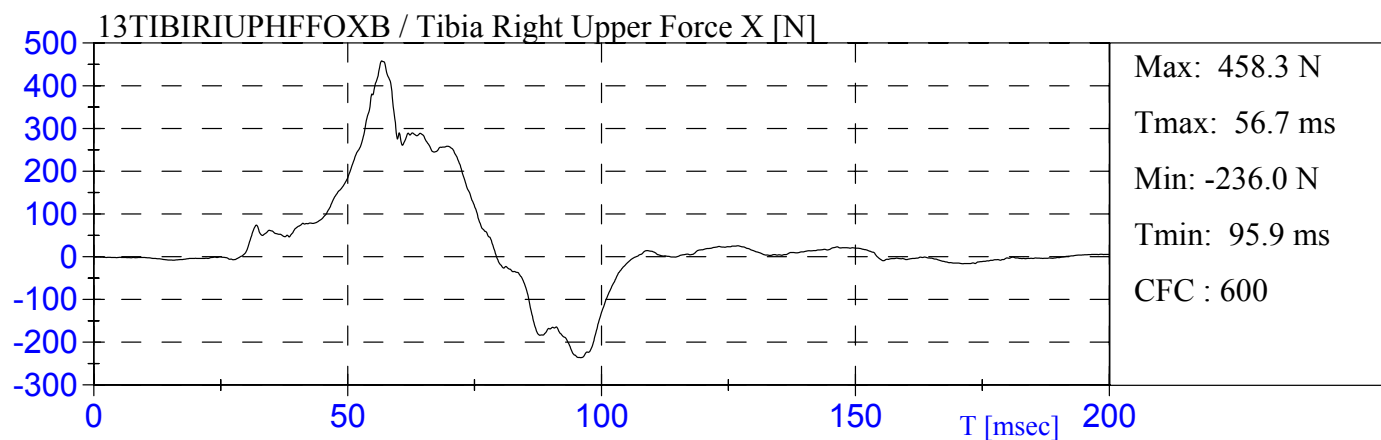


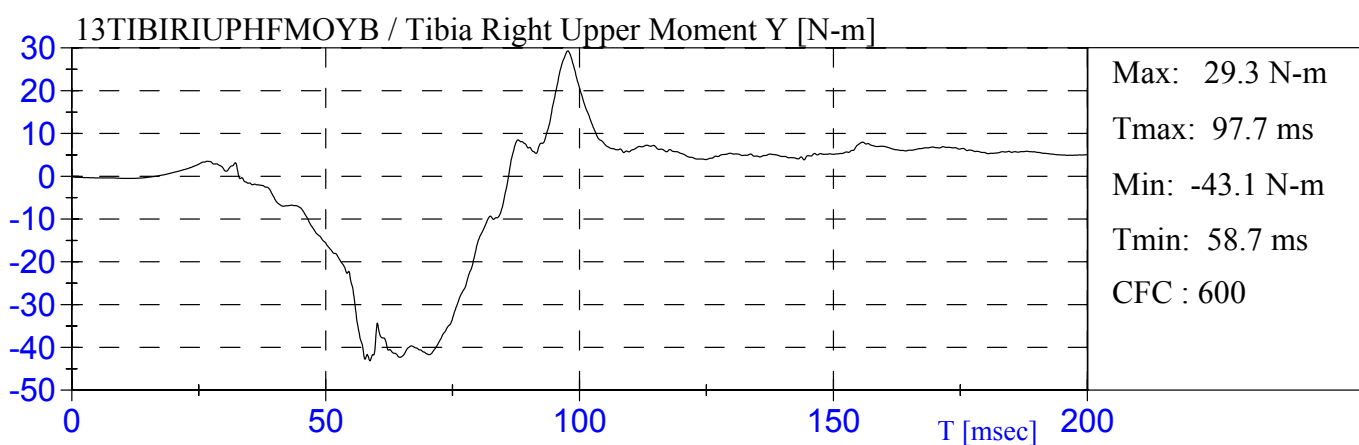
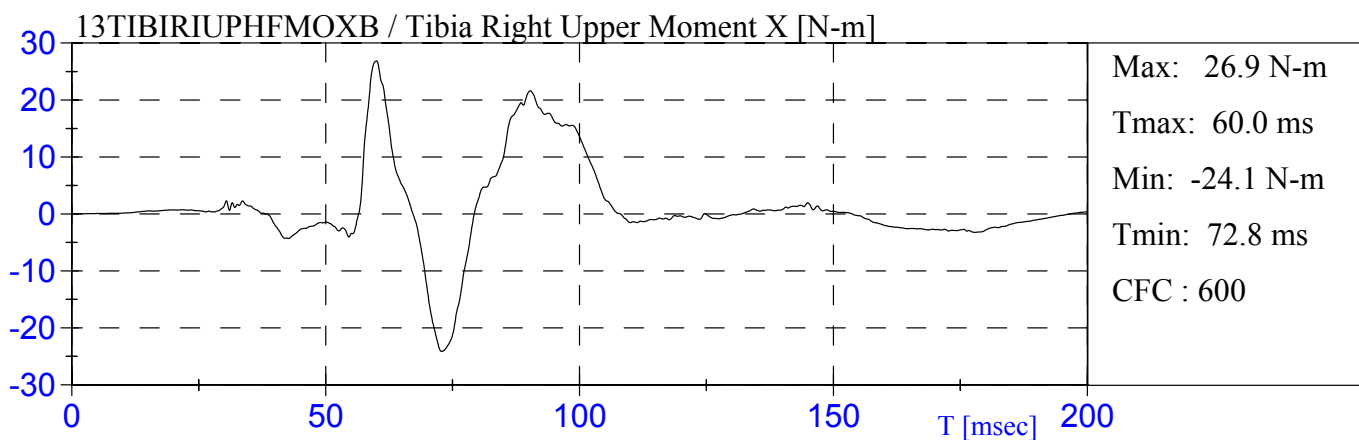


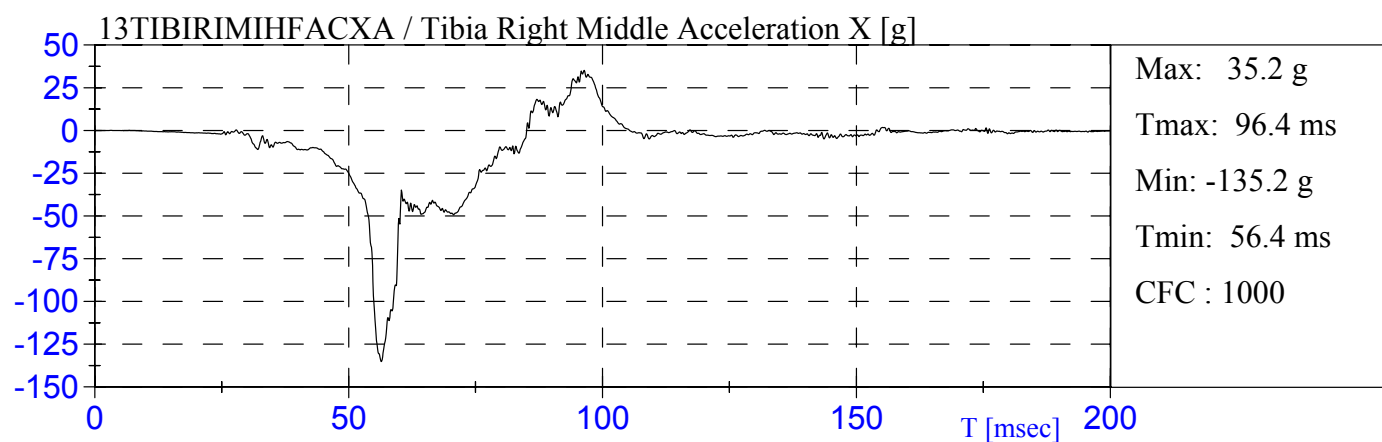


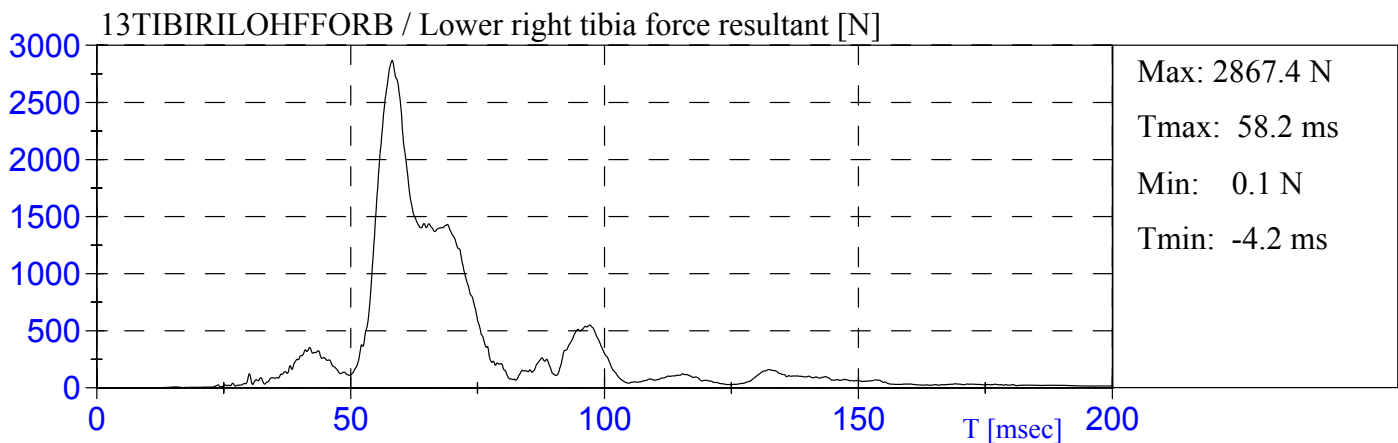
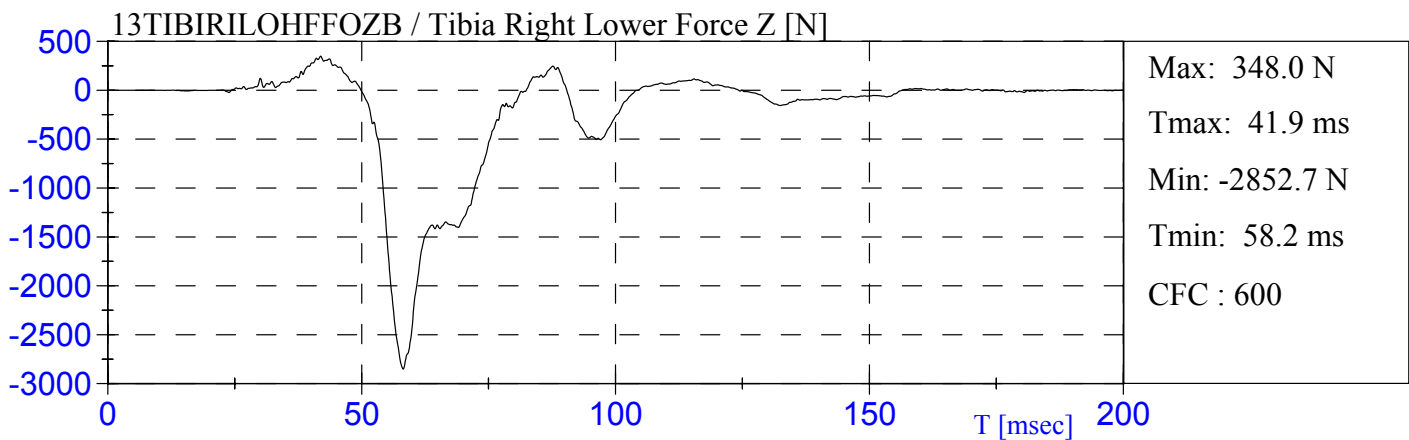
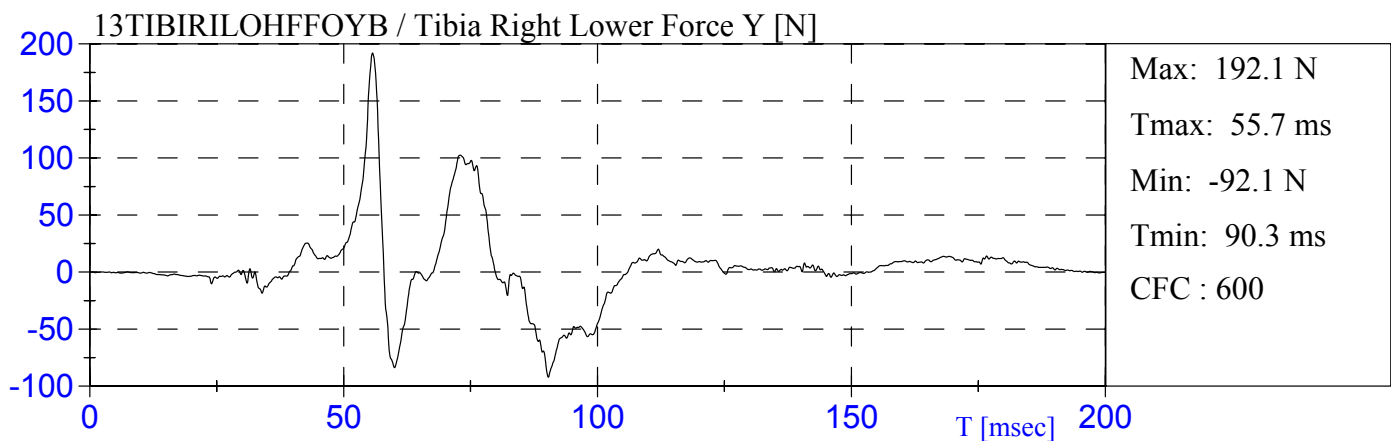
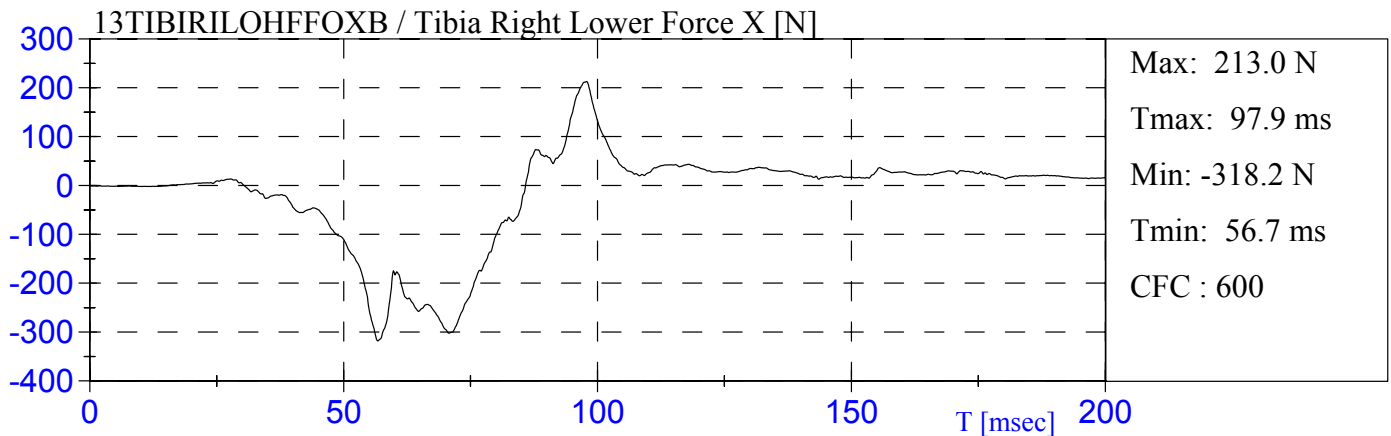


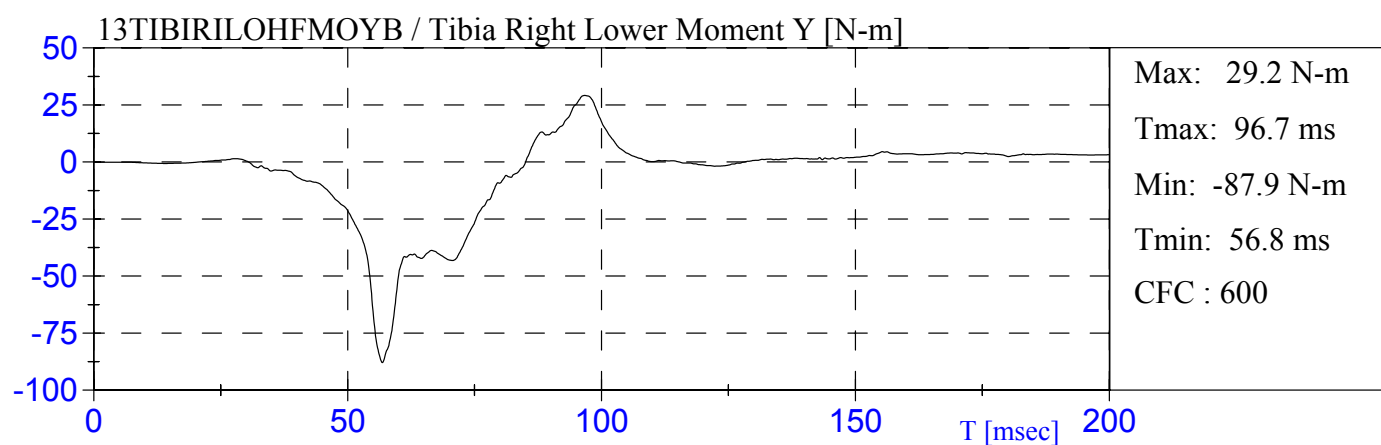
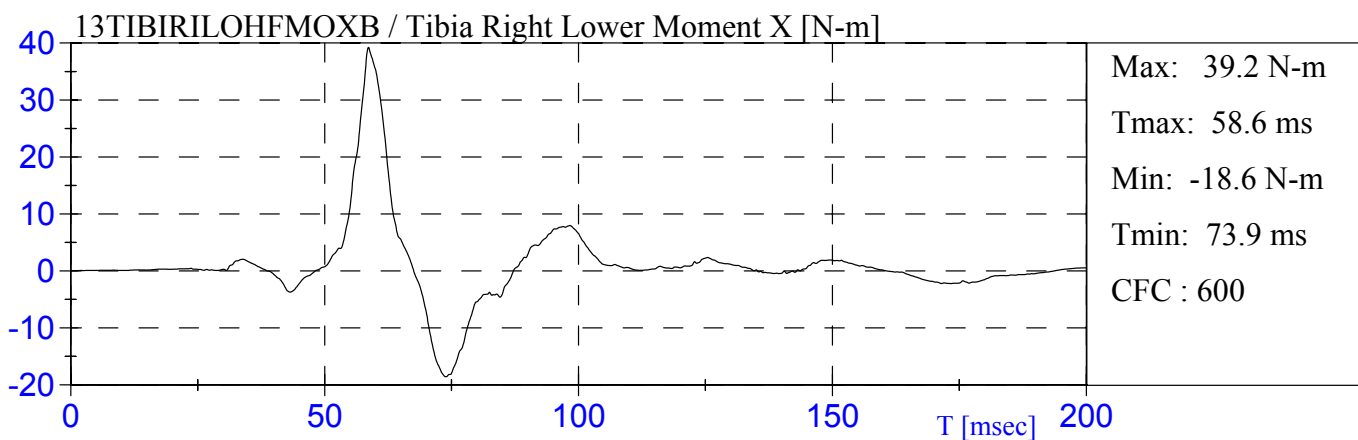


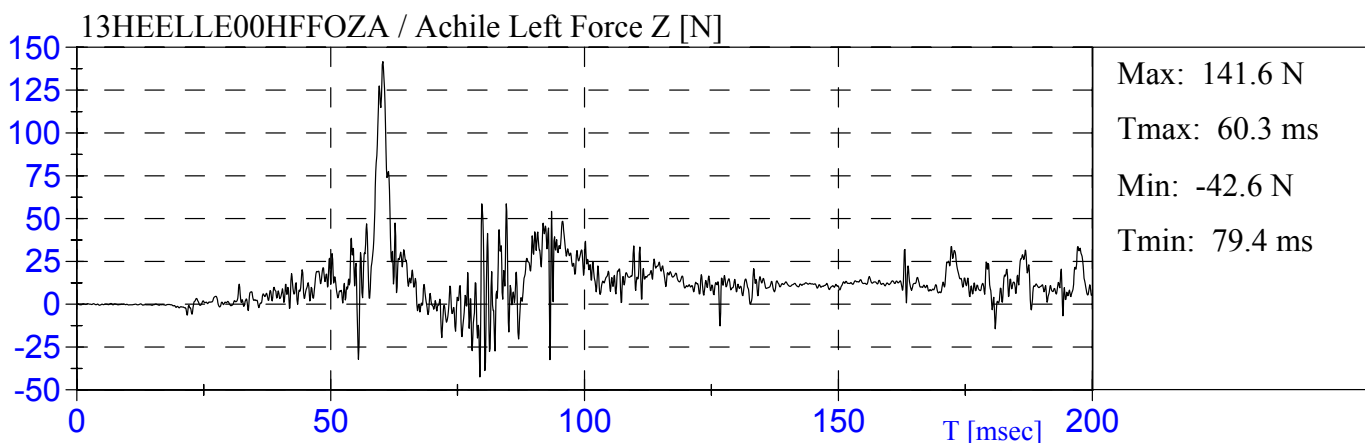
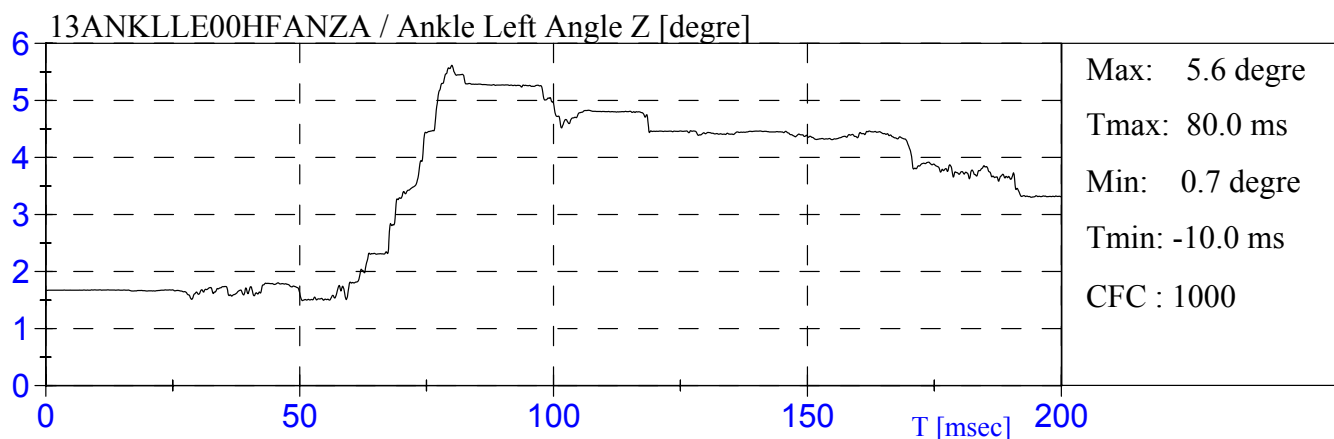
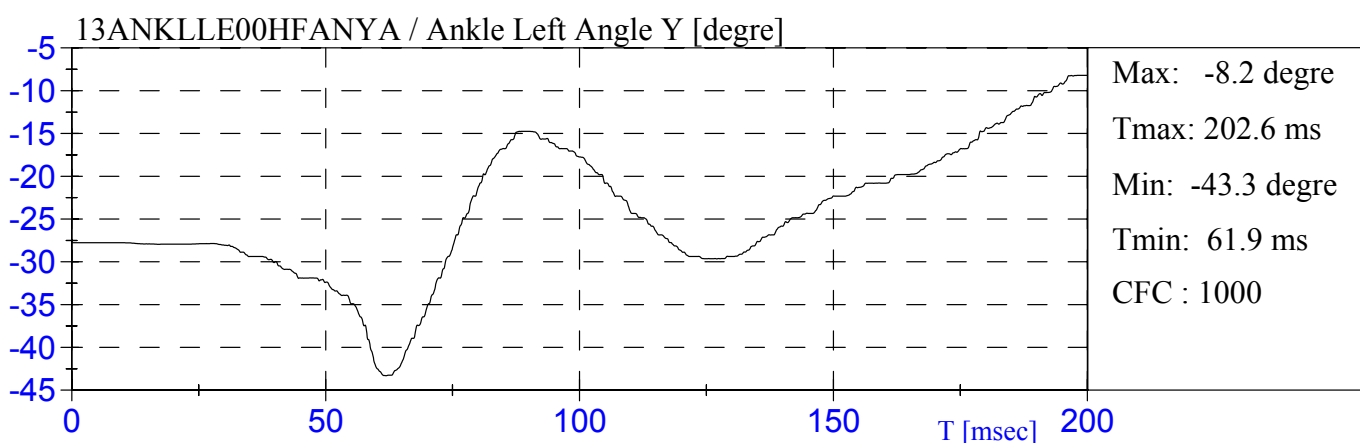
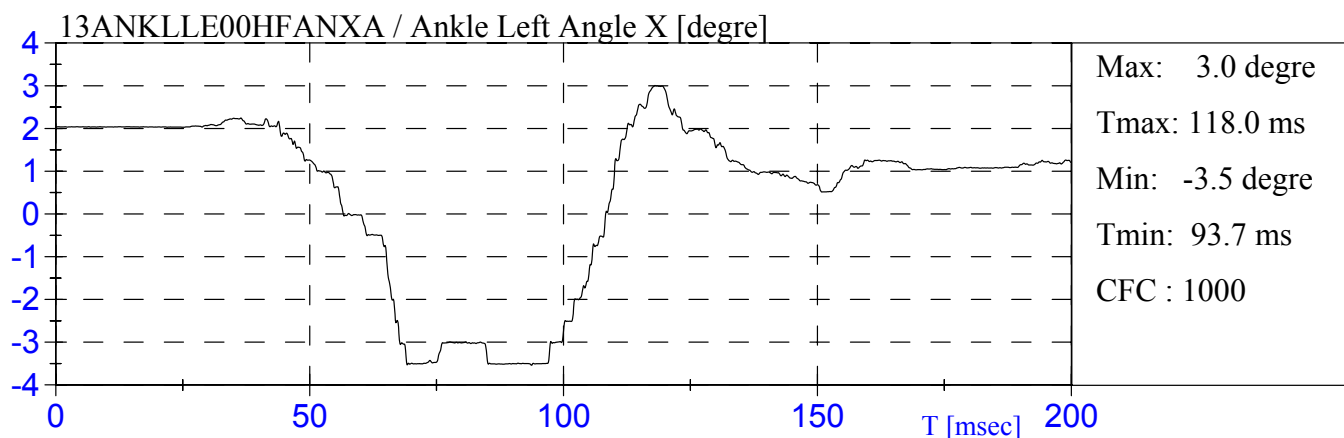


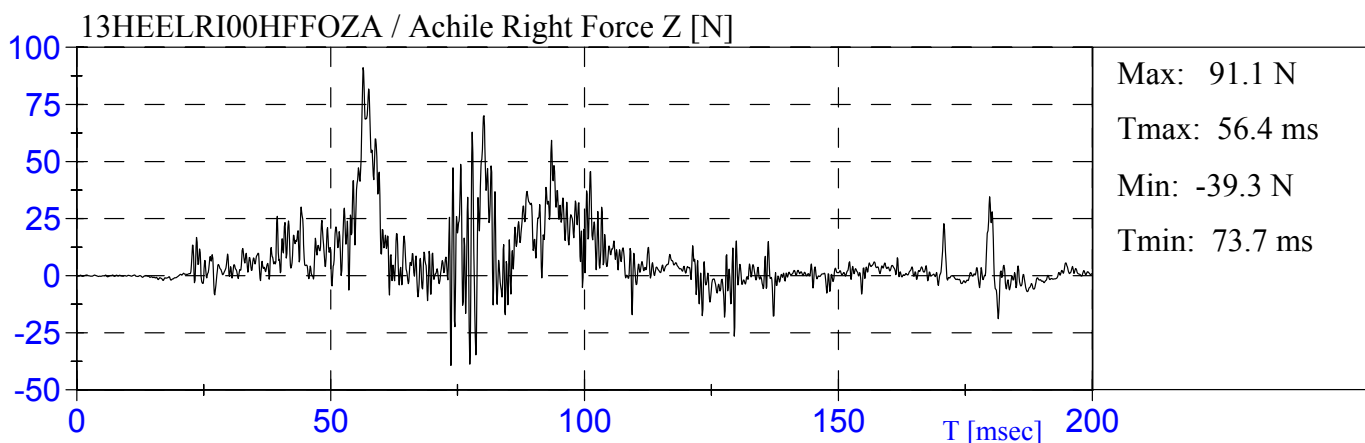
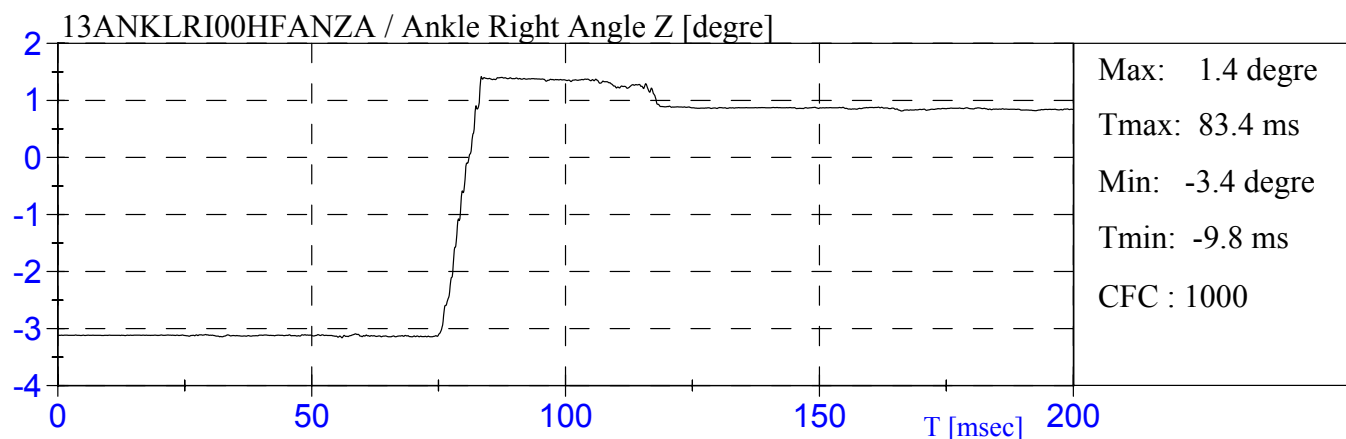
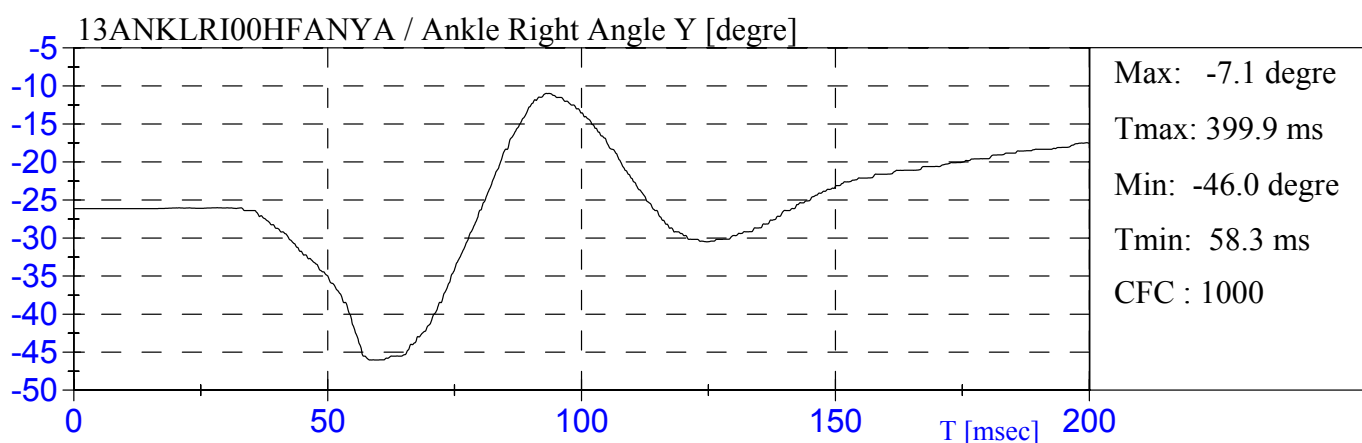
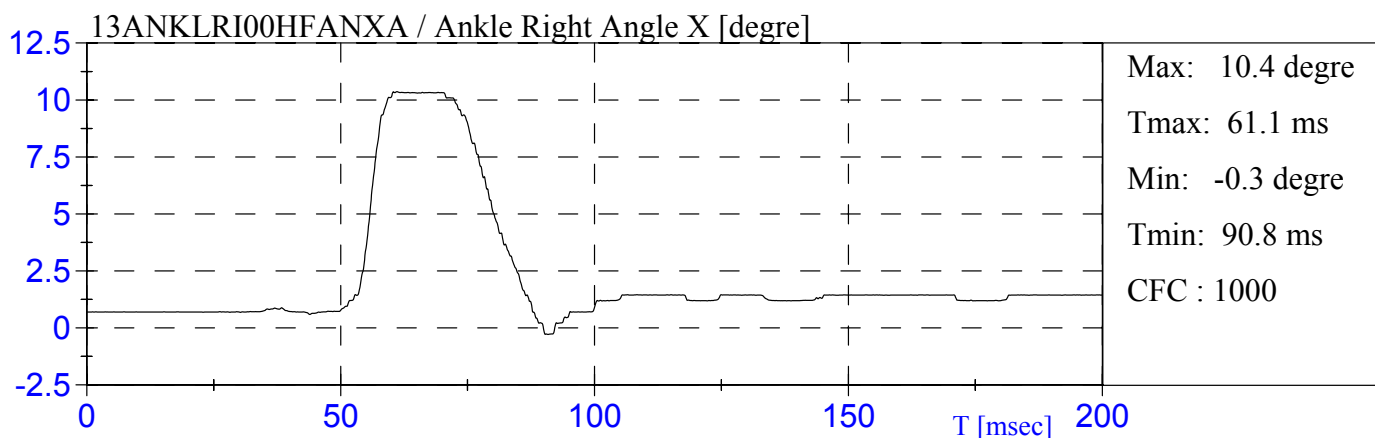


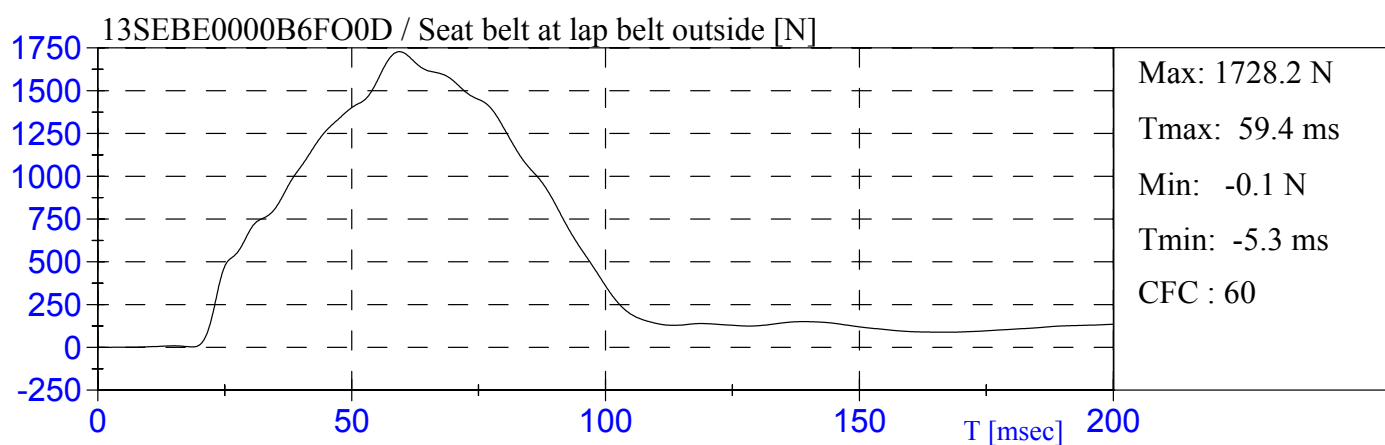
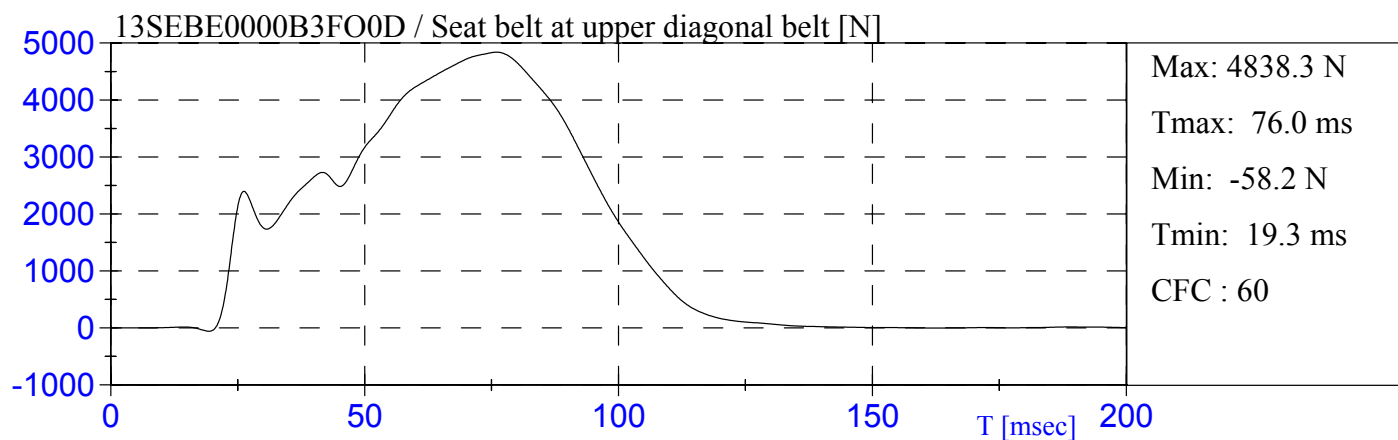


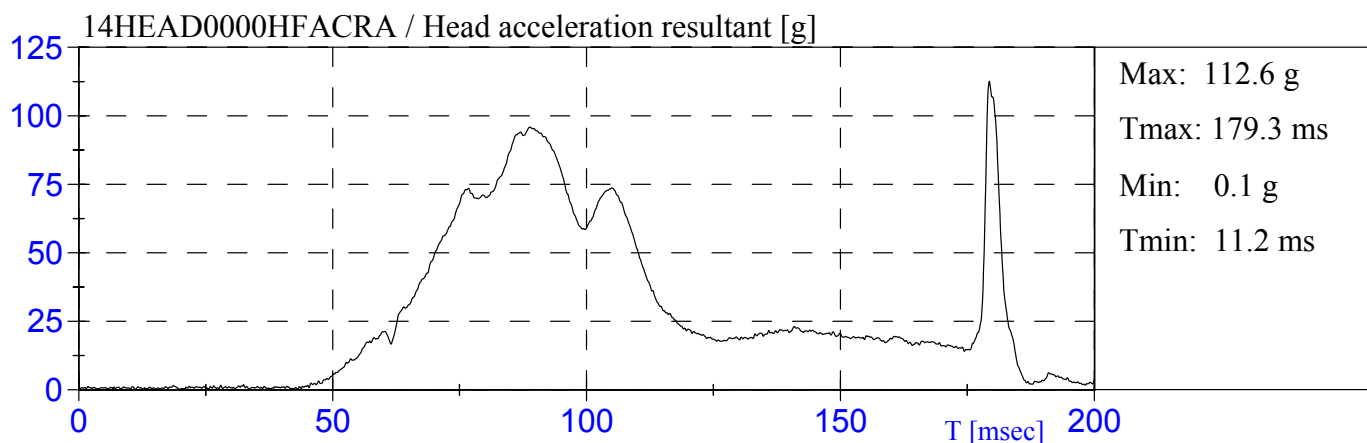
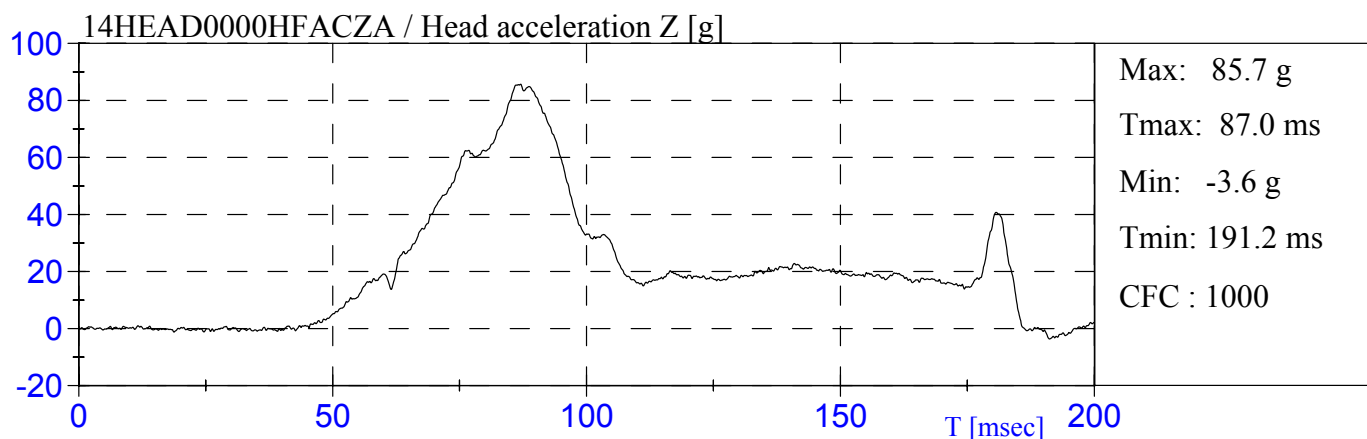
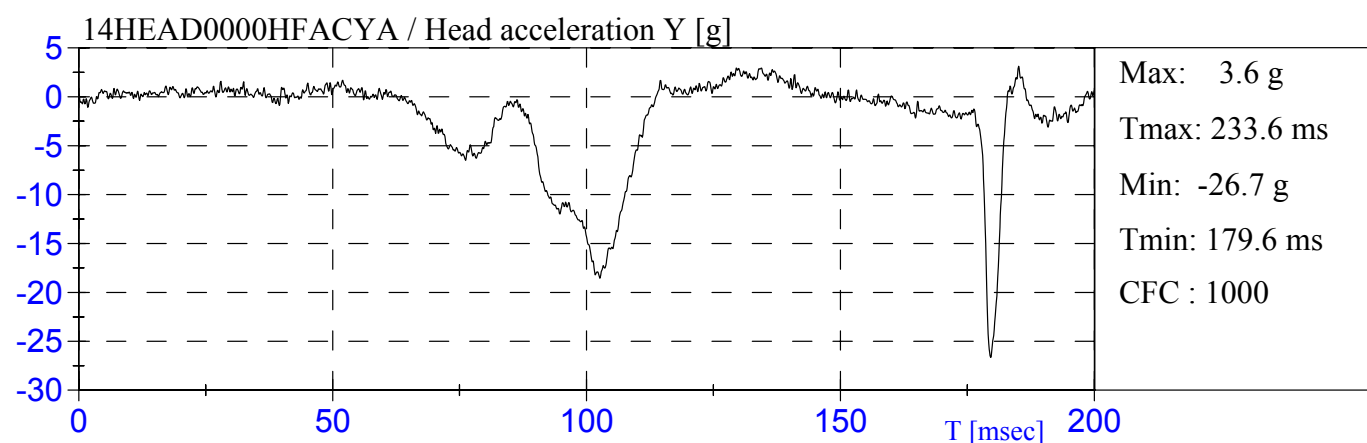
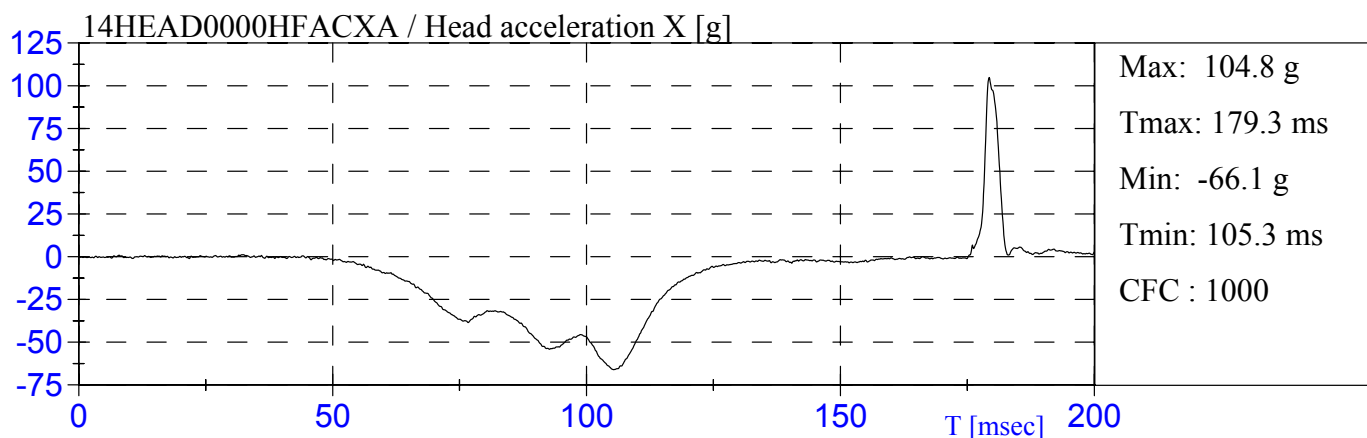


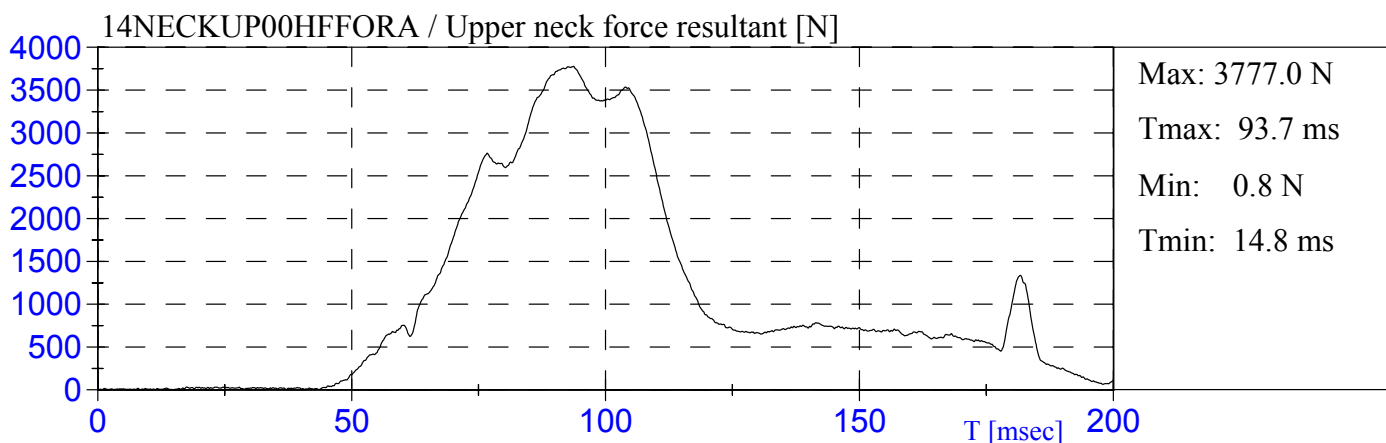
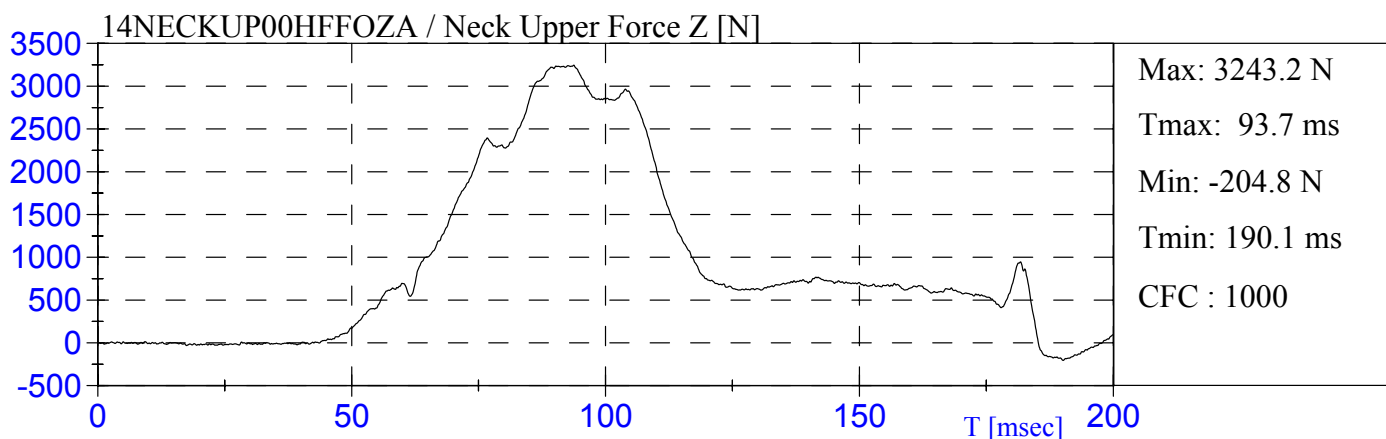
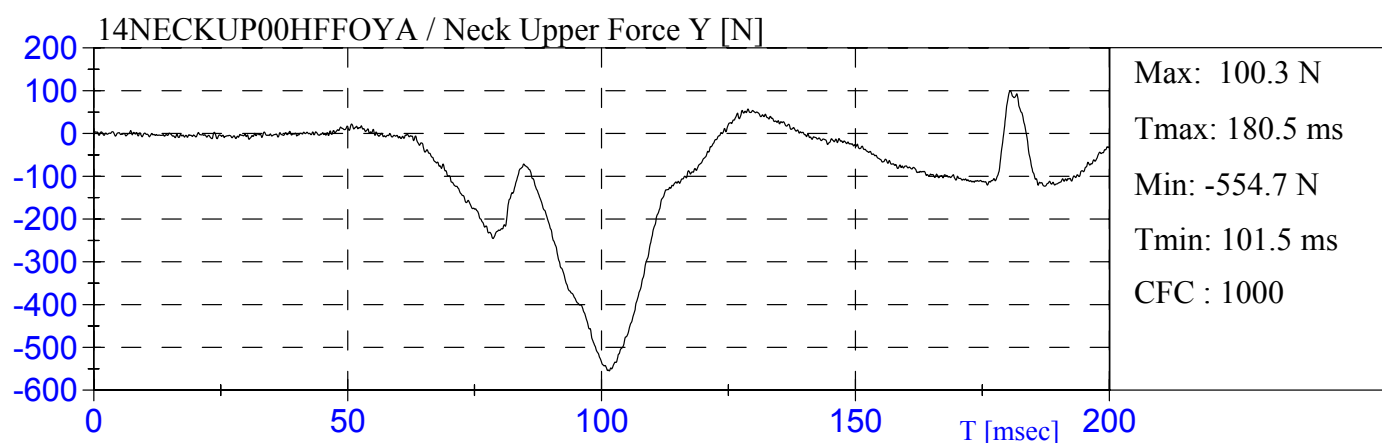
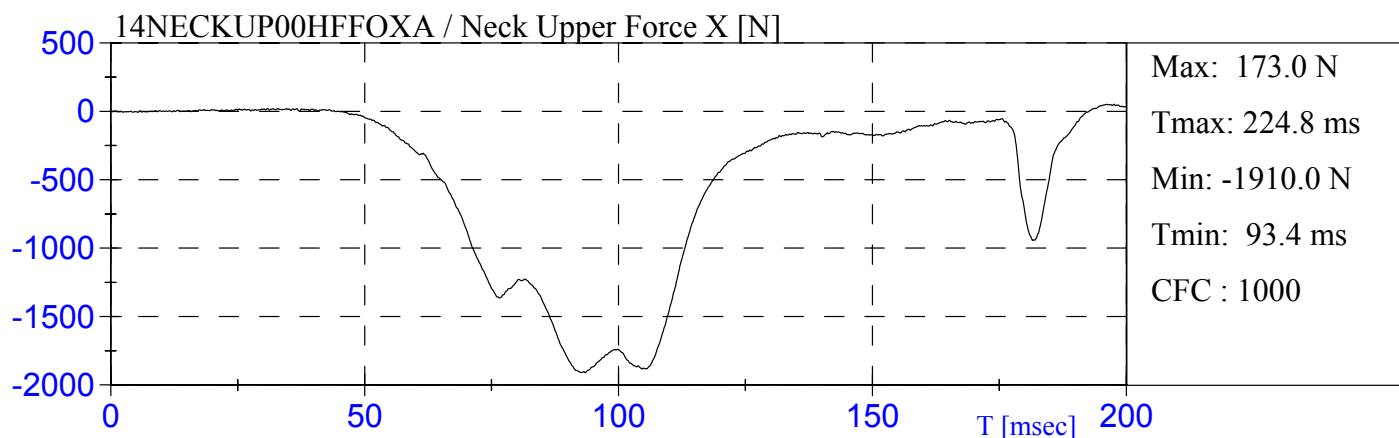


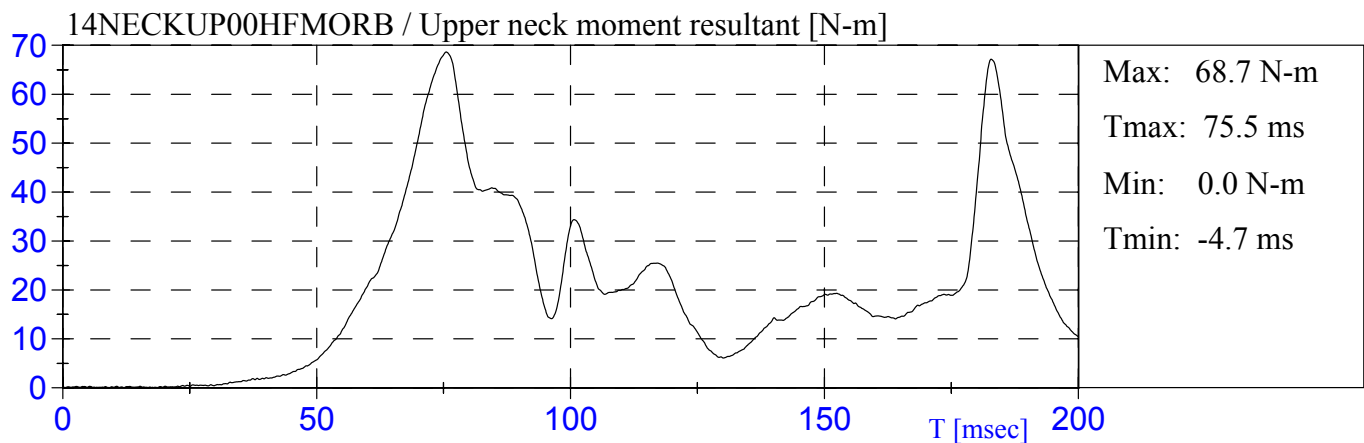
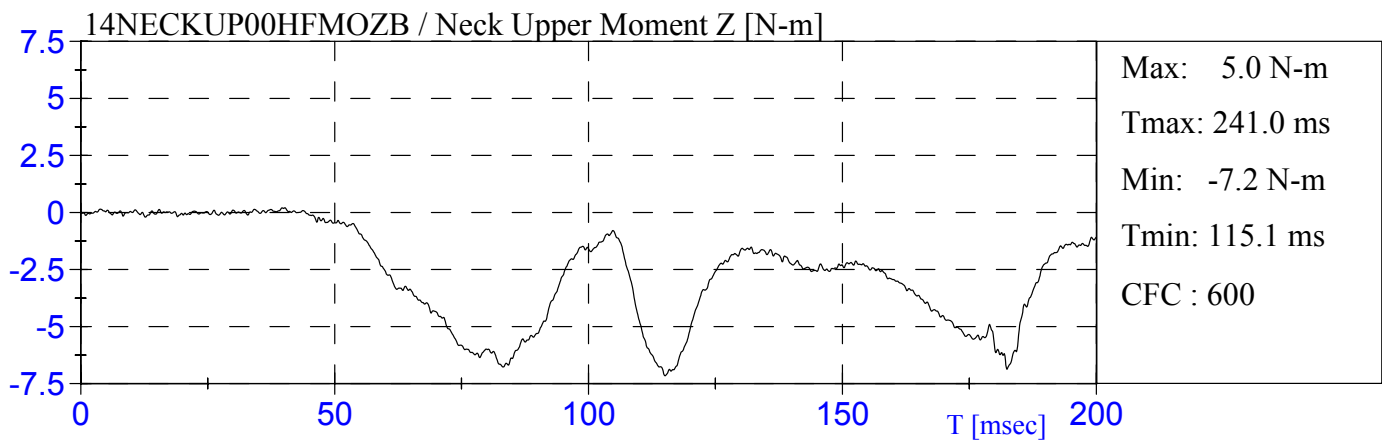
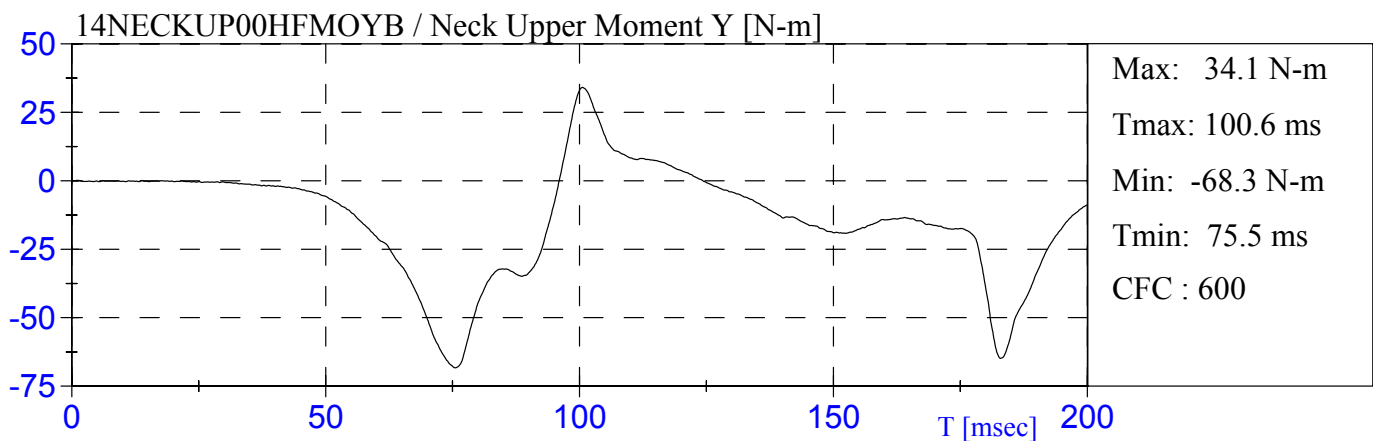
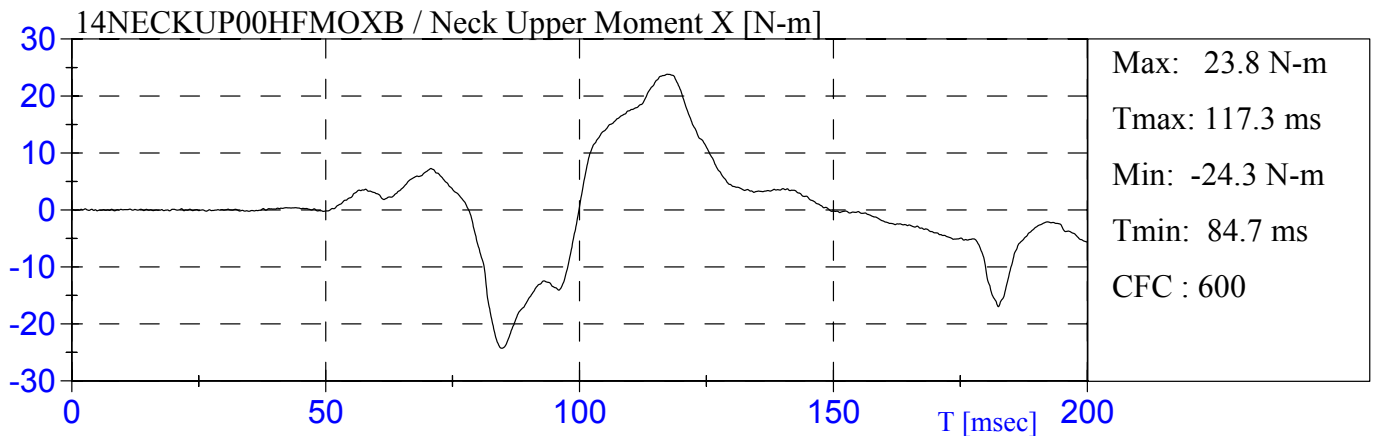


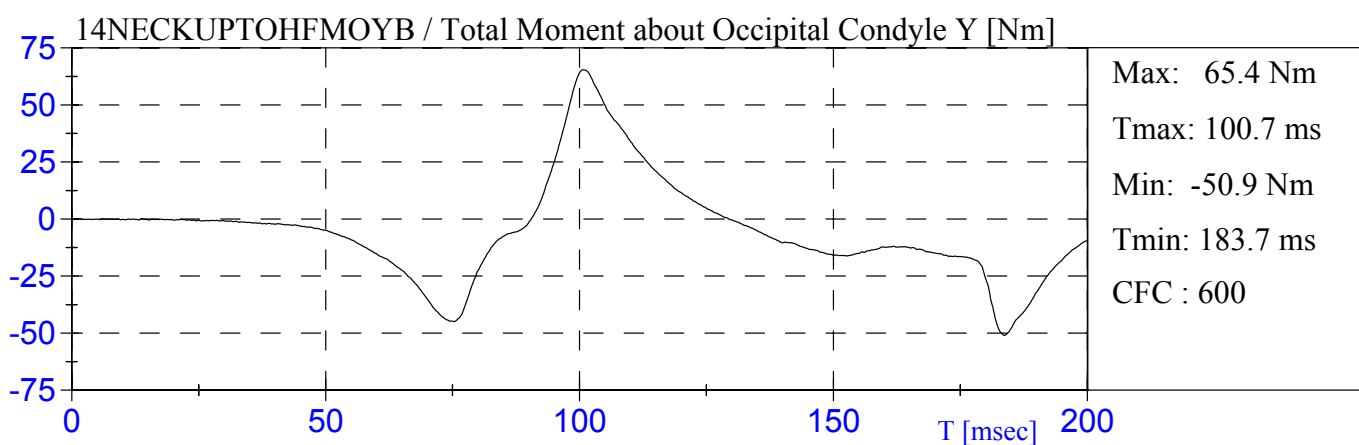
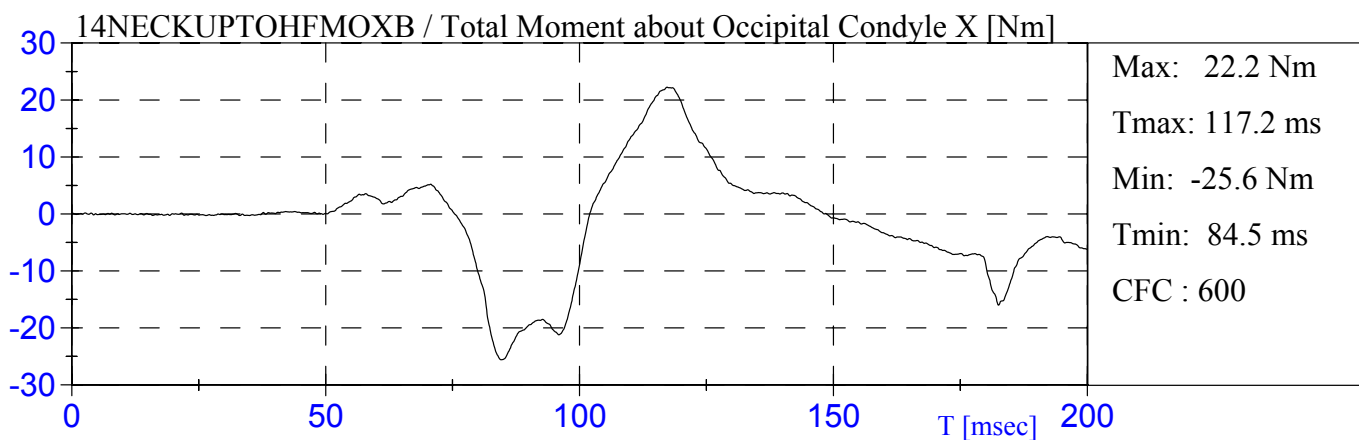


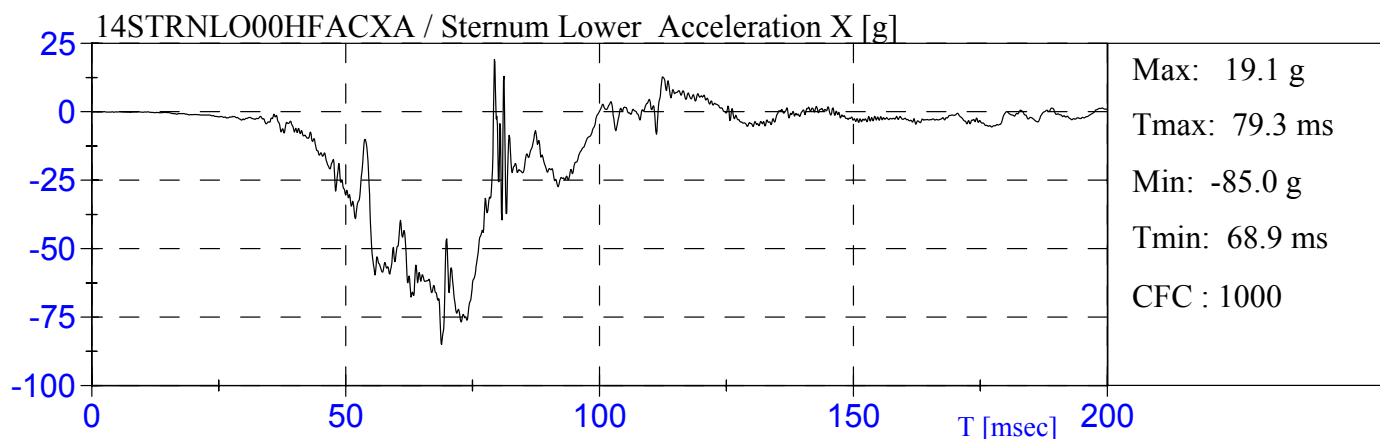
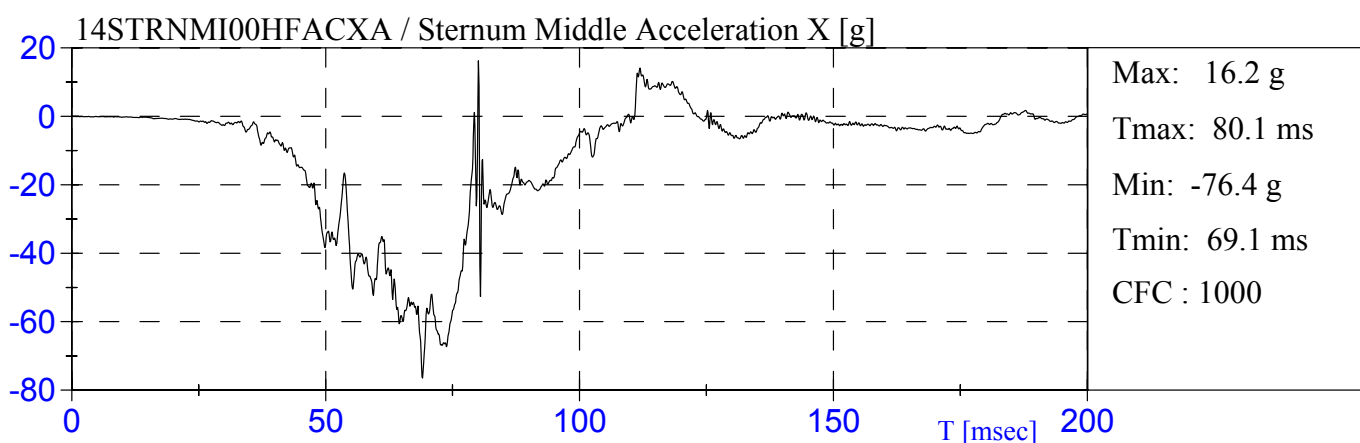
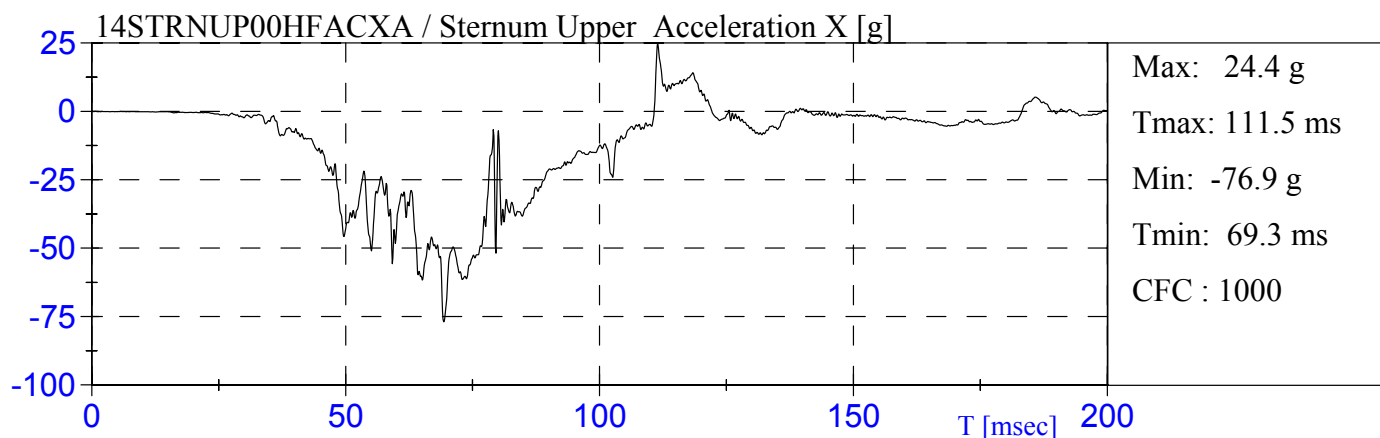


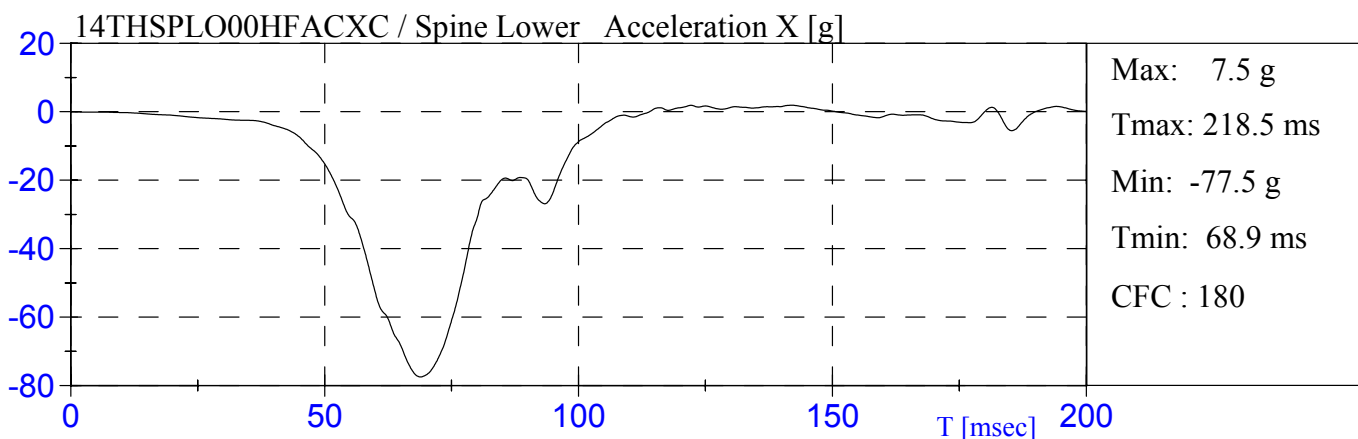
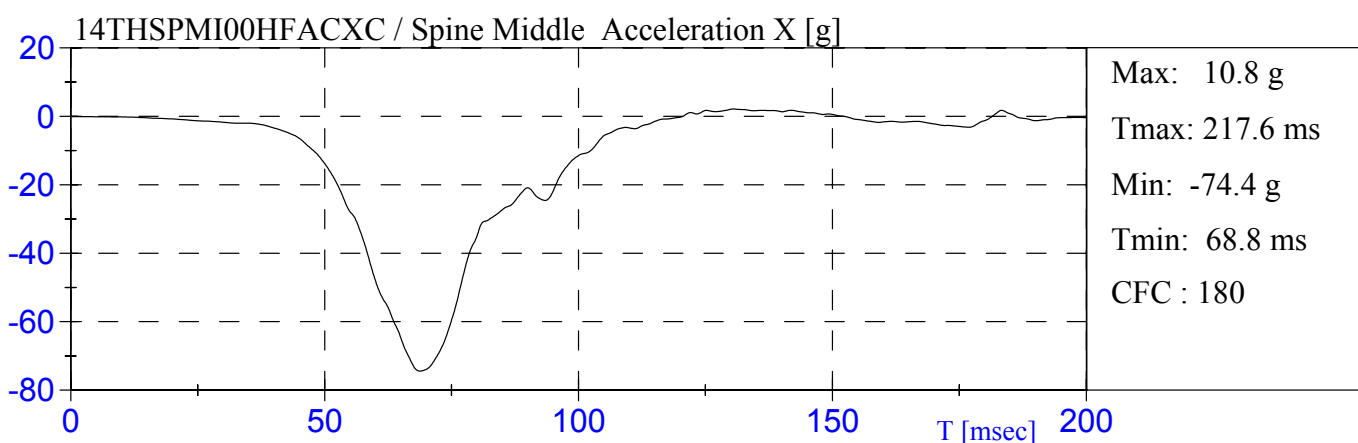
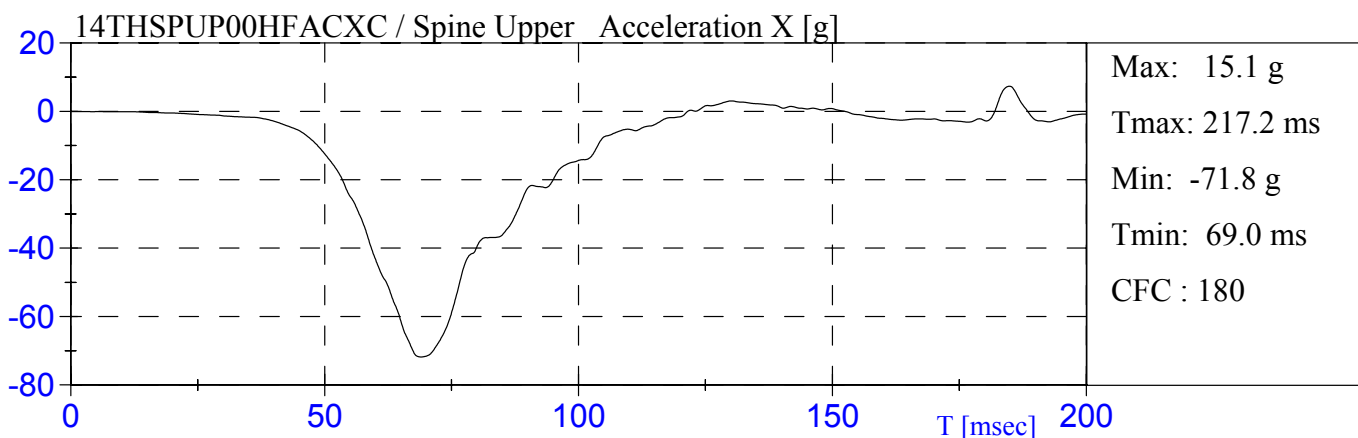


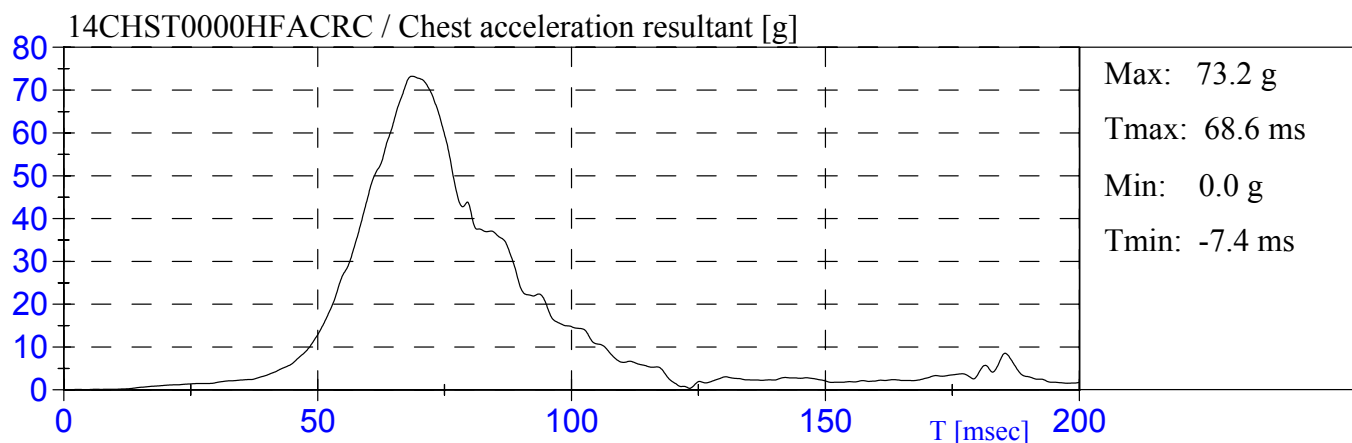
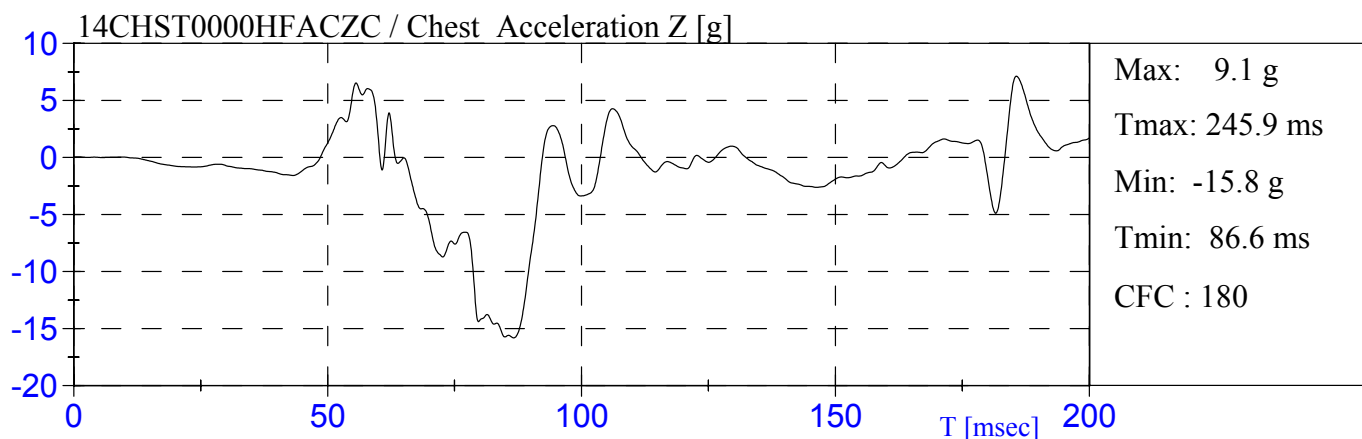
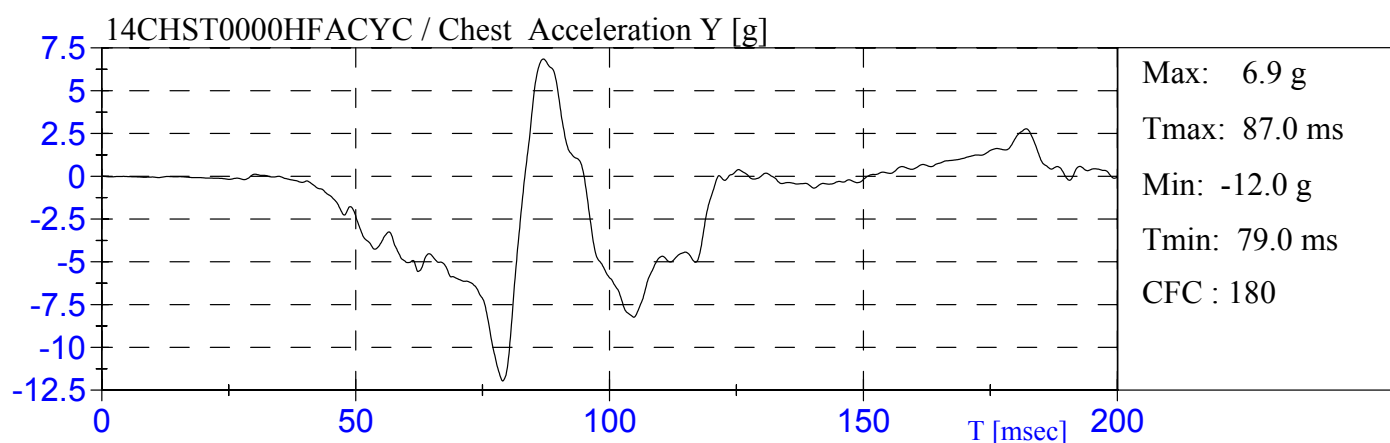
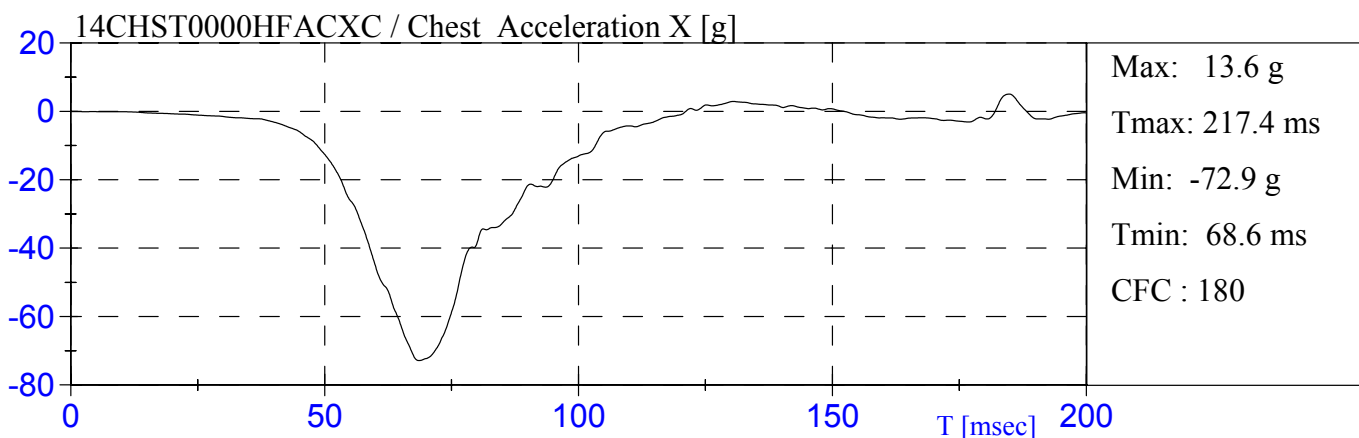


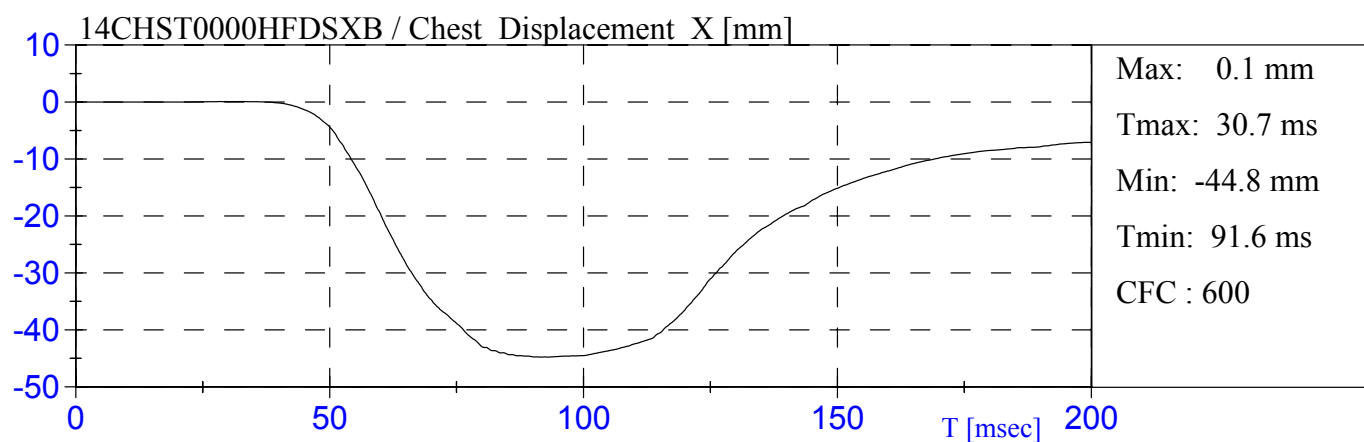


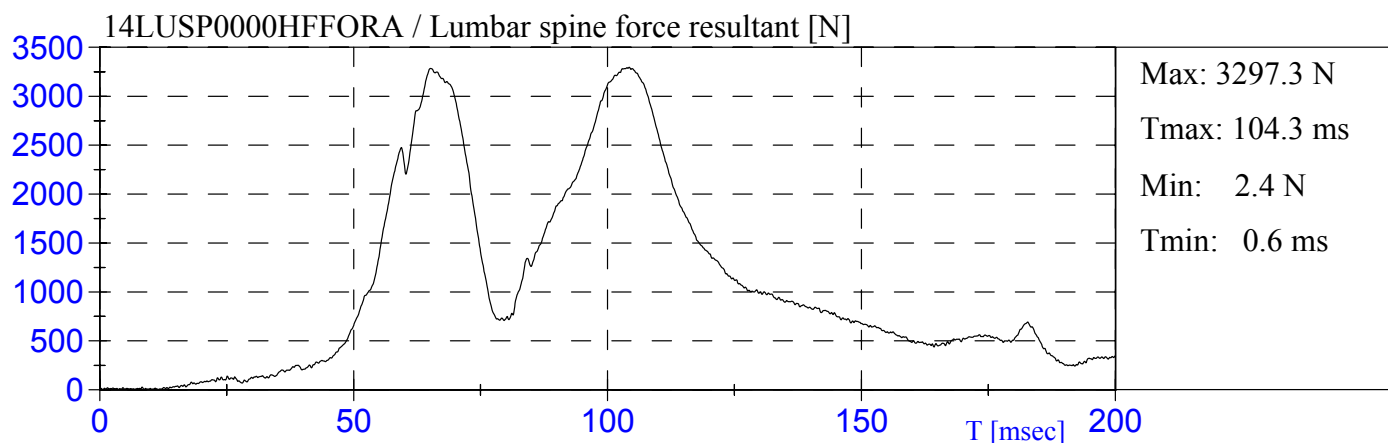
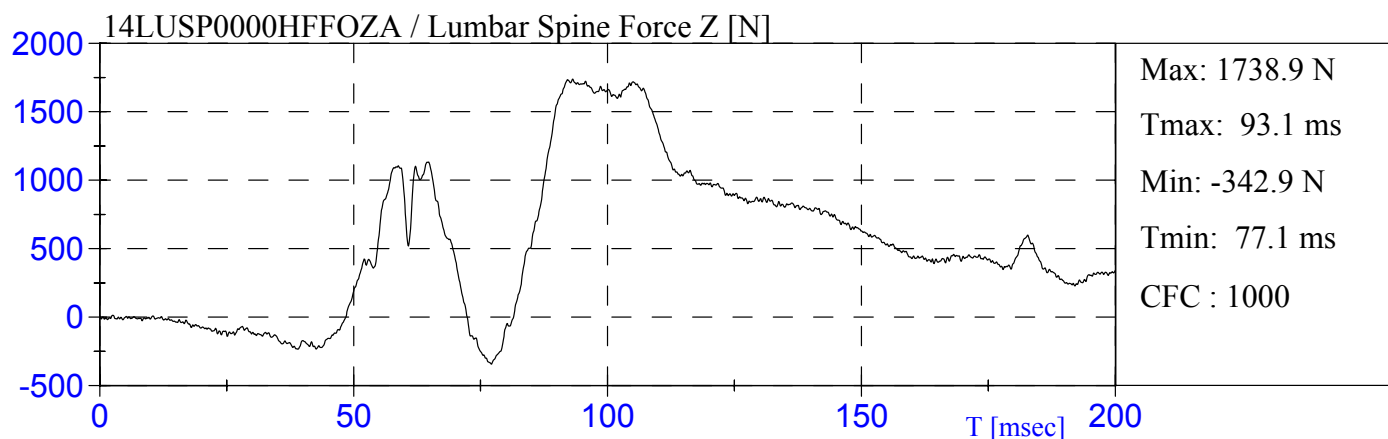
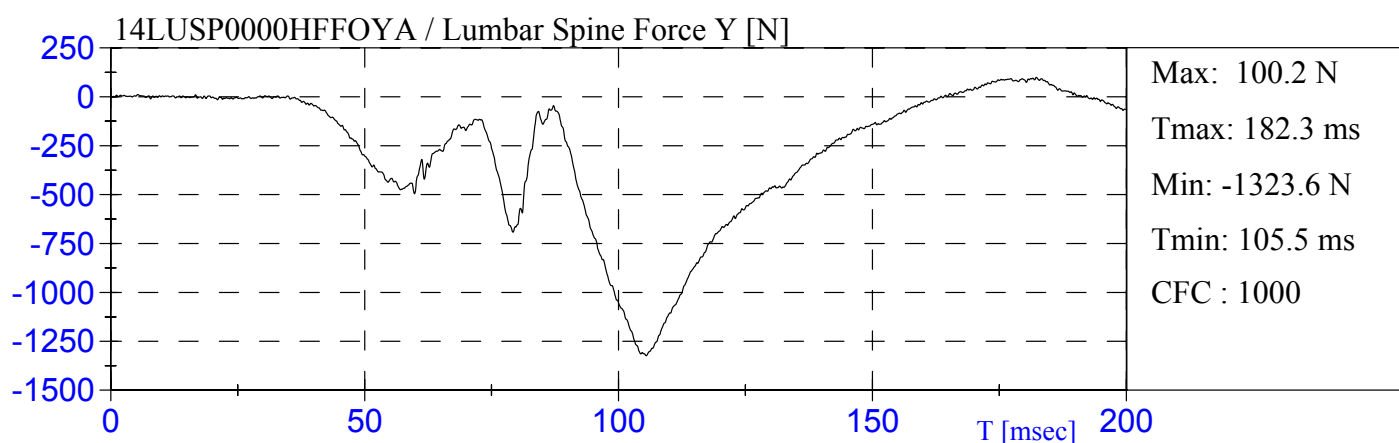
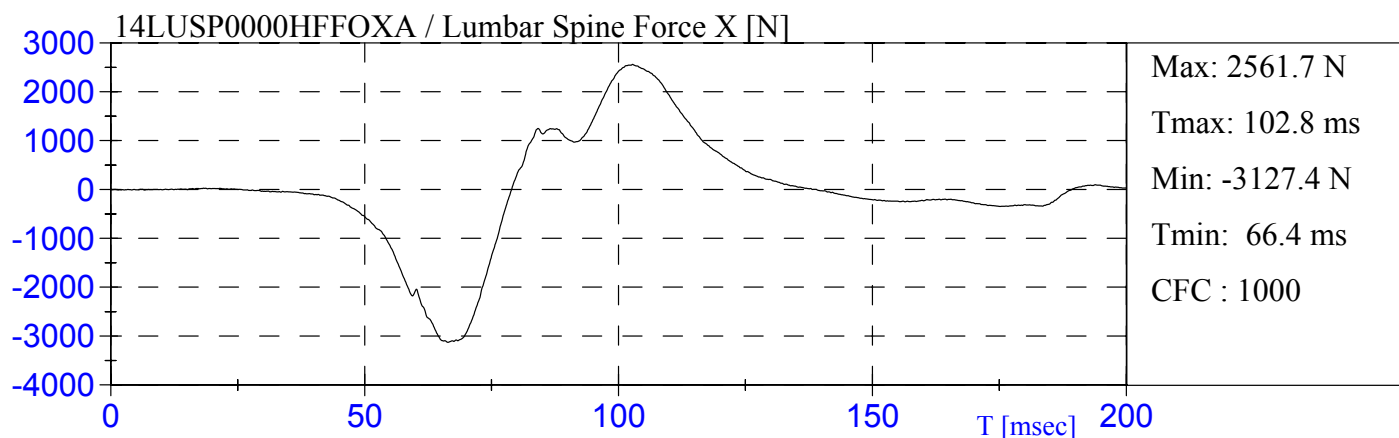


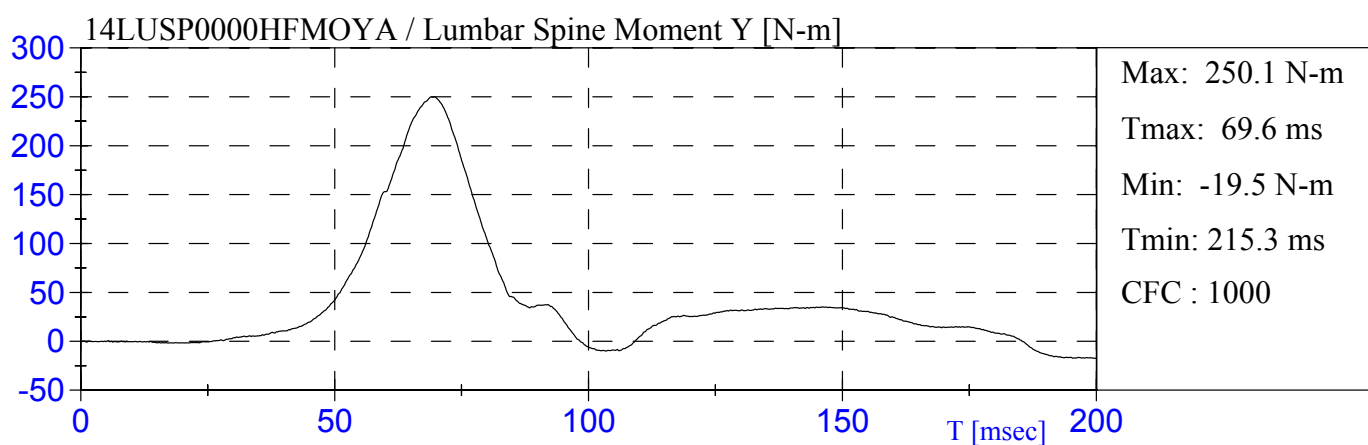
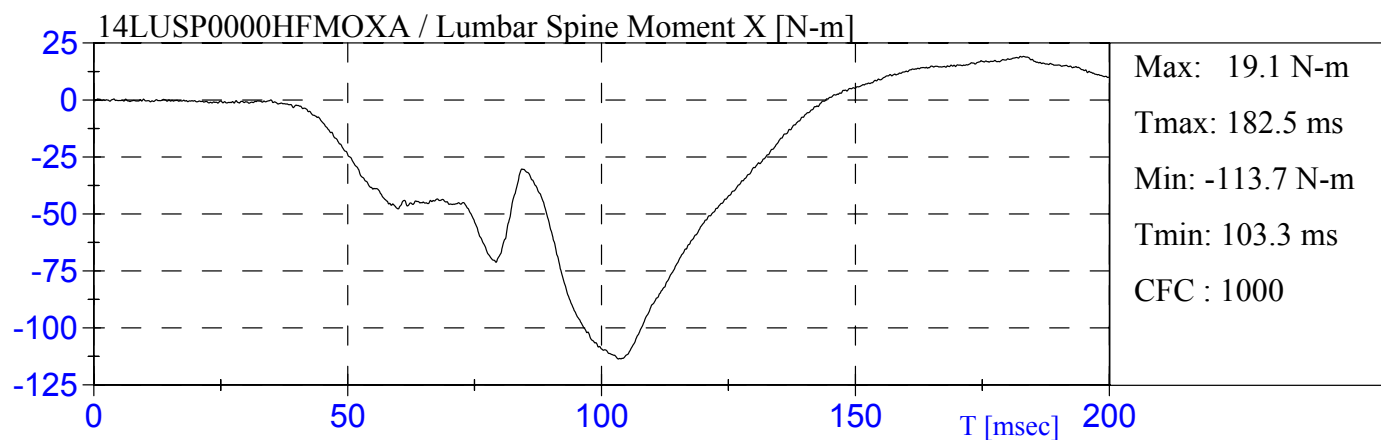


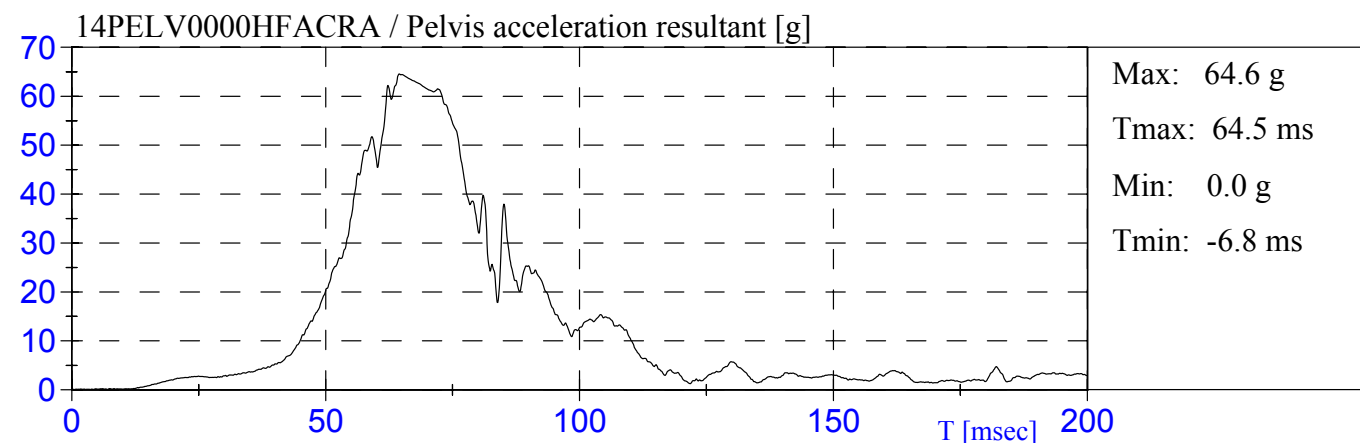
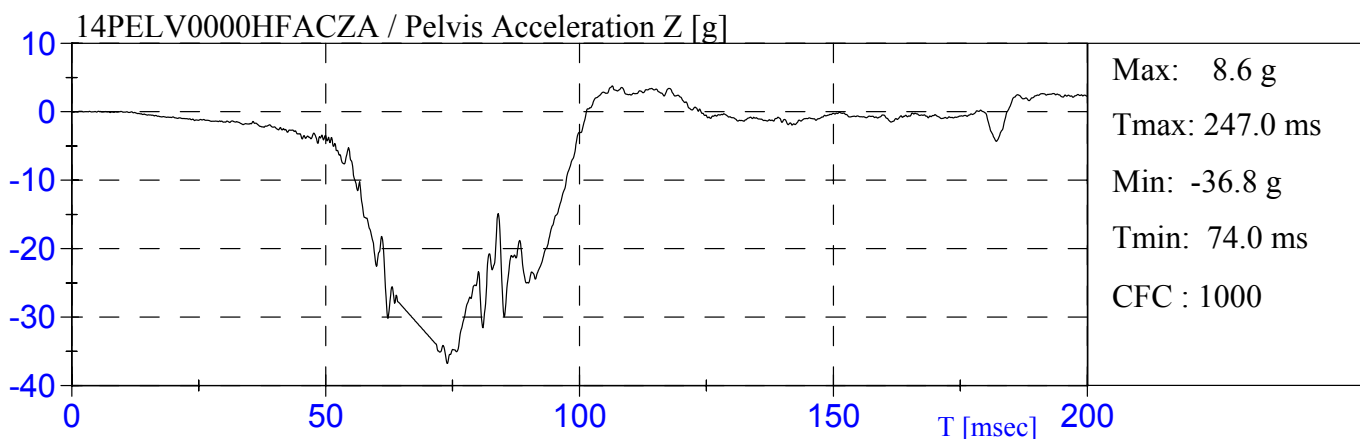
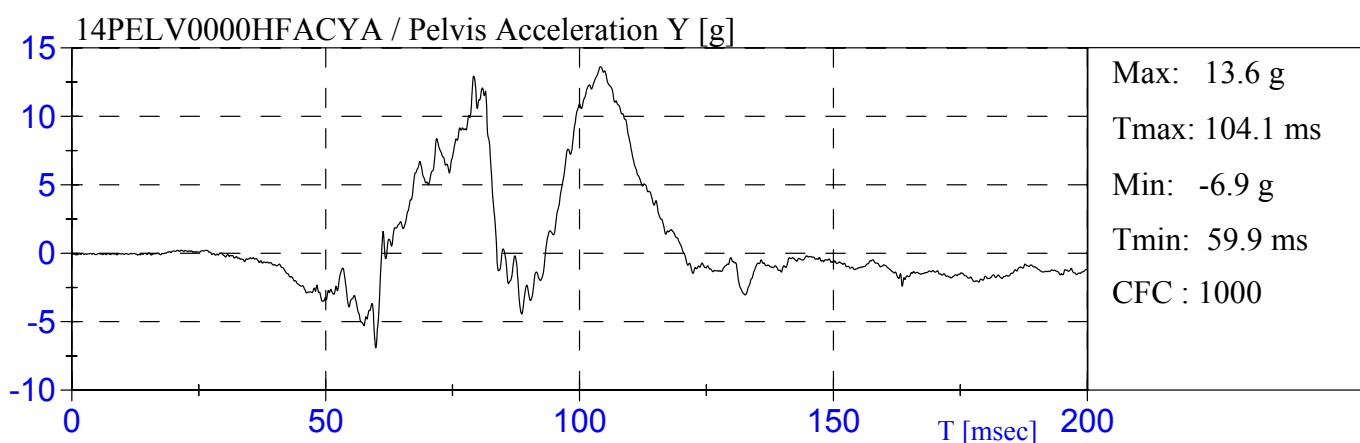
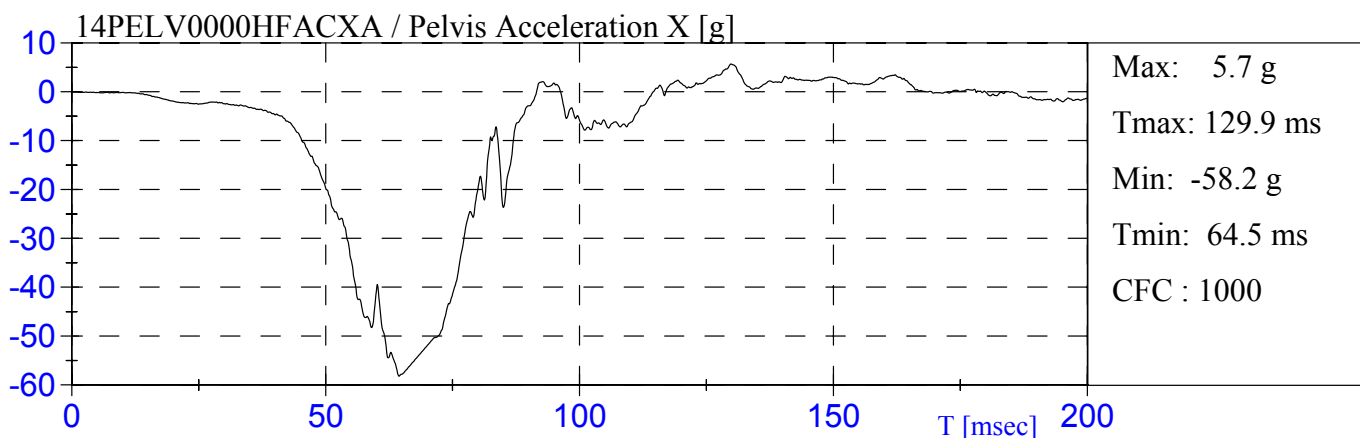


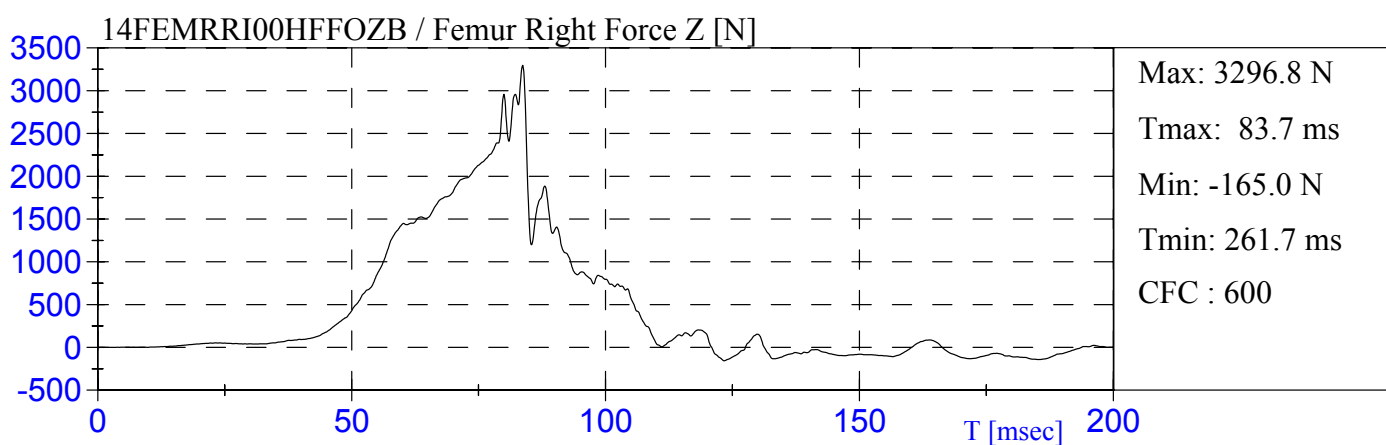
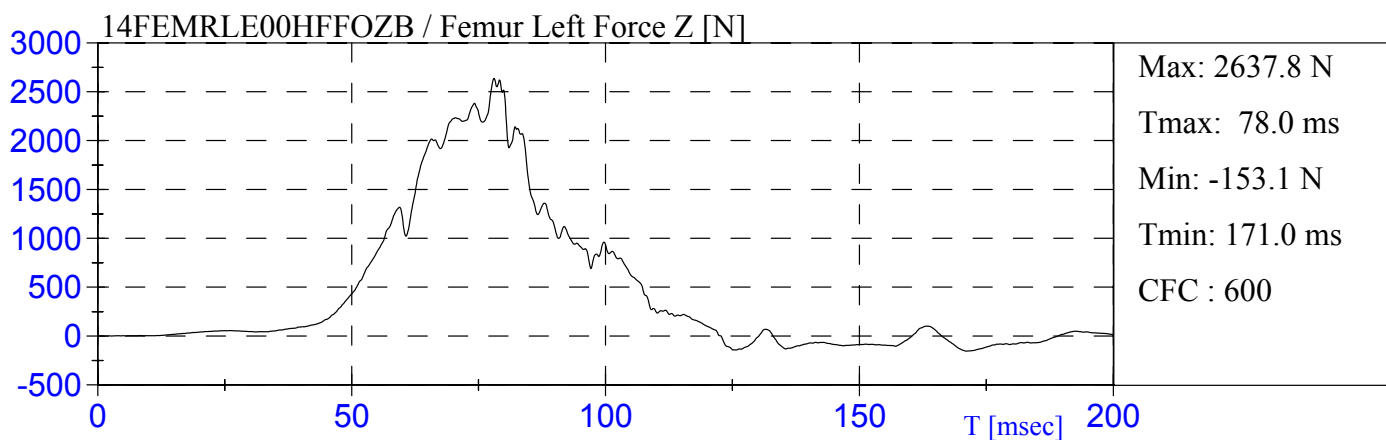


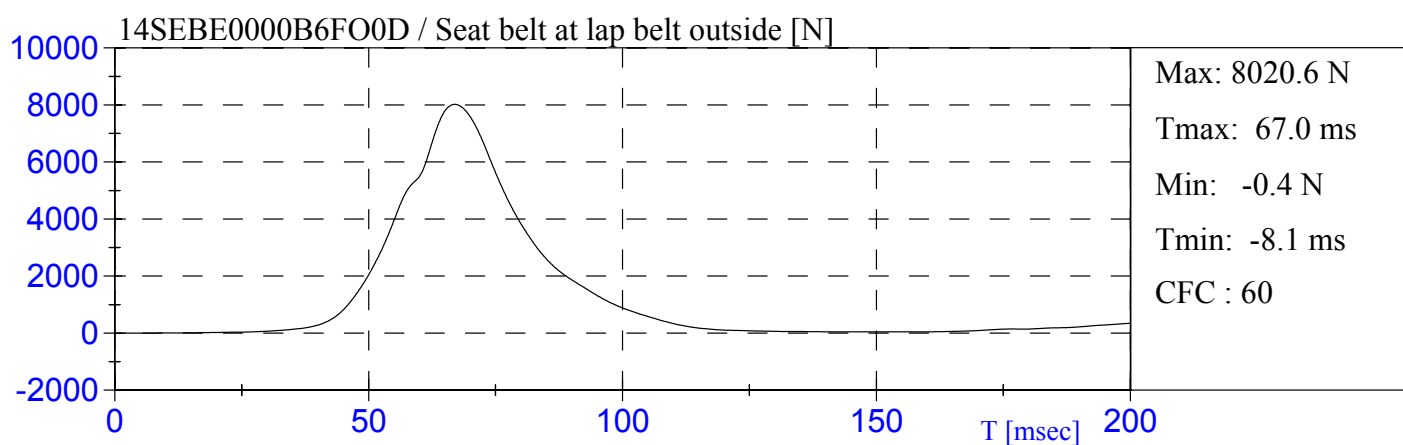
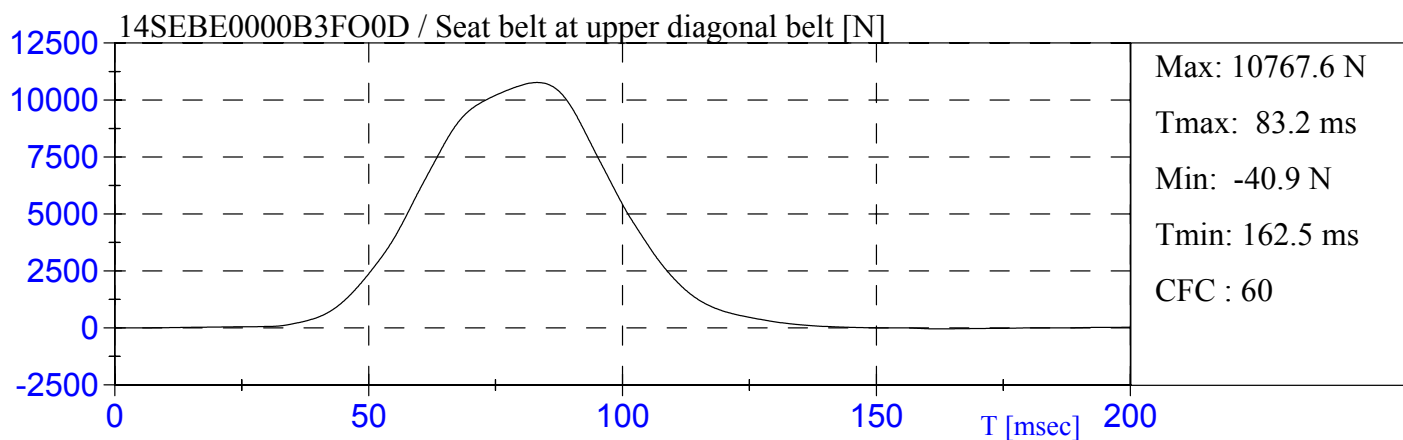


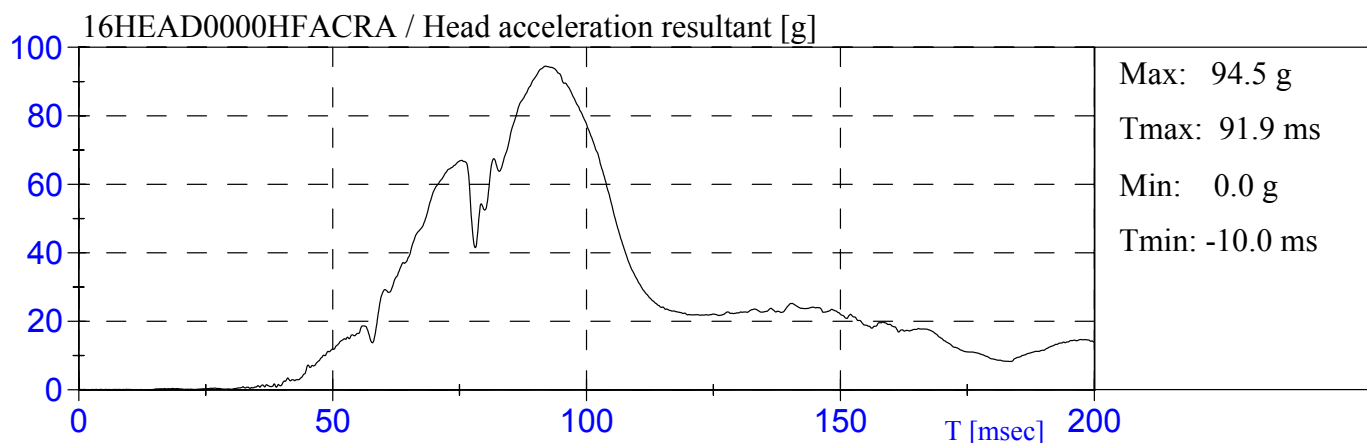
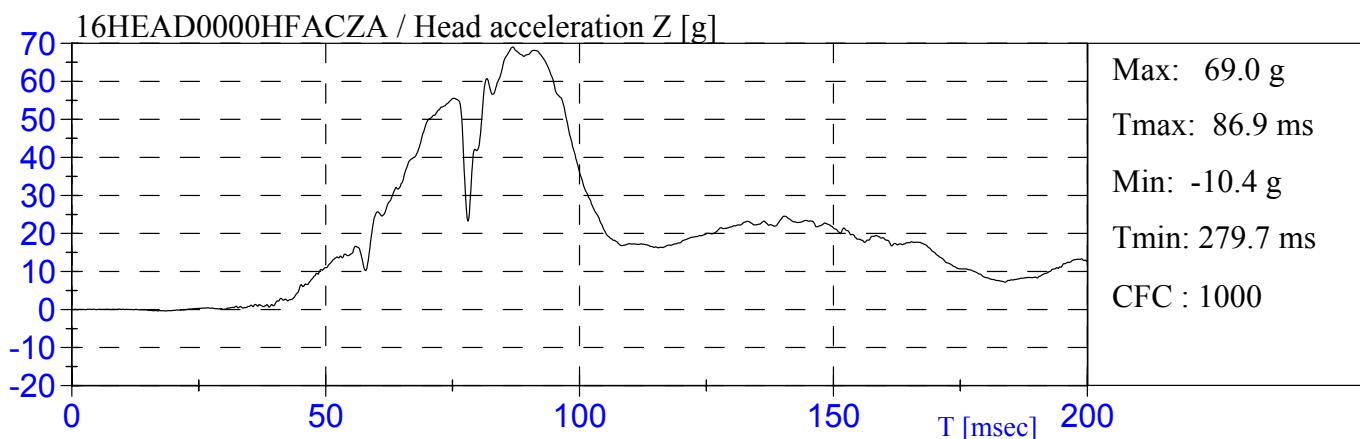
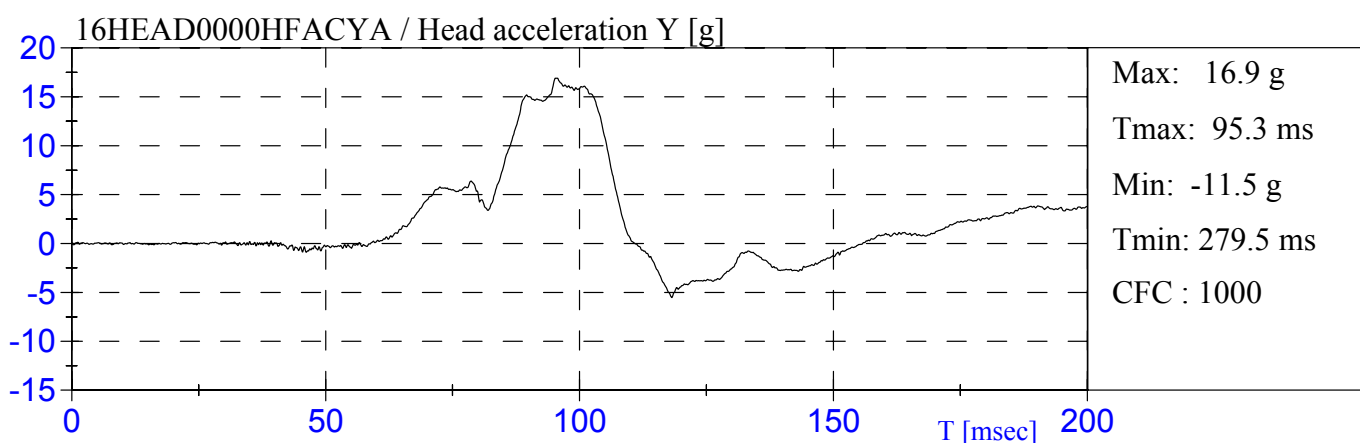
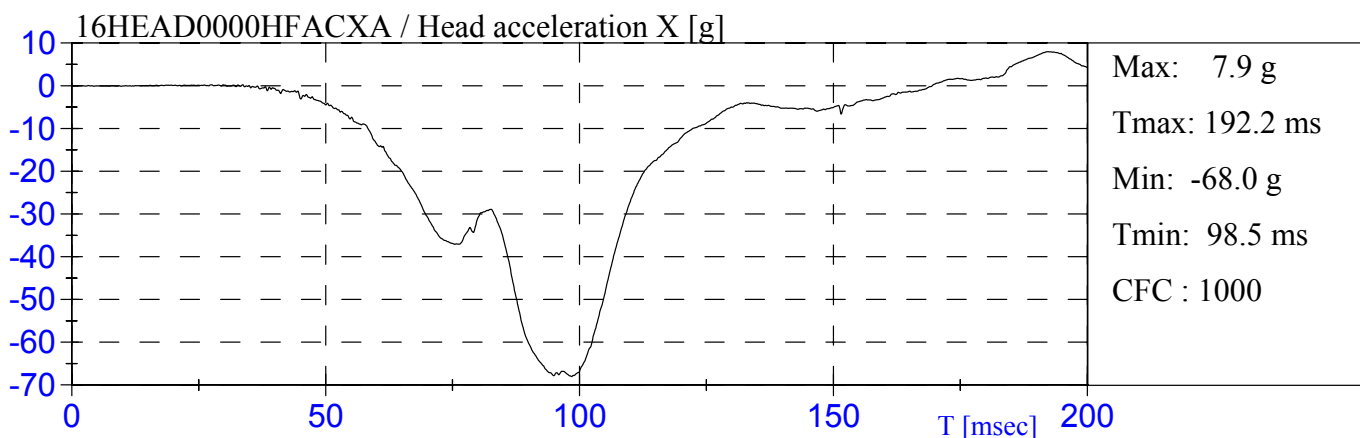


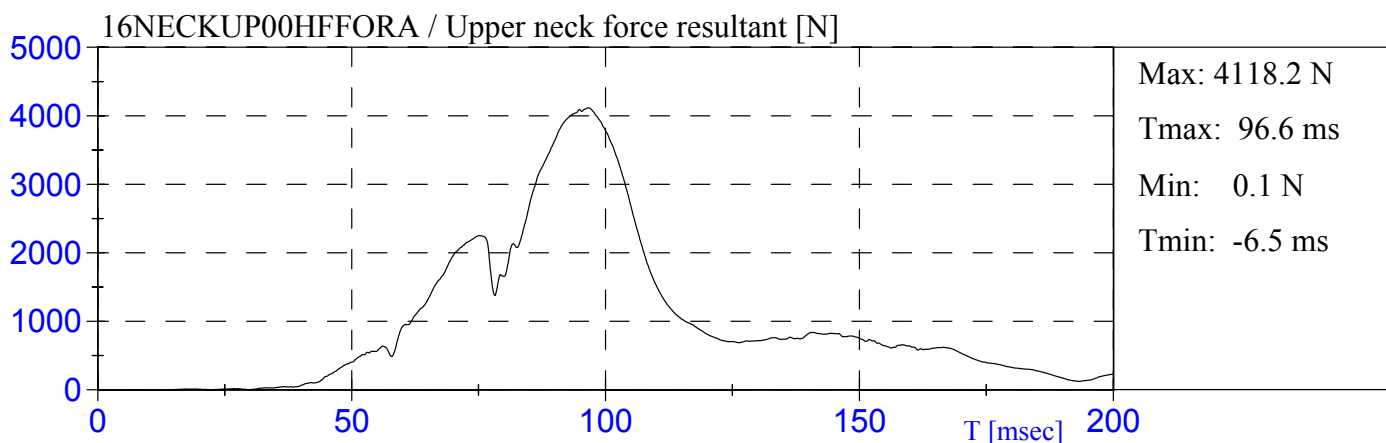
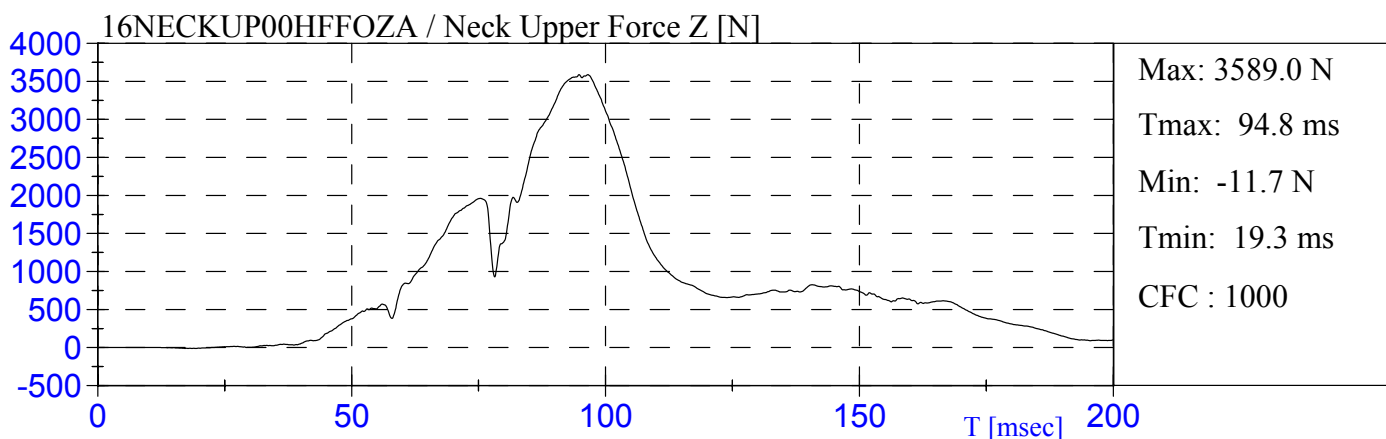
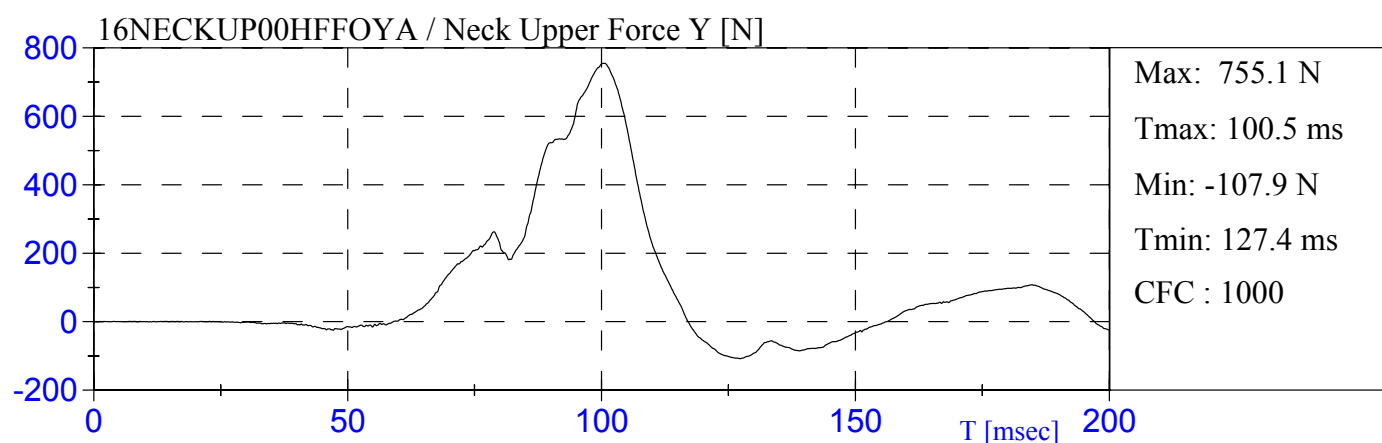
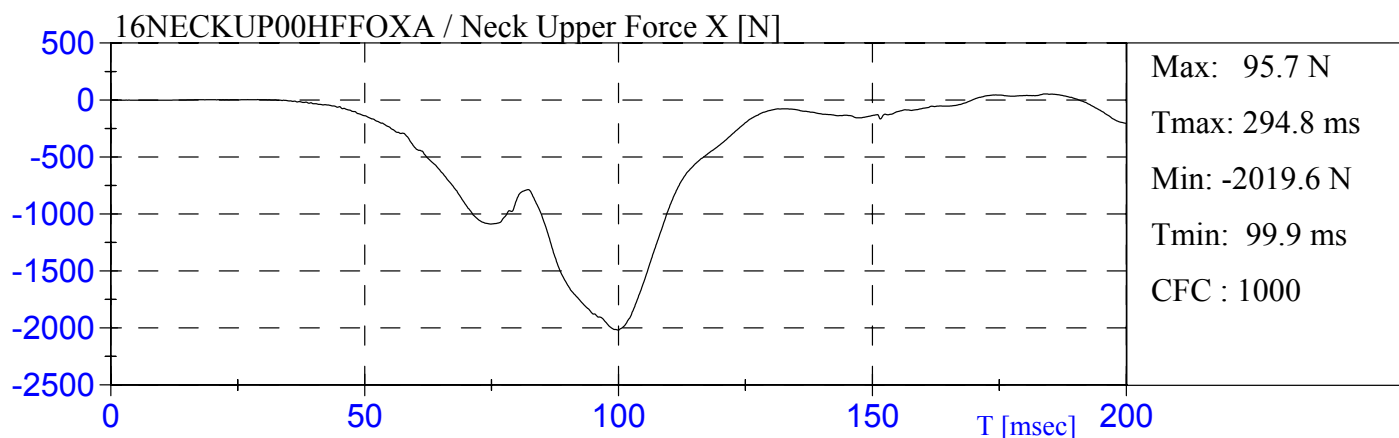


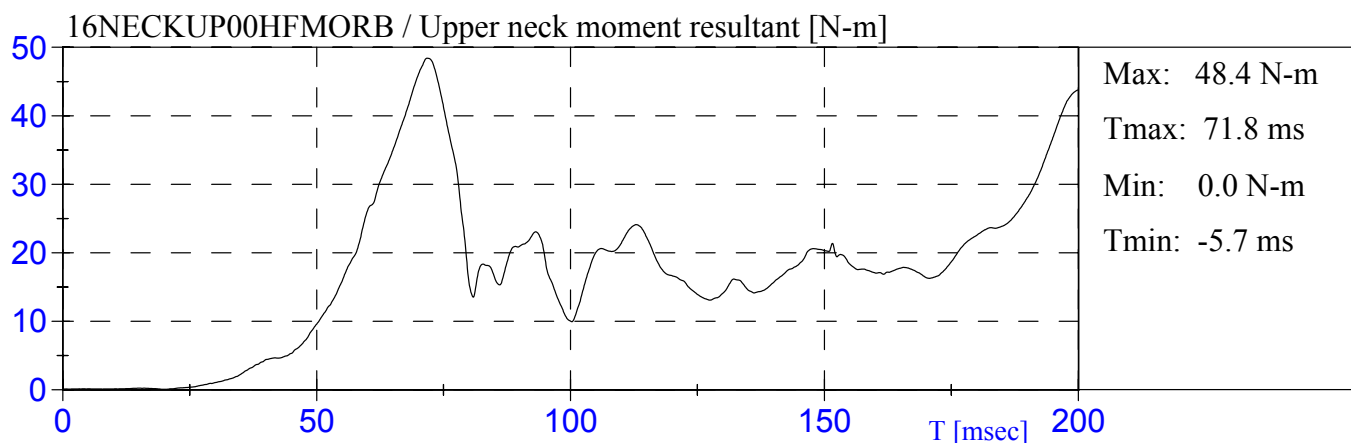
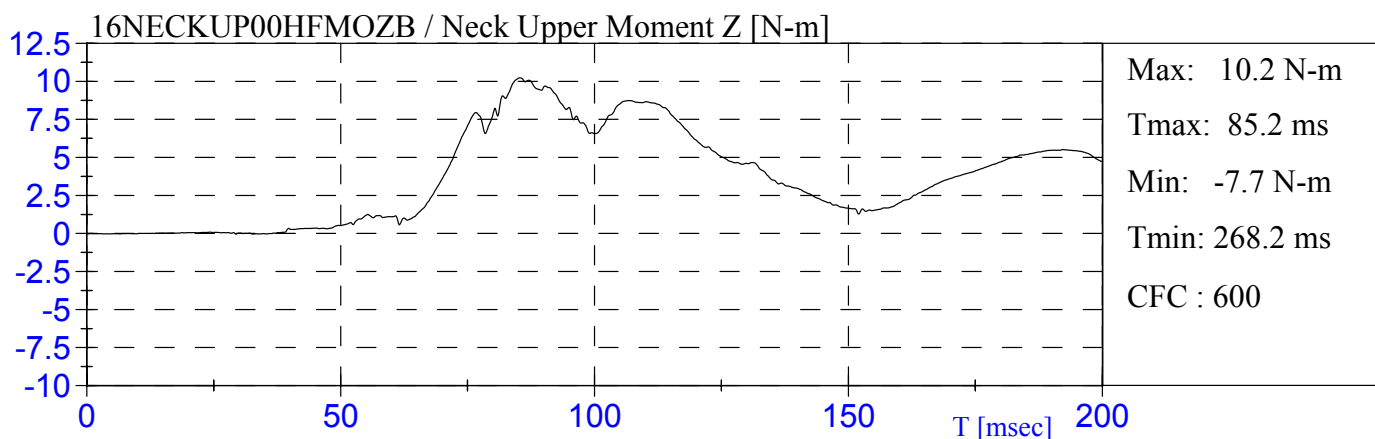
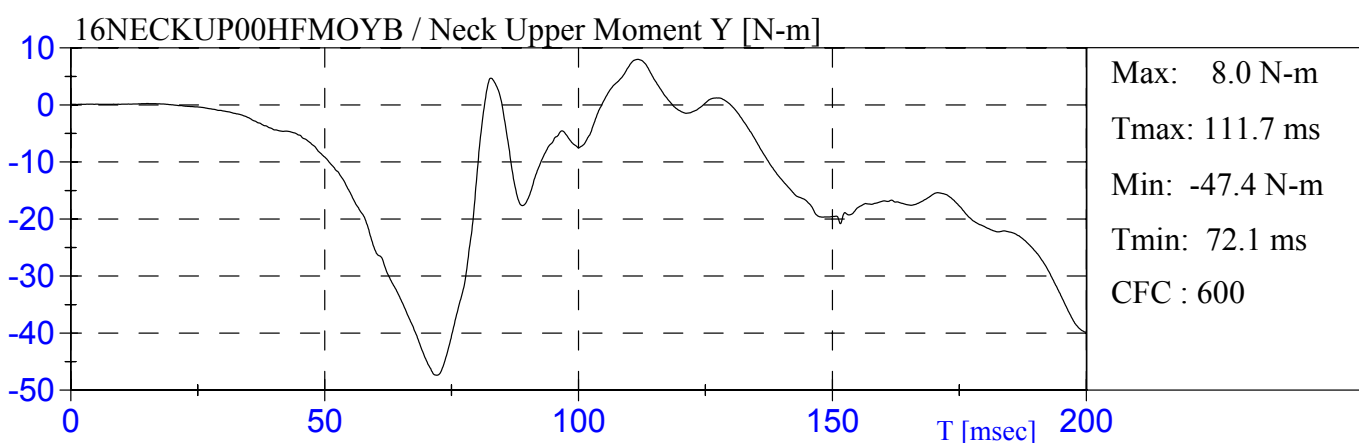
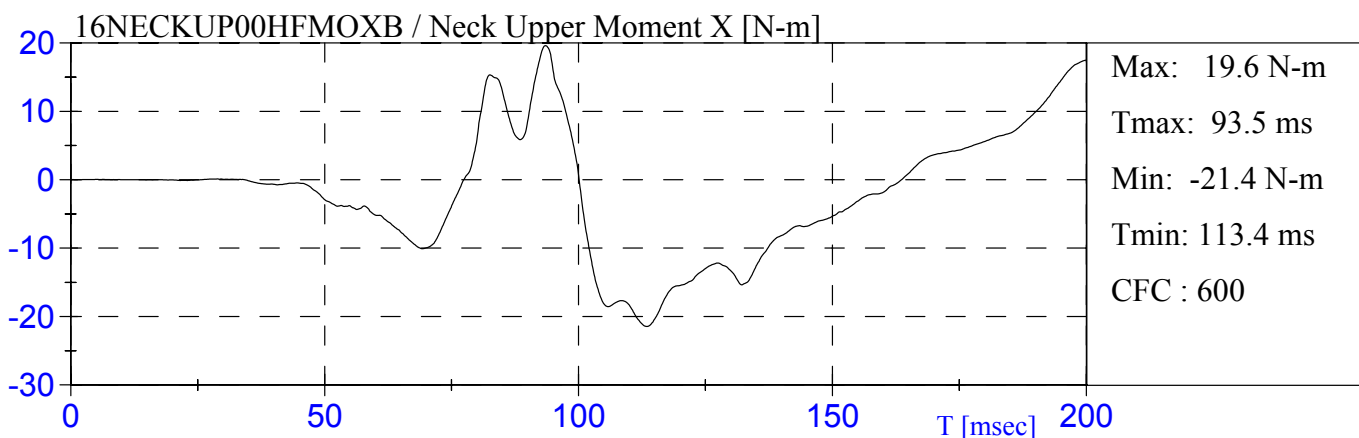


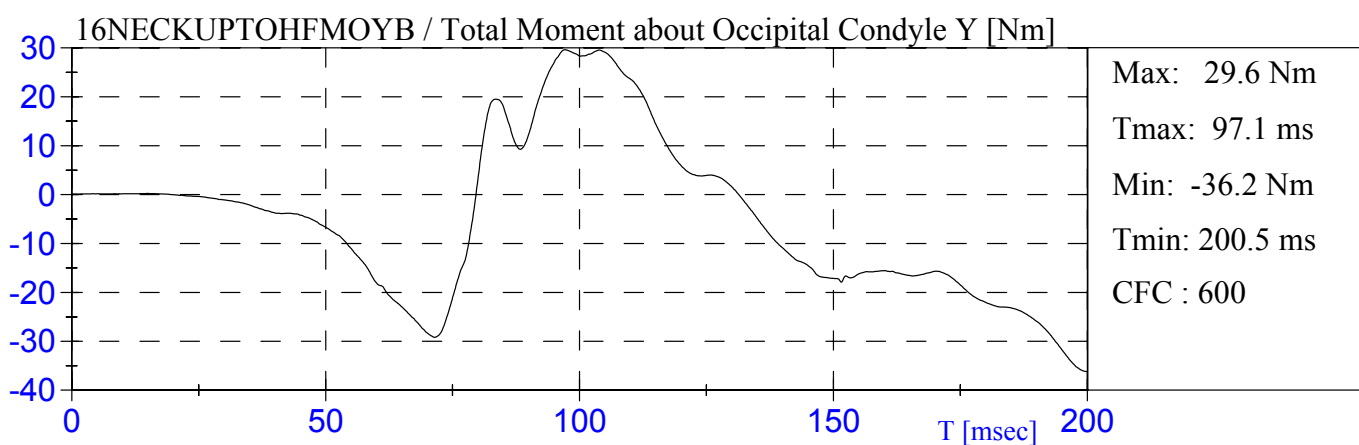
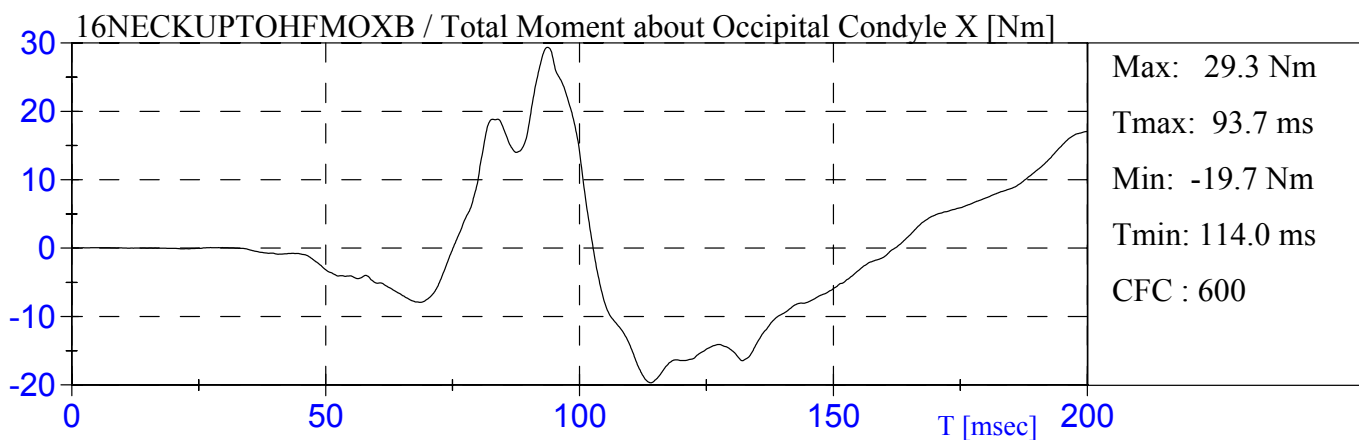


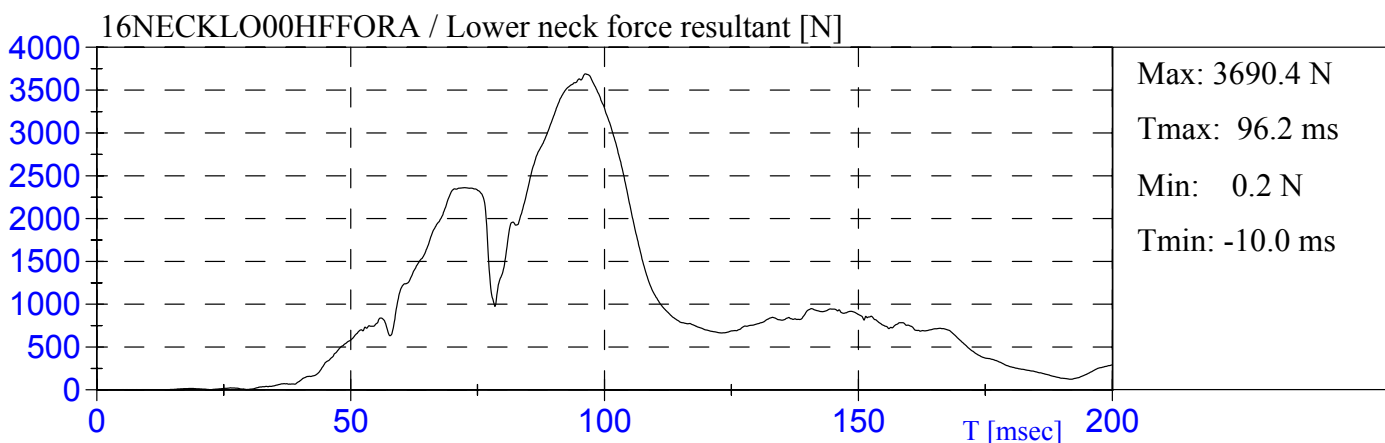
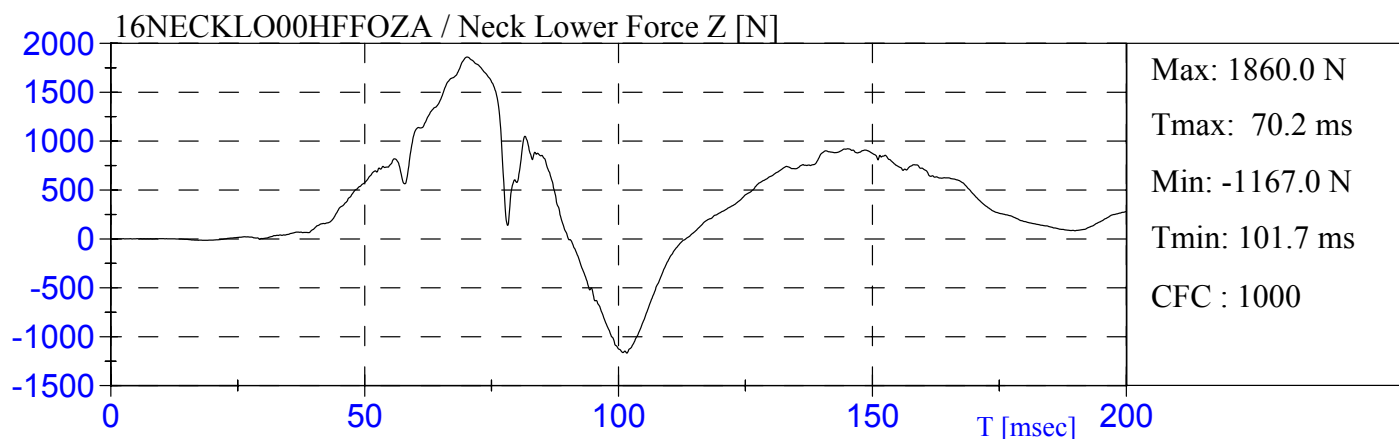
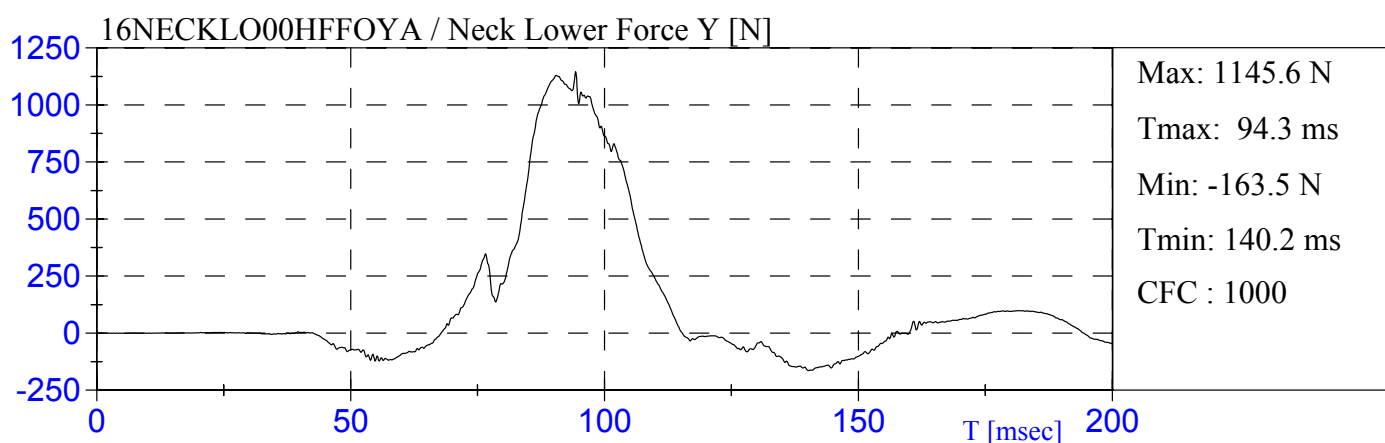
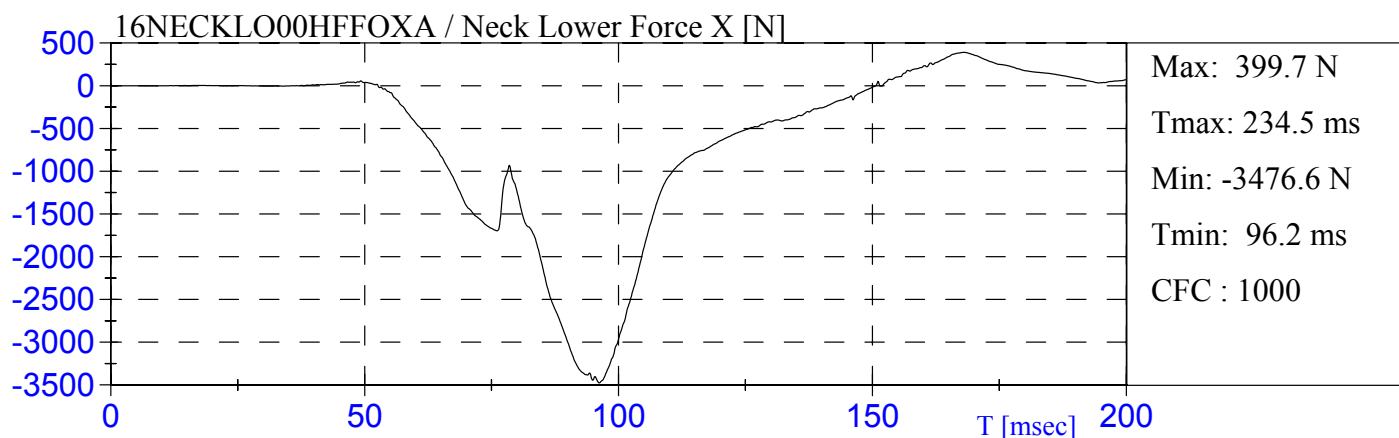


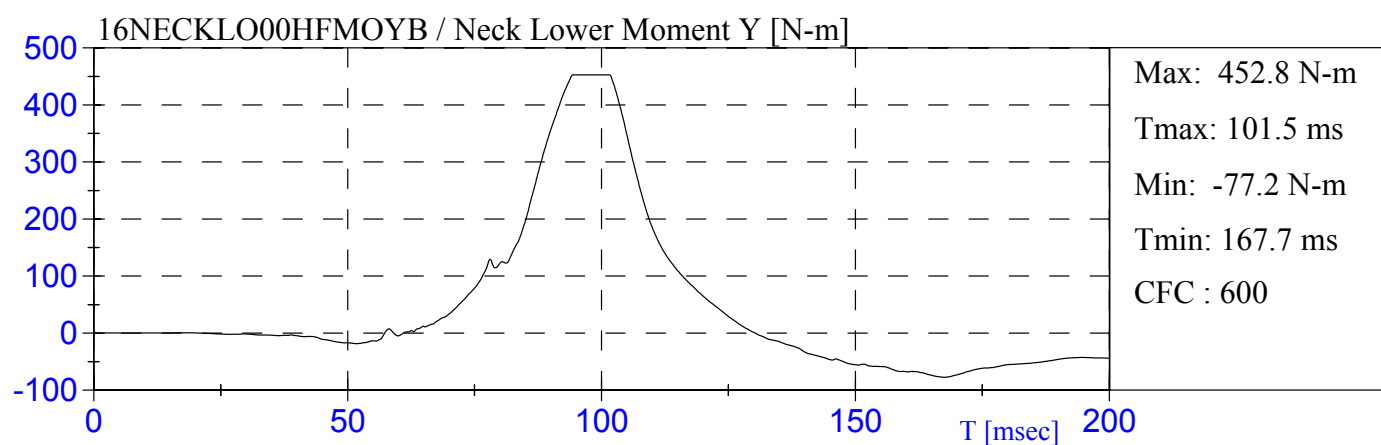
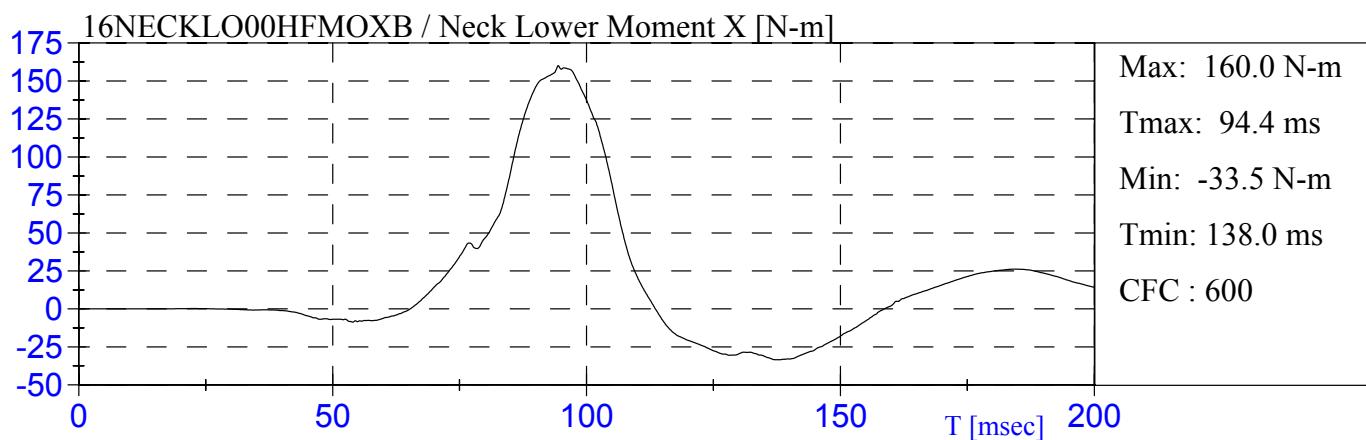


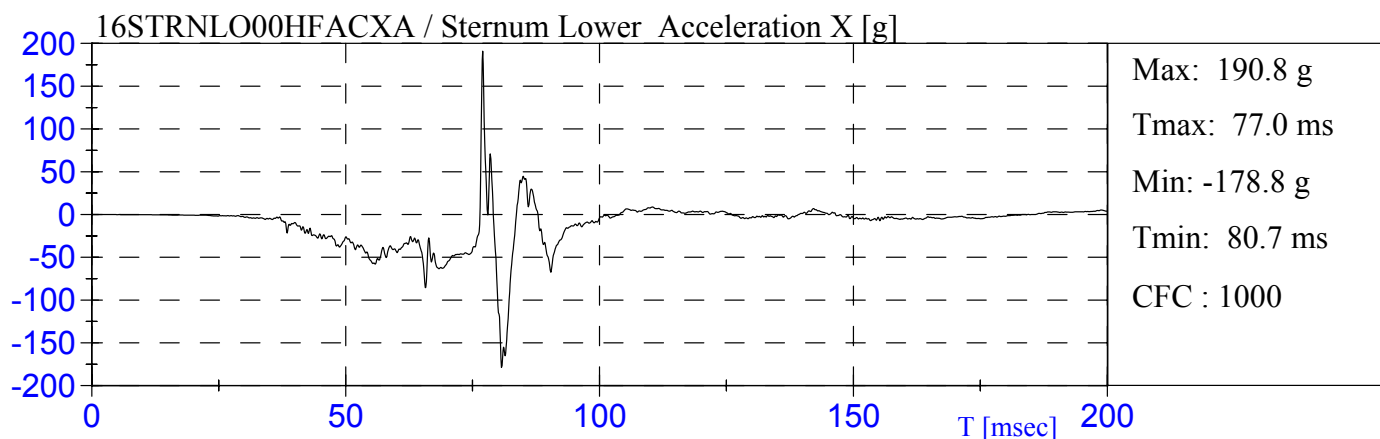
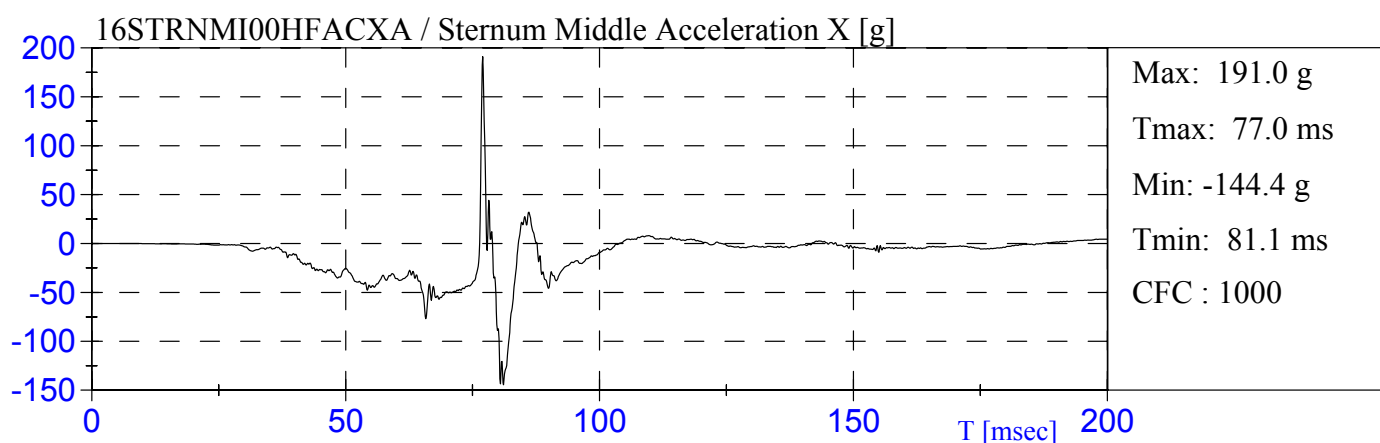
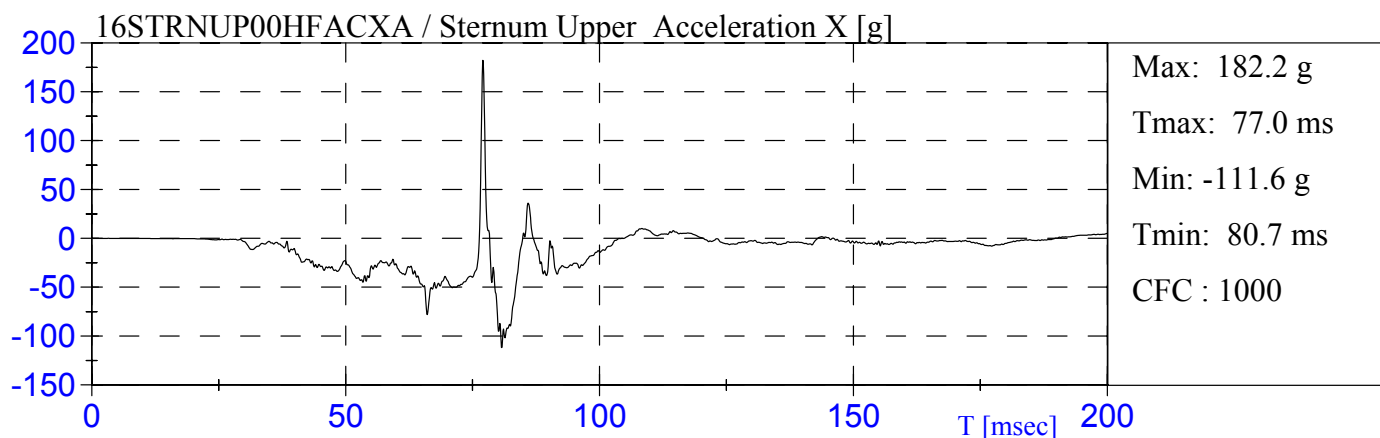


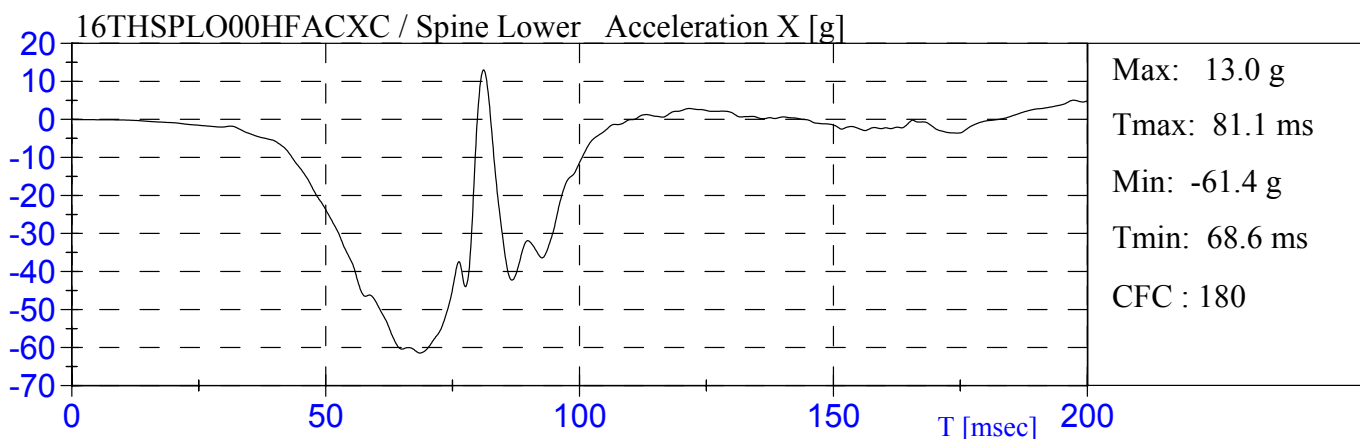
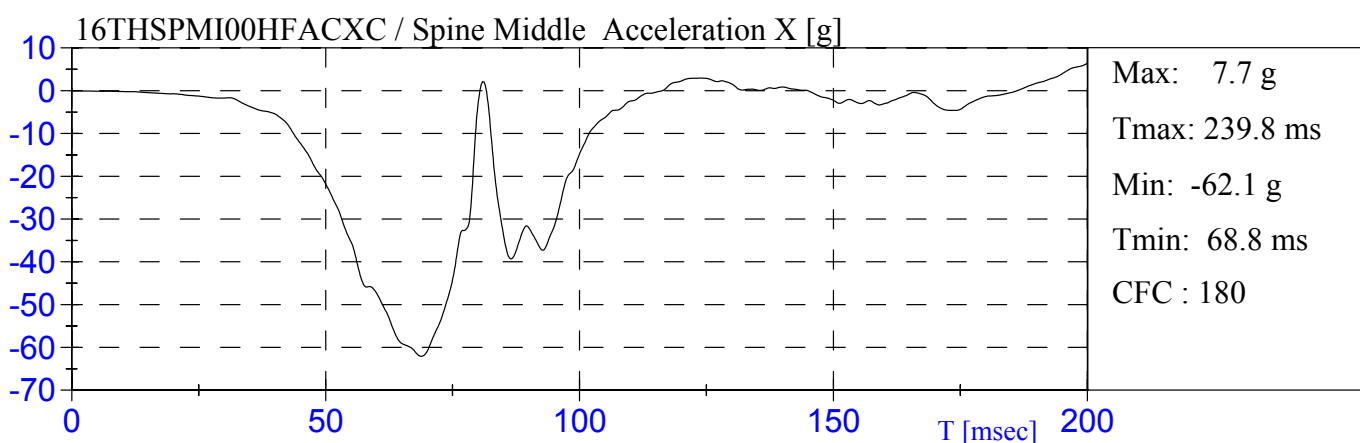
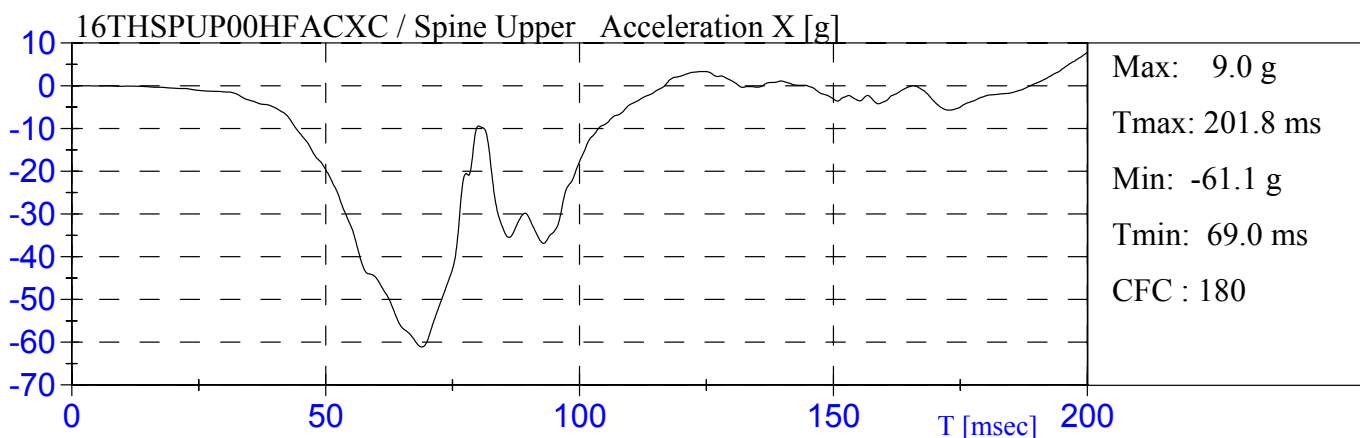


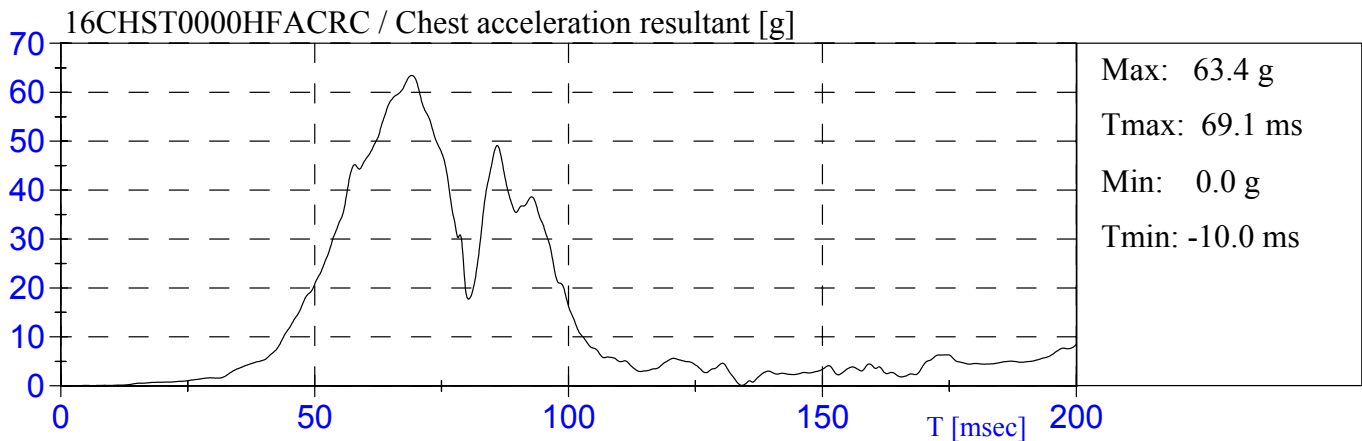
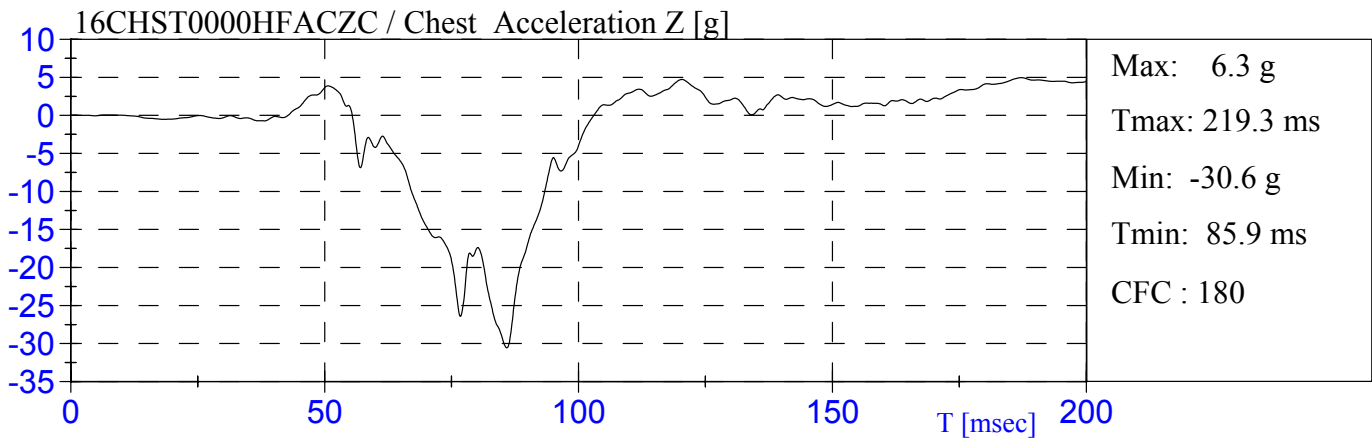
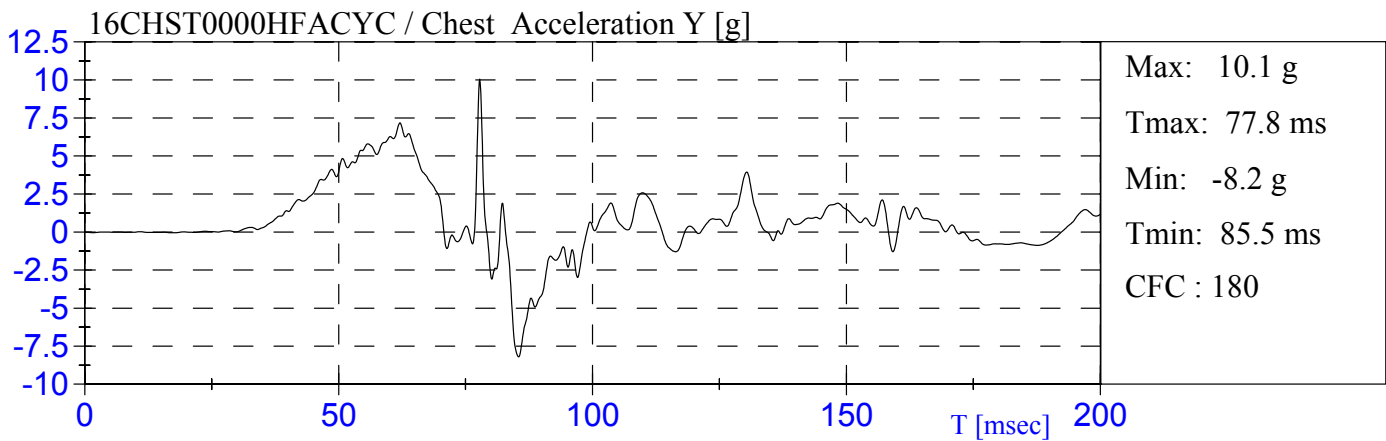
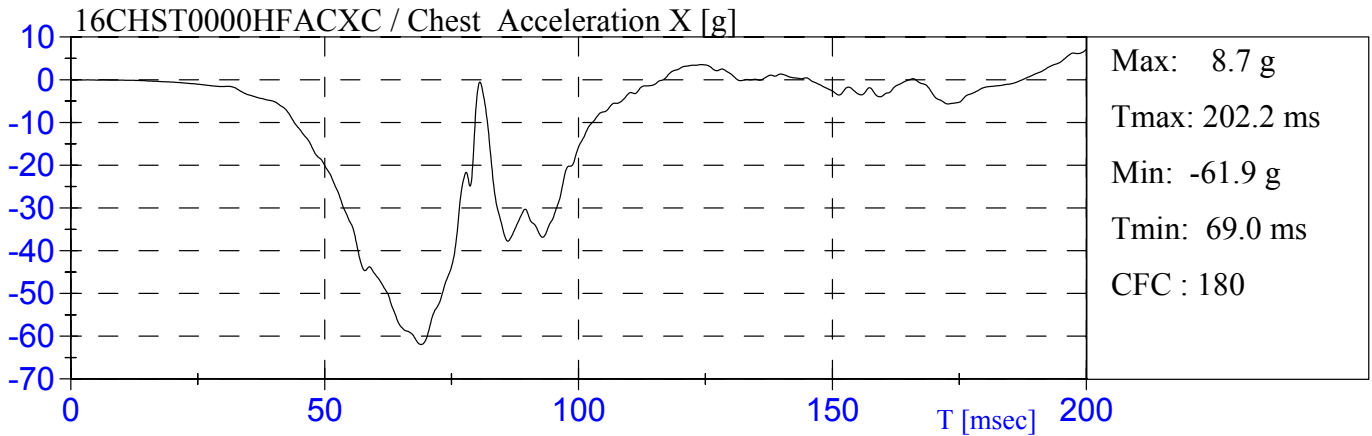


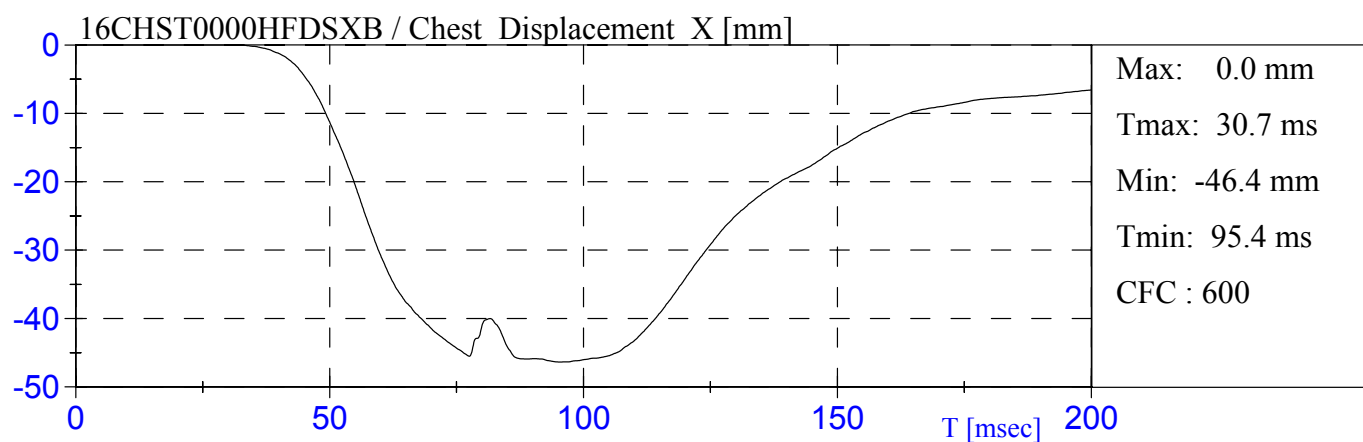


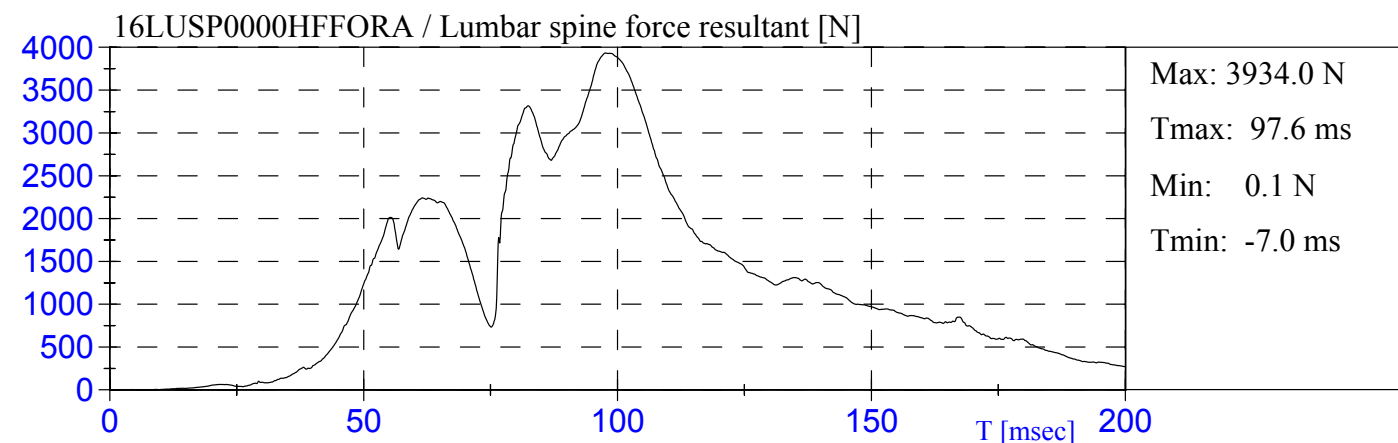
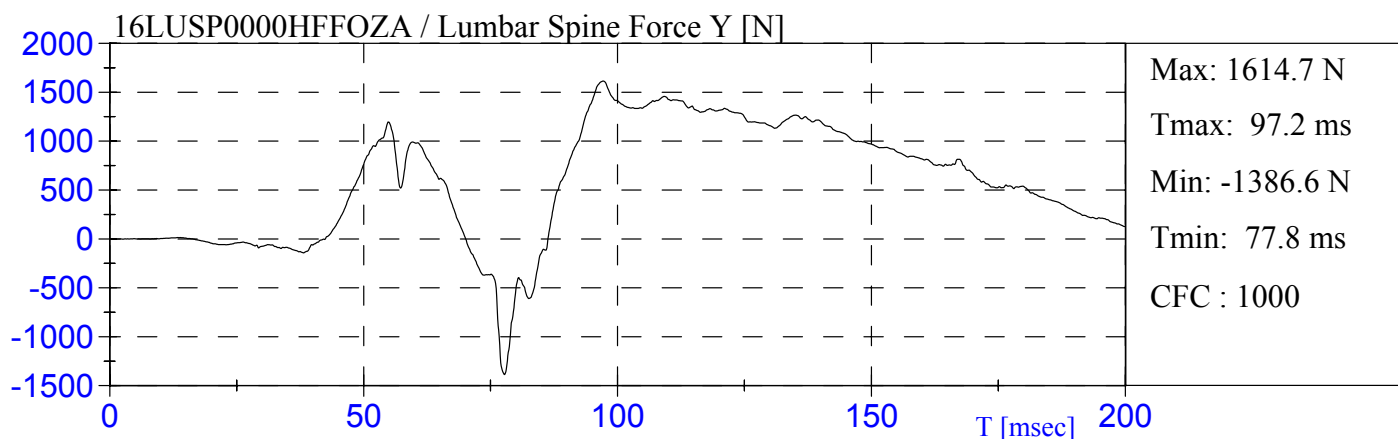
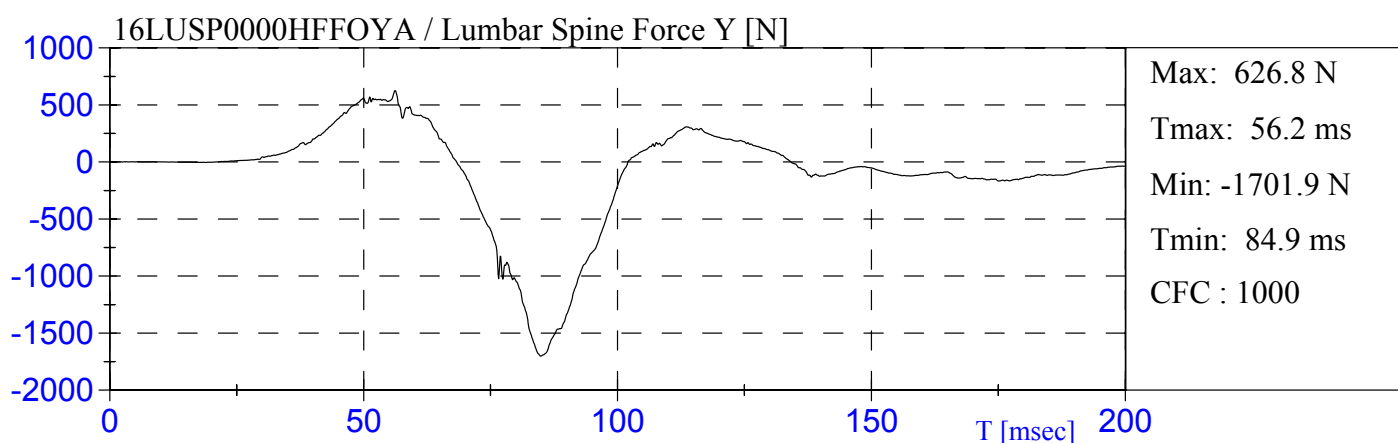
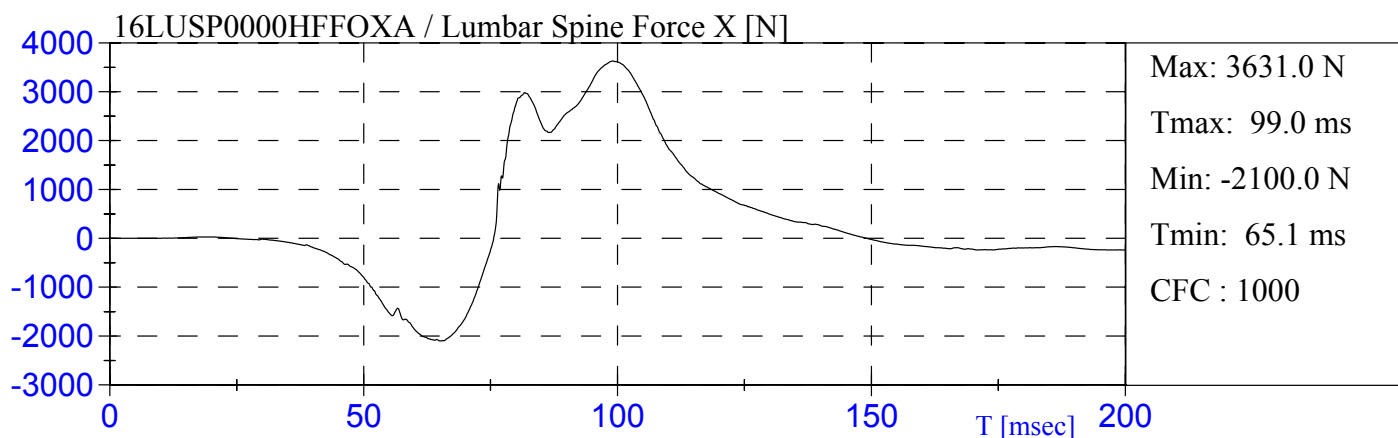


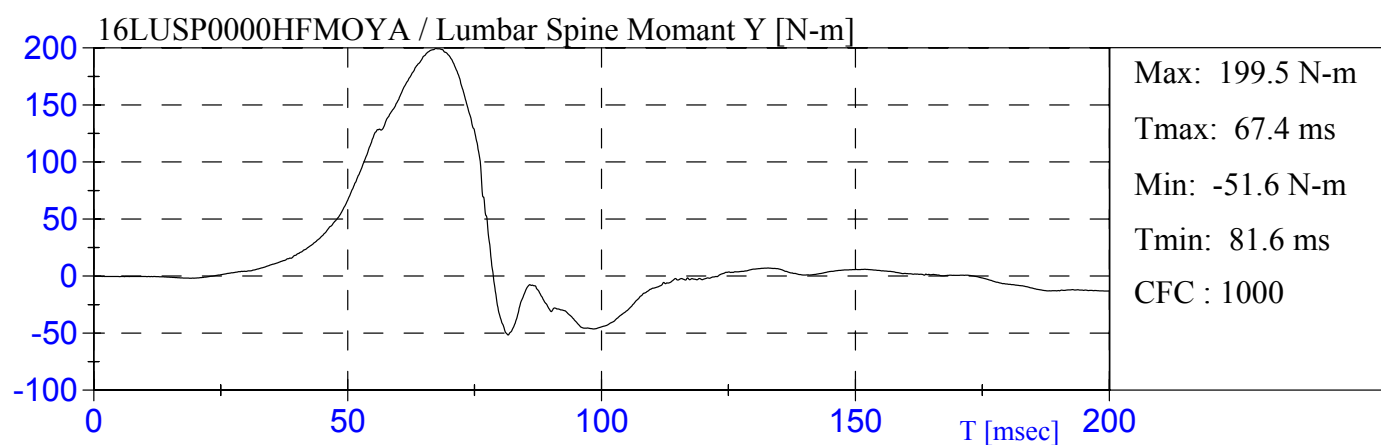
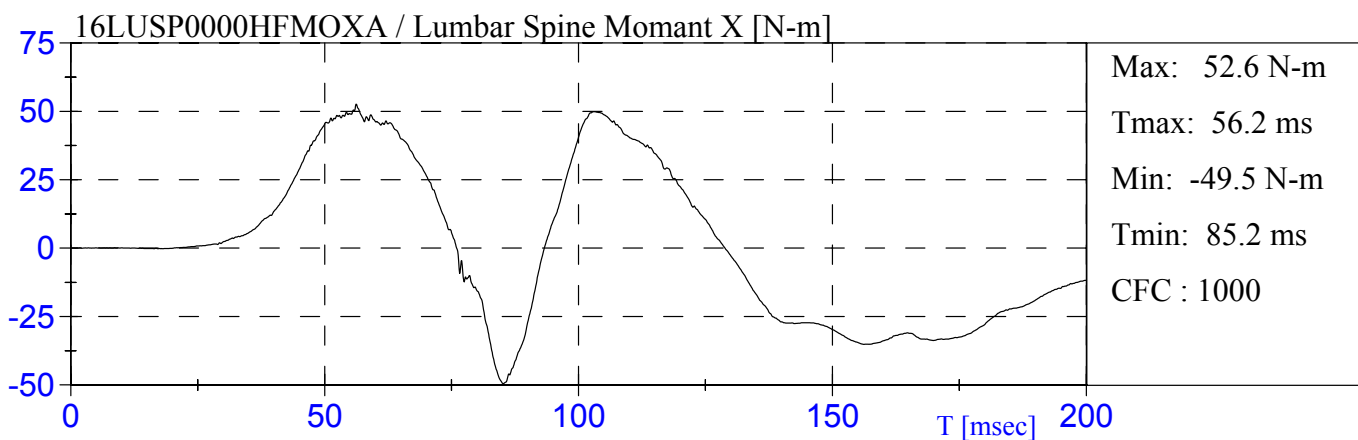


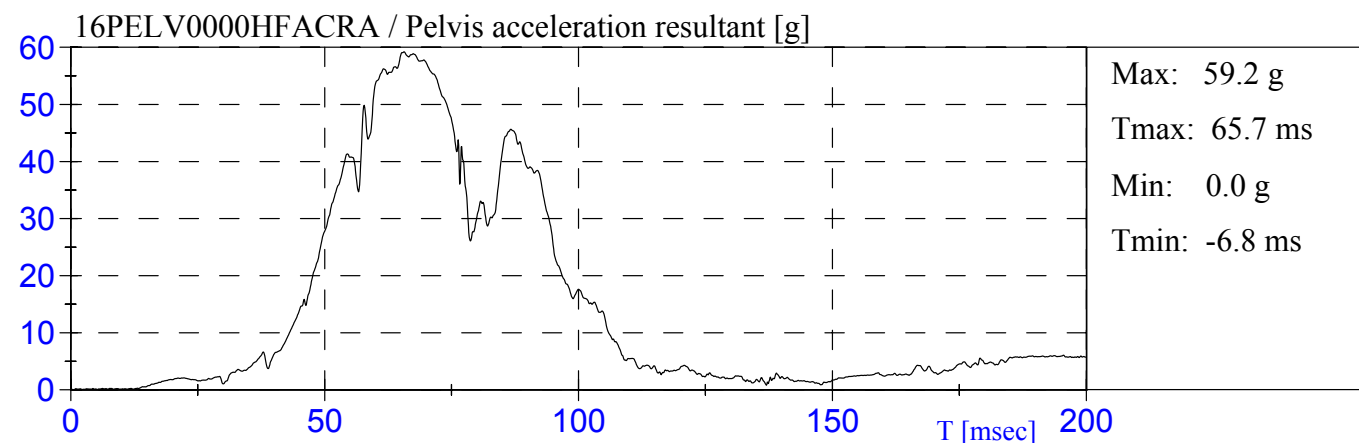
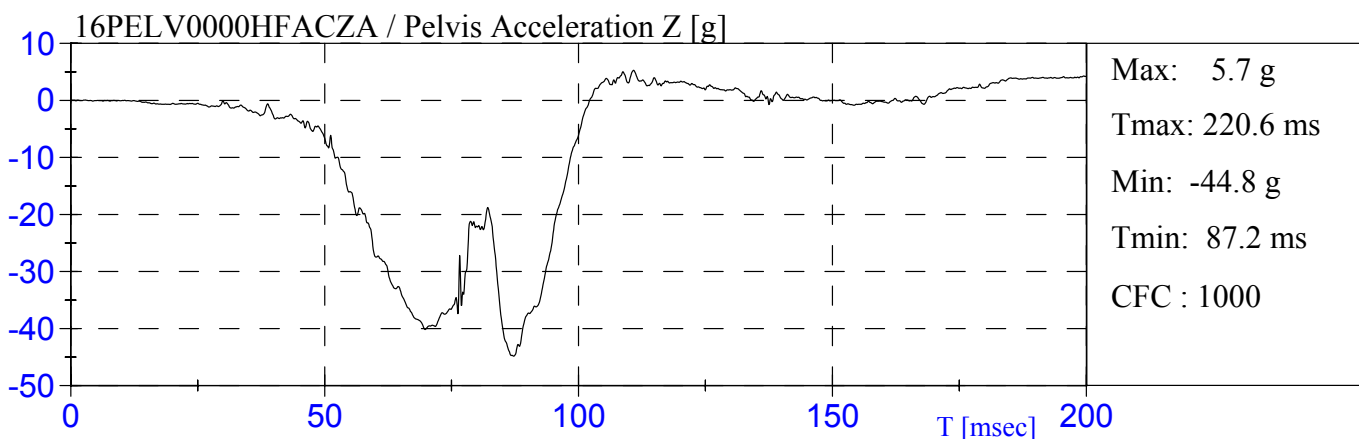
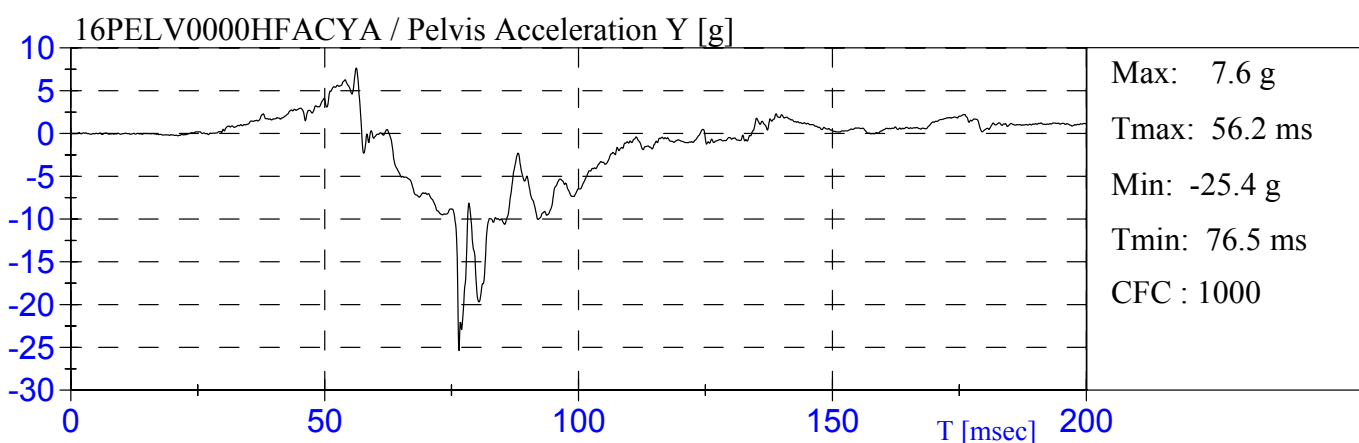
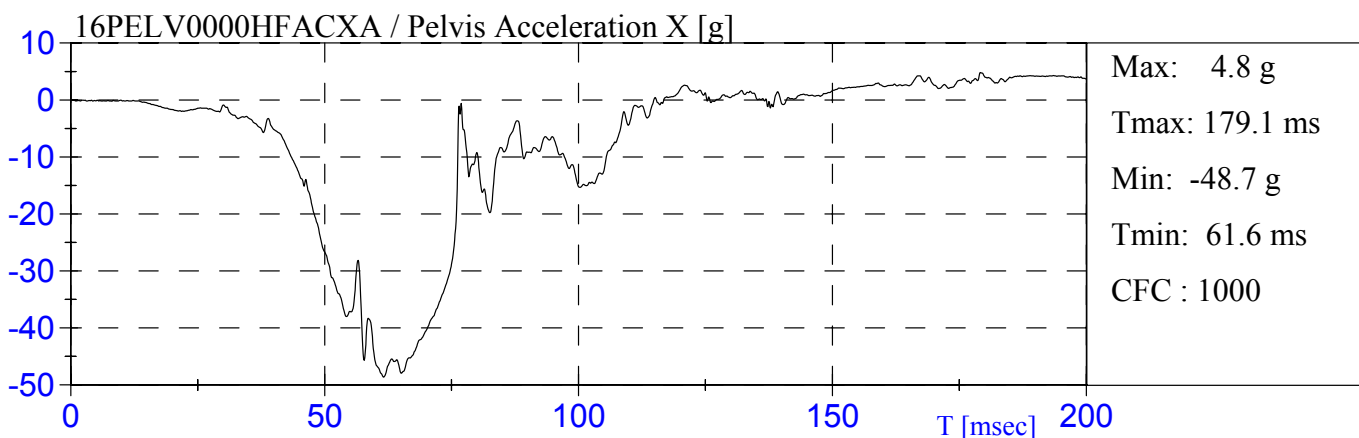


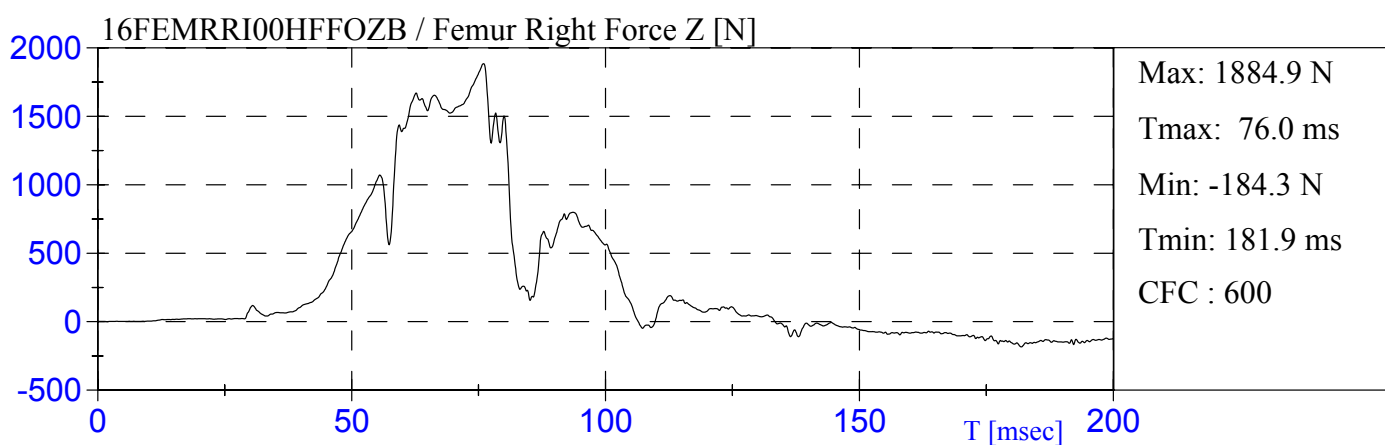
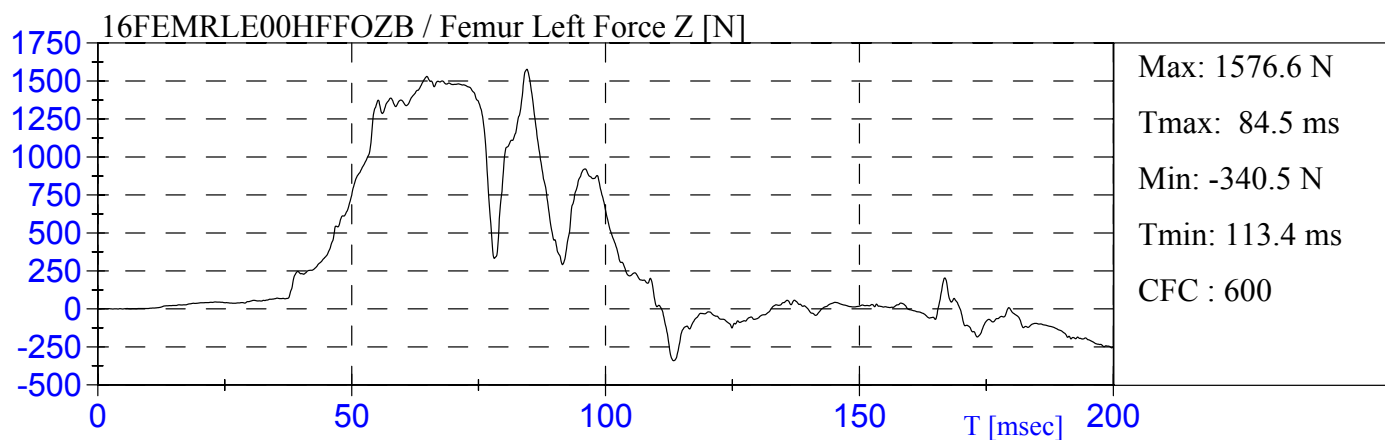


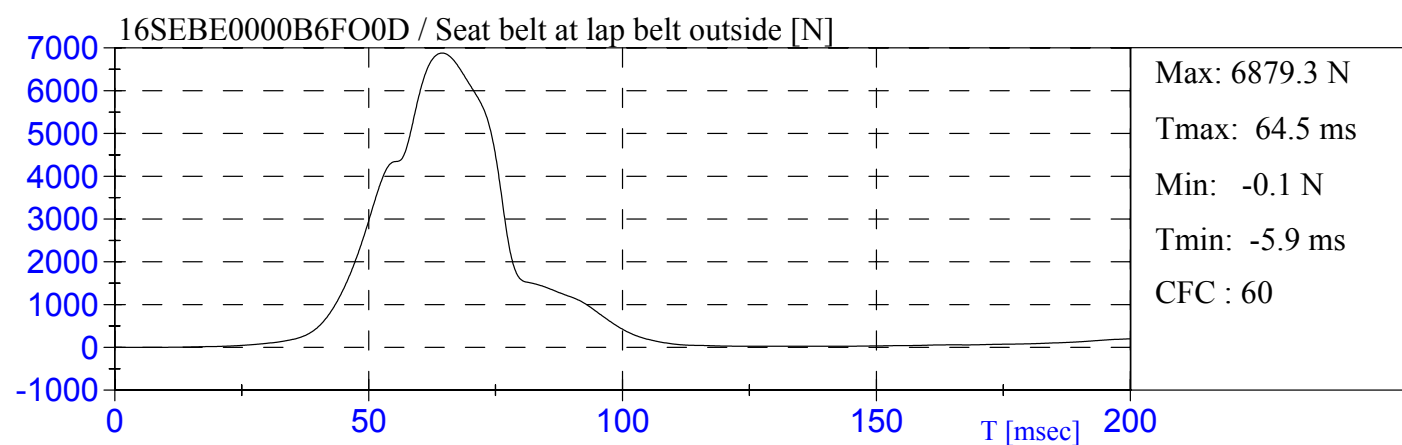
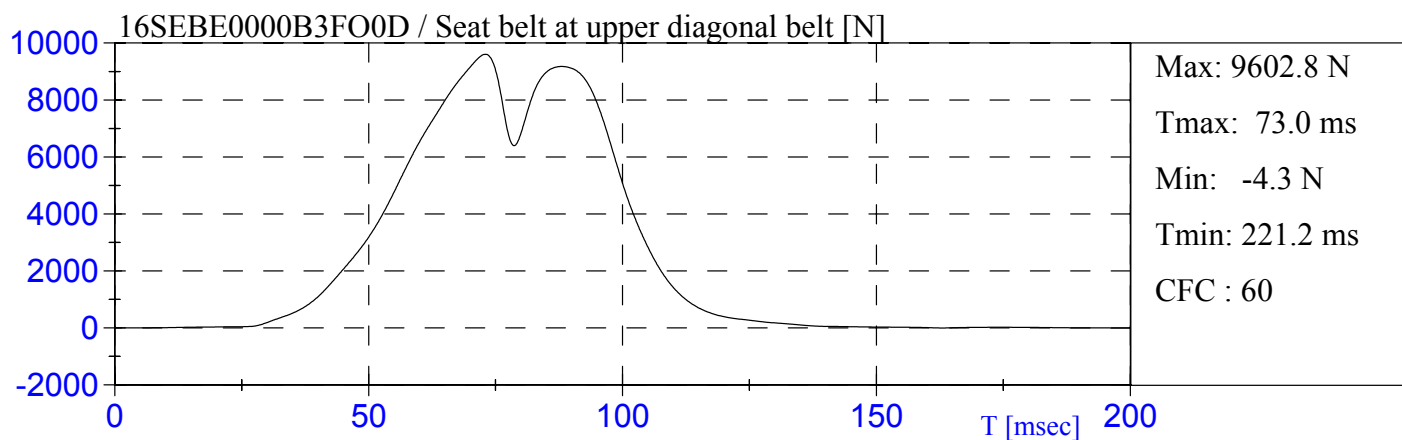


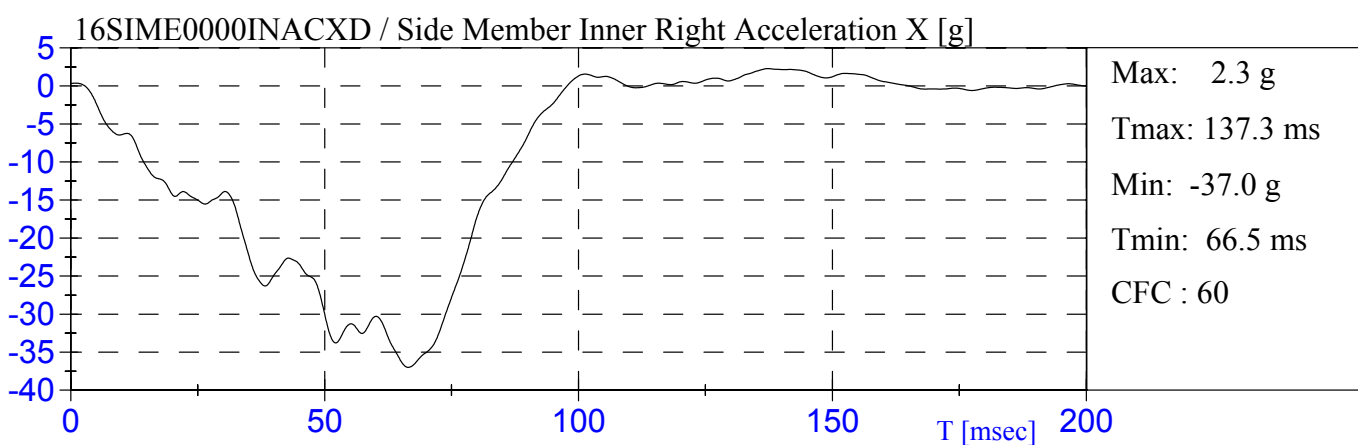
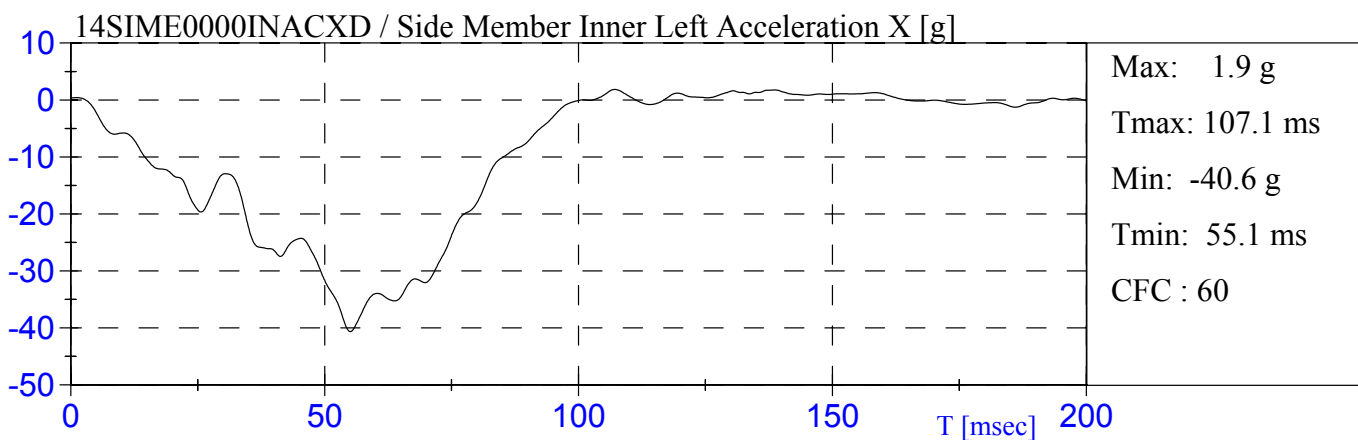


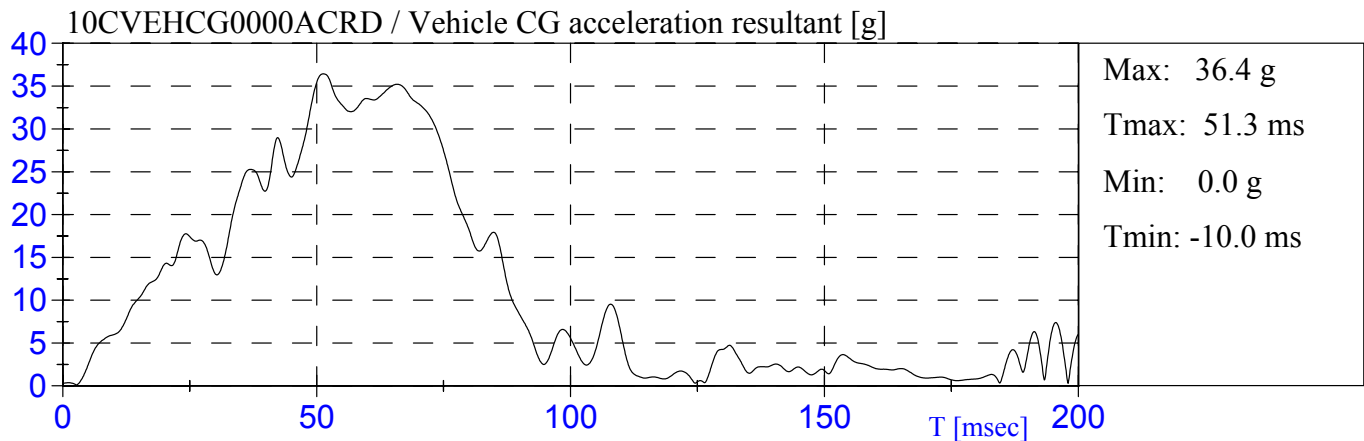
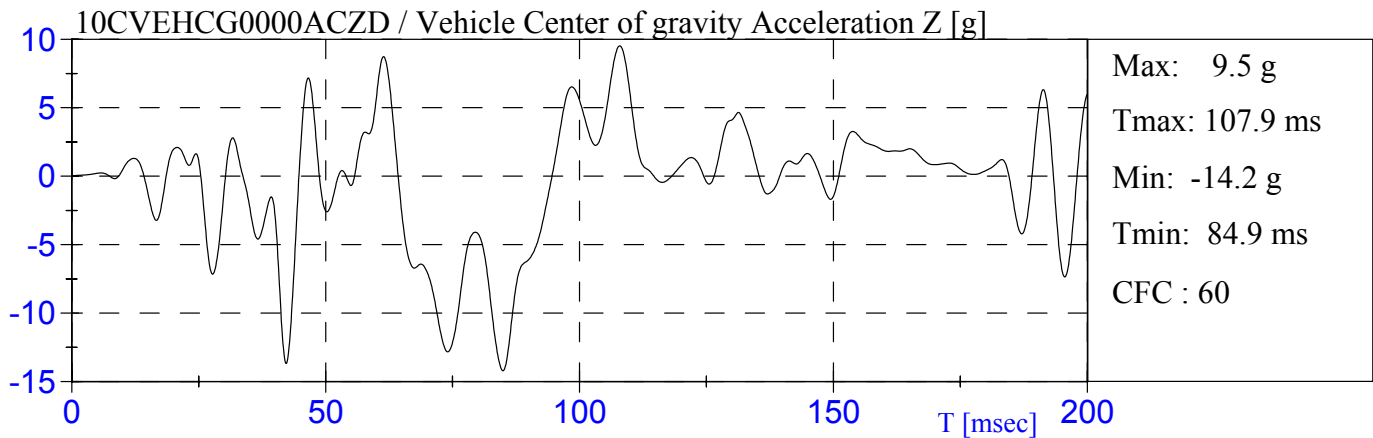
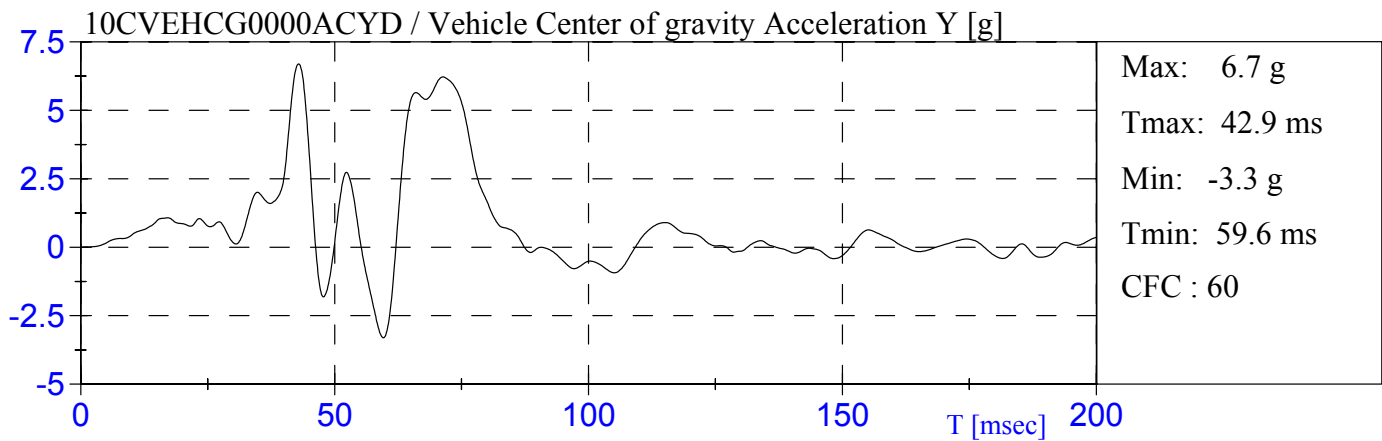
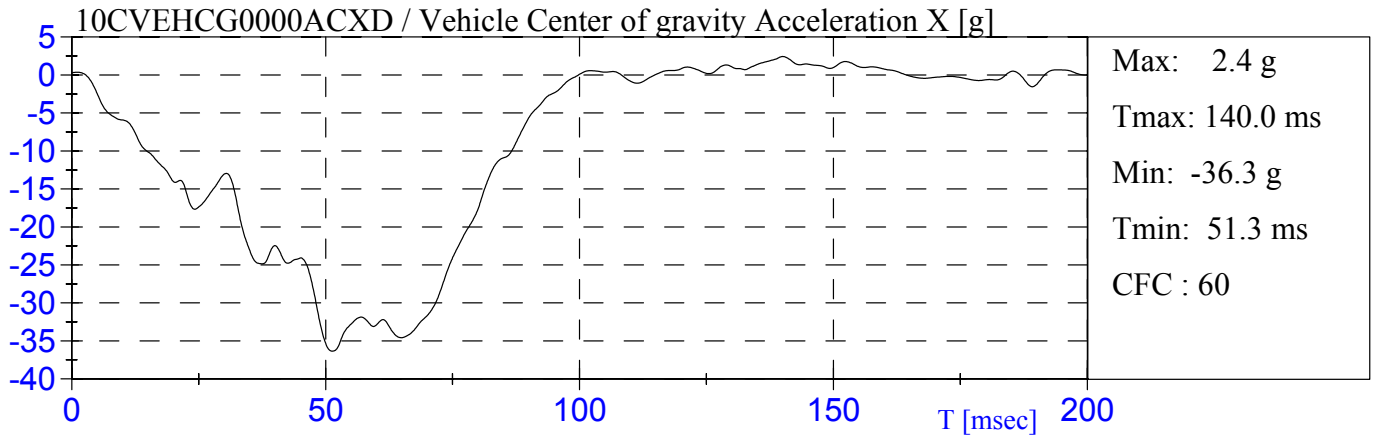


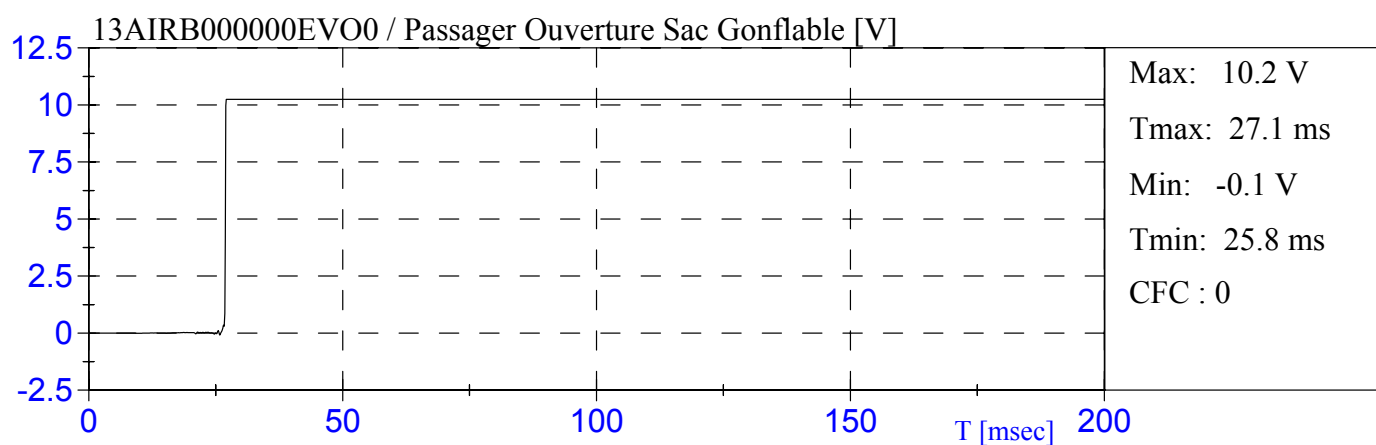
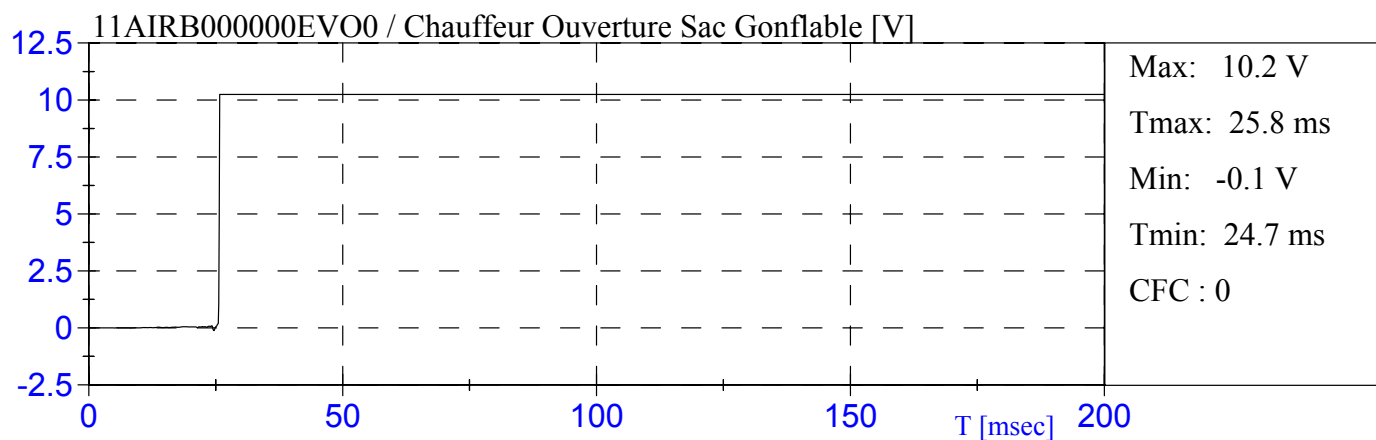


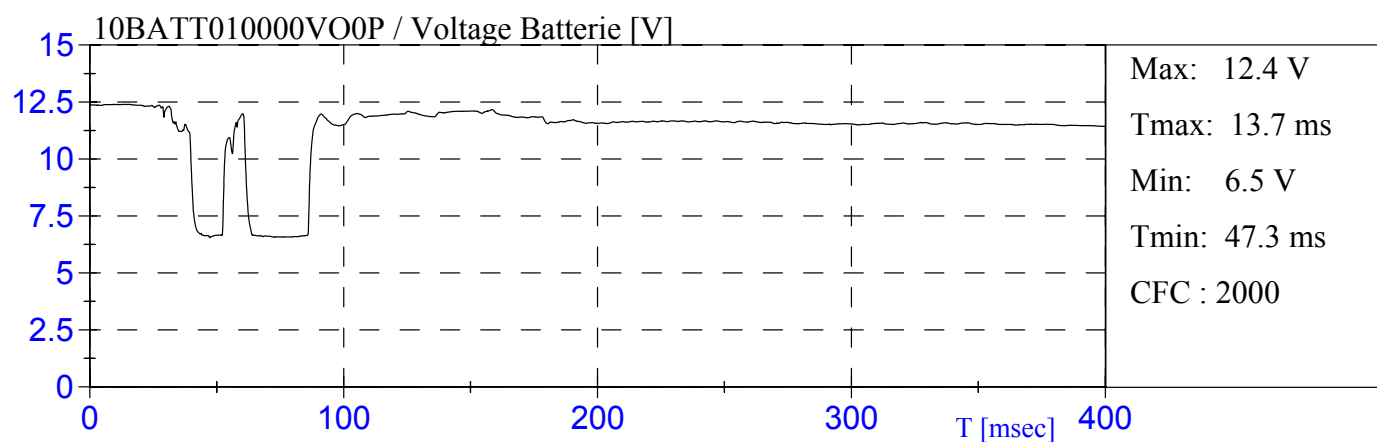


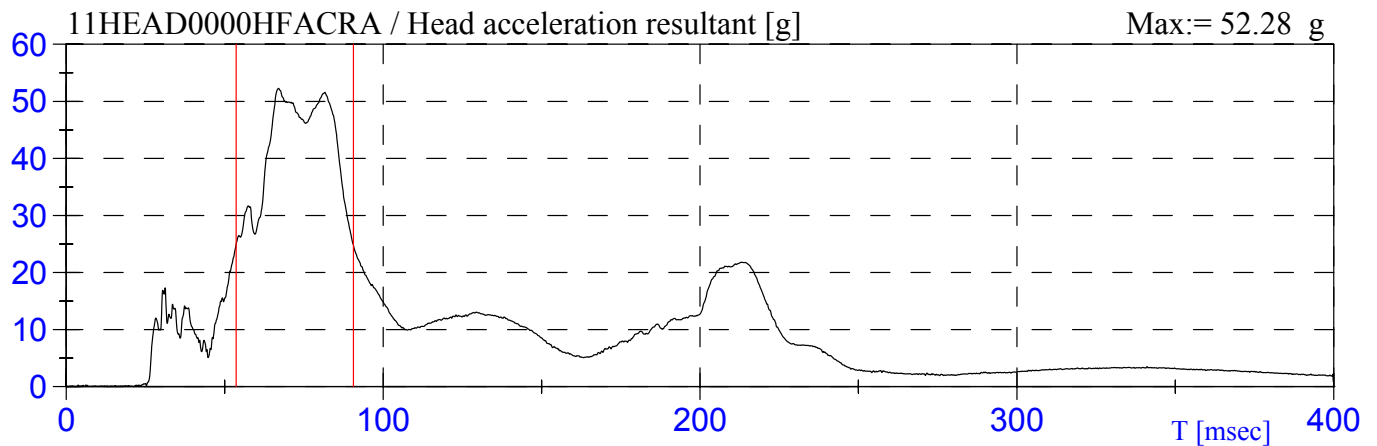








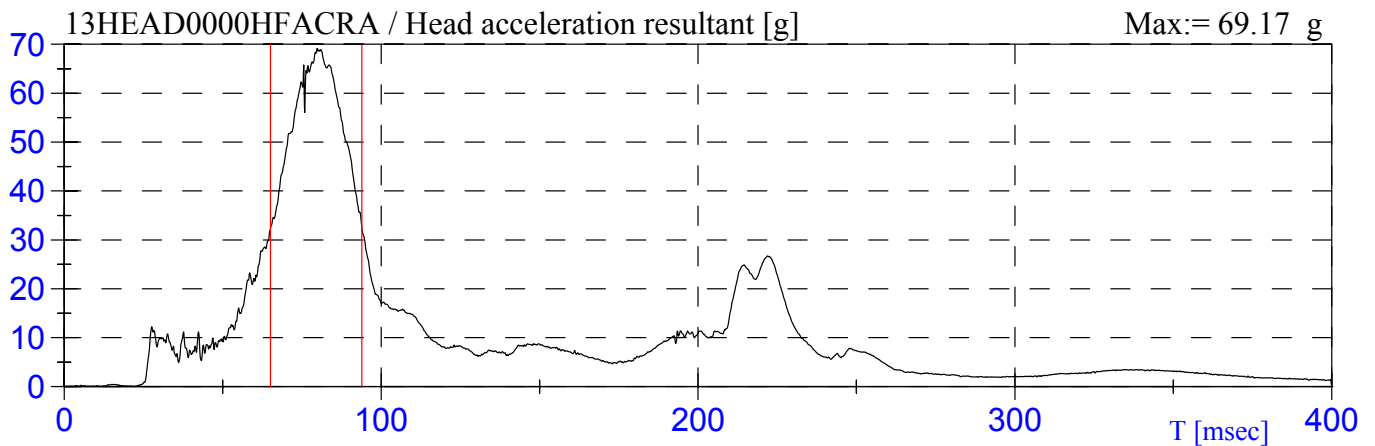




HEAD INJURY CRITERIA (HIC) *
CRITÈRE DE BLESSURE DE LA TÊTE

HIC:= 408	HIC(36ms):= 408	HIC(15ms):= 253
T1:= 53.6 ms	T1:= 54.1 ms	T1:= 66.2 ms
T2:= 90.6 ms	T2:= 90.1 ms	T2:= 81.2 ms

* Selon / According To: SAE J1727 96-08

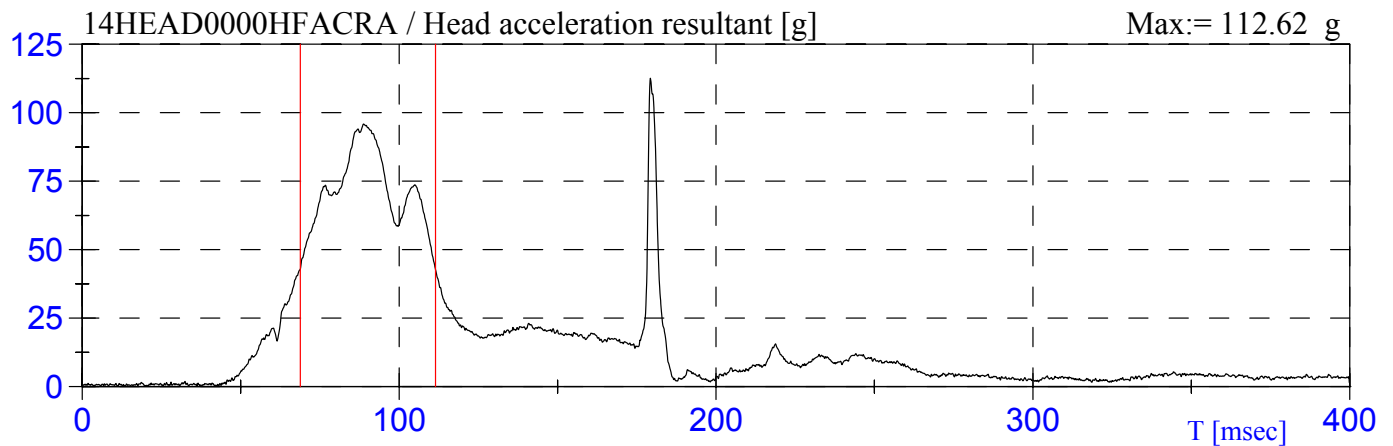


HEAD INJURY CRITERIA (HIC) *

CRITÈRE DE BLESSURE DE LA TÊTE

HIC:= 619	HIC(36ms):= 619	HIC(15ms):= 480
T1:= 65.1 ms	T1:= 65.1 ms	T1:= 72.5 ms
T2:= 93.9 ms	T2:= 93.9 ms	T2:= 87.5 ms

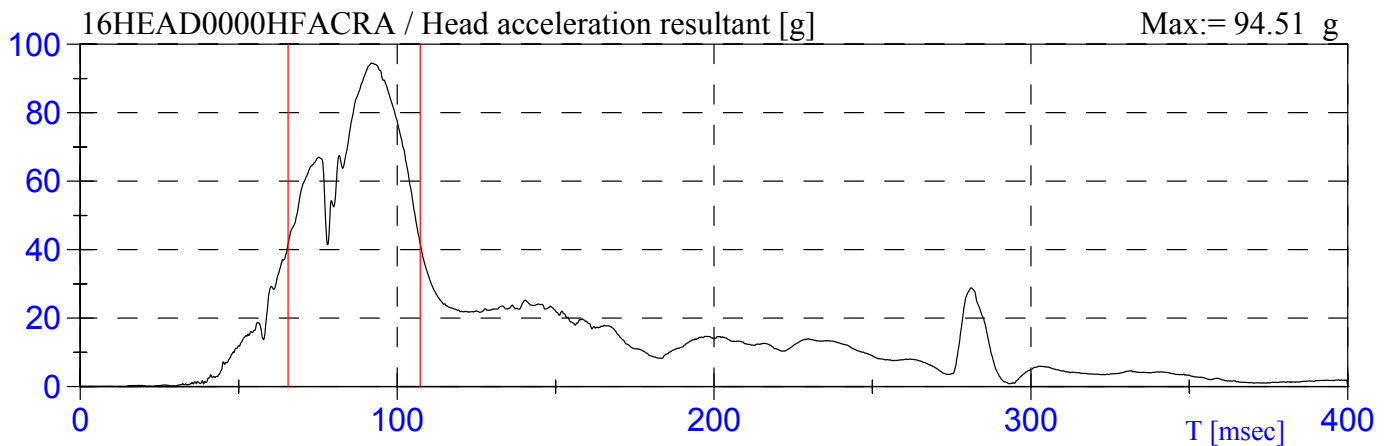
* Selon / According To: SAE J1727 96-08



HEAD INJURY CRITERIA (HIC) *
CRITÈRE DE BLESSURE DE LA TÊTE

HIC:= 1857	HIC(36ms):= 1781	HIC(15ms):= 1056
T1:= 68.8 ms	T1:= 72.7 ms	T1:= 81.1 ms
T2:= 111.5 ms	T2:= 108.7 ms	T2:= 96.1 ms

* Selon / According To: SAE J1727 96-08



HEAD INJURY CRITERIA (HIC) *

CRITÈRE DE BLESSURE DE LA TÊTE

HIC:= 1672	HIC(36ms):= 1632	HIC(15ms):= 1079
T1:= 65.6 ms	T1:= 69.0 ms	T1:= 85.3 ms
T2:= 107.3 ms	T2:= 105.0 ms	T2:= 100.3 ms

* Selon / According To: SAE J1727 96-08

Neck Injury Criteria: 11NIJCIP000000YX

$N_{ij}^* = 0.97$

Valeurs critiques

Criticals Values

N _{tf}	N _{te}	N _{cf}	N _{ce}	Tc	4287
				Cc	3880
0.15	0.97	0.00	0.16	Fc	155
				Ec	67

* Selon / According To: Federal Register 5/2000

Neck Injury Criteria: 13NIJCIP000000YX

$N_{ij}^* = 0.80$

Valeurs critiques
Criticals Values

N _{tf}	N _{te}	N _{cf}	N _{ce}	Tc	4287
				Cc	3880
0.17	0.80	0.20	0.37	Fc	155
				Ec	67

* Selon / According To: Federal Register 5/2000

Neck Injury Criteria: 14NIJCIP000000YX

$N_{ij}^* = 1.20$

Valeurs critiques
Criticals Values

N _{tf}	N _{te}	N _{cf}	N _{ce}	Tc	4287
				Cc	3880
1.09	1.20	0.00	0.70	Fc	155
				Ec	67

* Selon / According To: Federal Register 5/2000

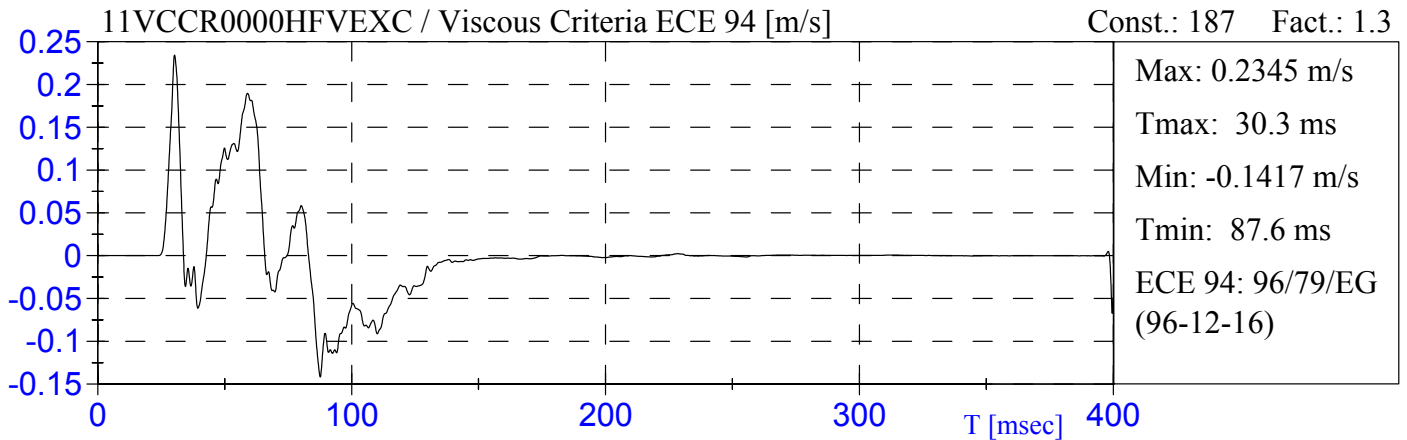
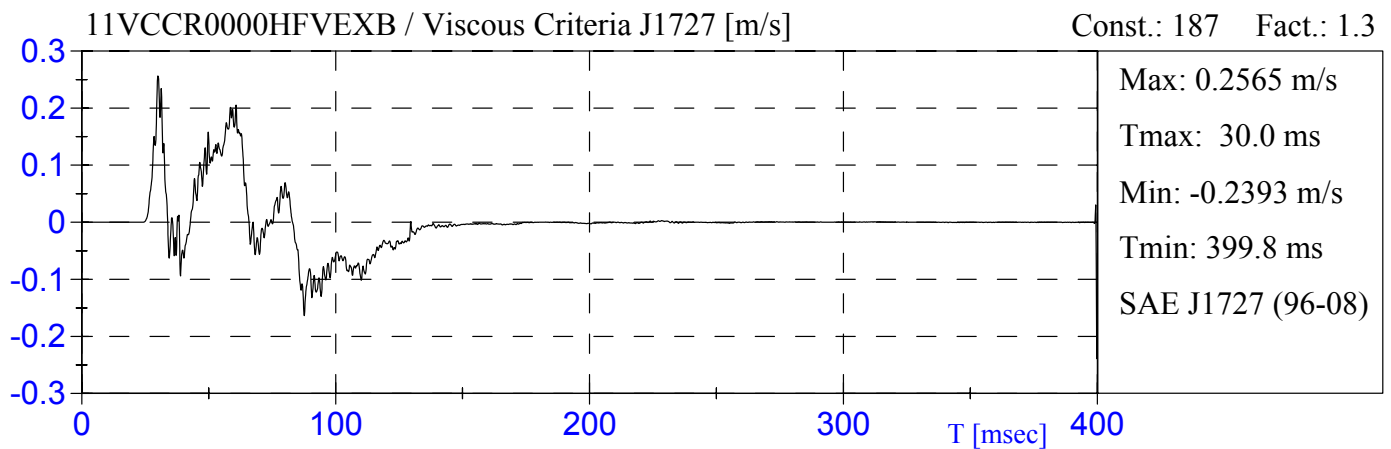
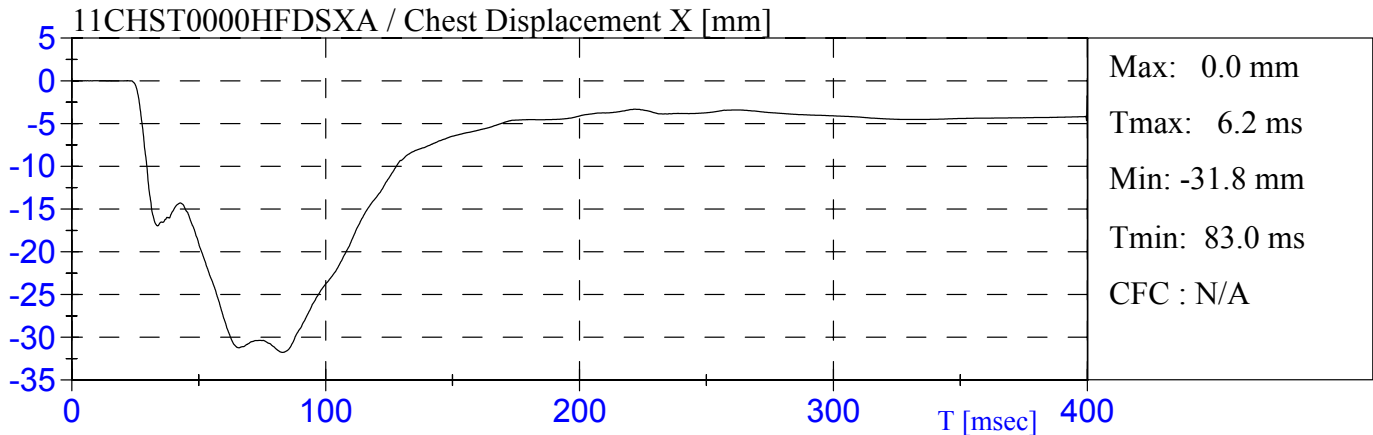
Neck Injury Criteria: 16NIJCIP000000YX

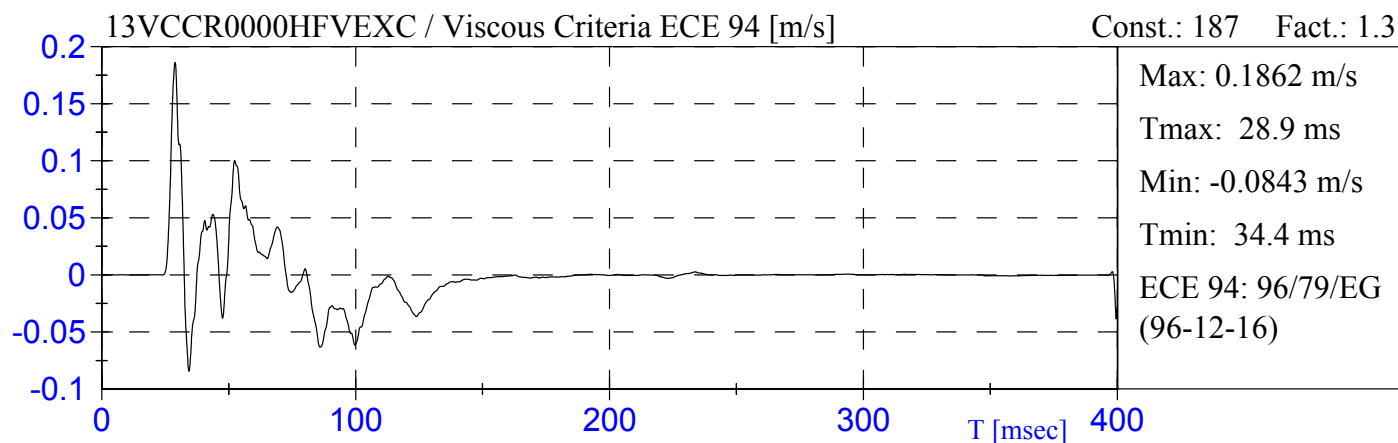
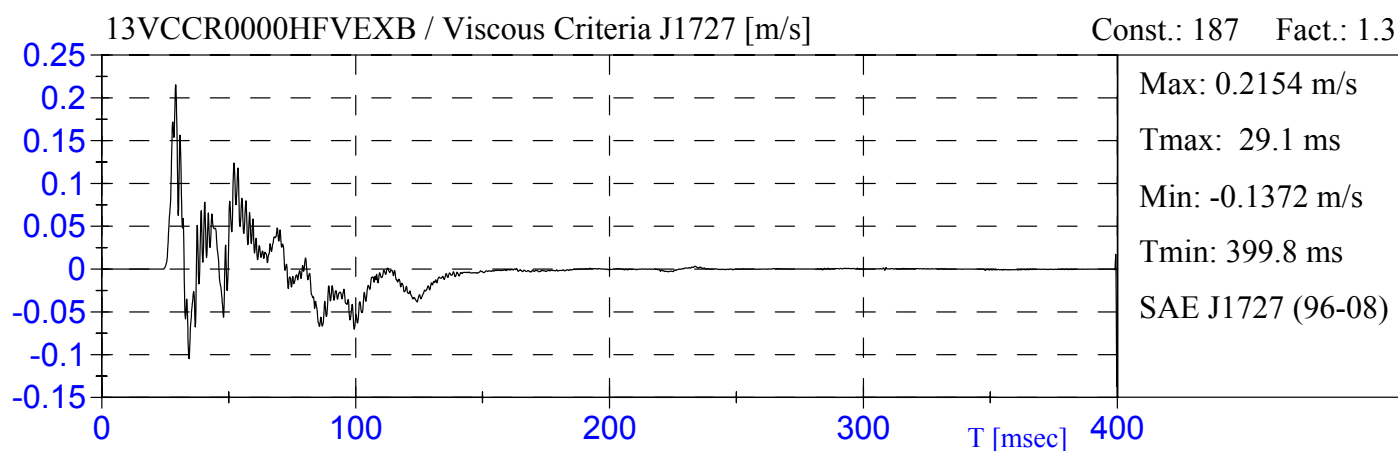
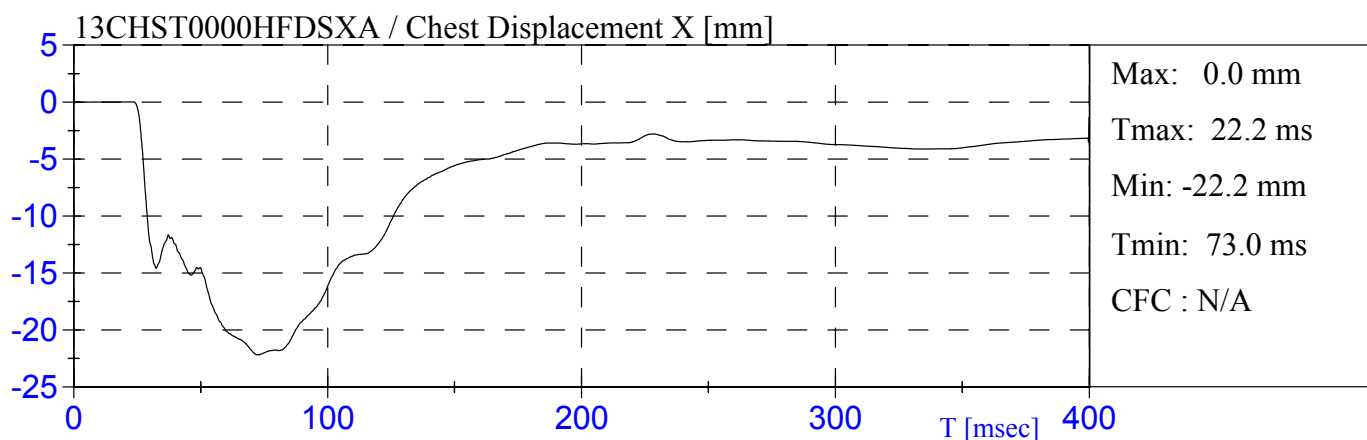
$N_{ij}^* = 1.03$

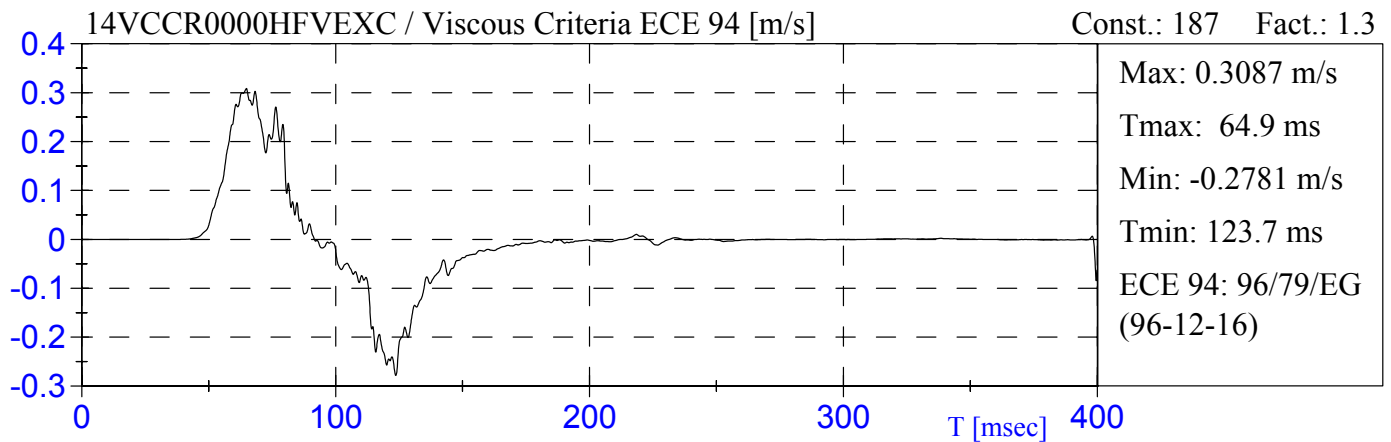
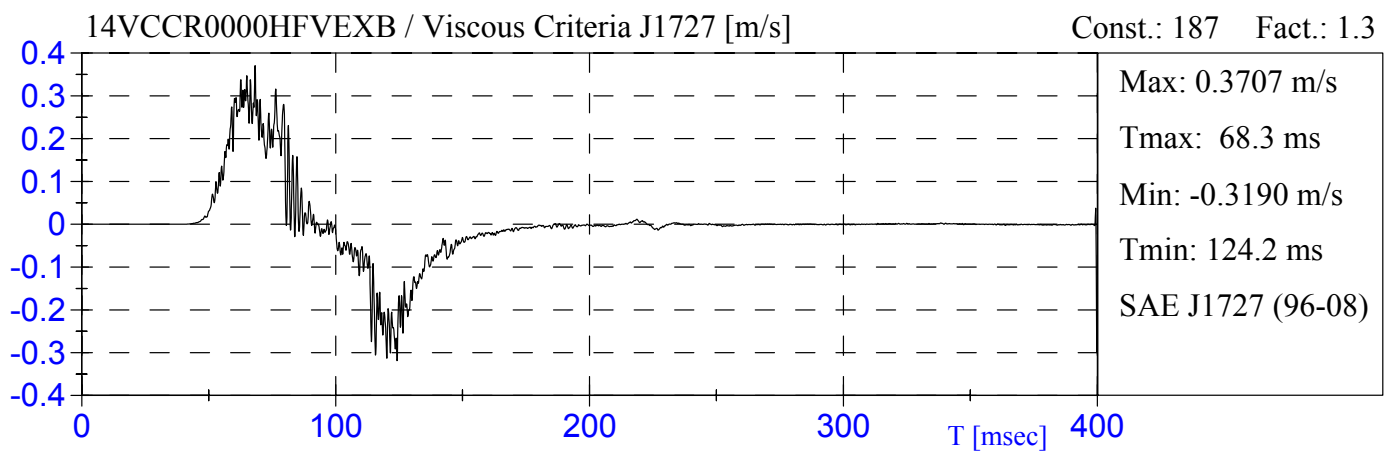
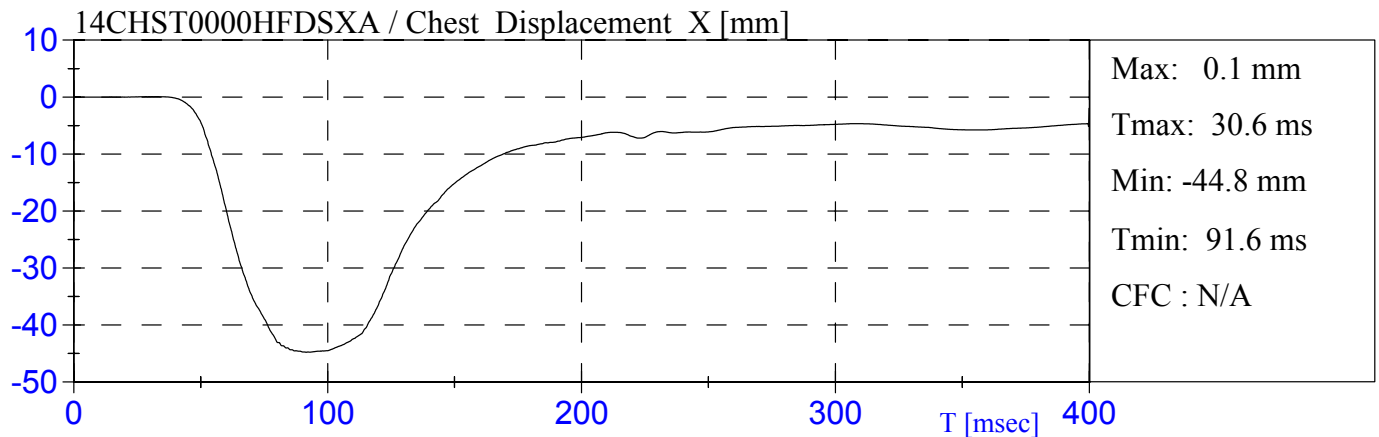
Valeurs critiques
Criticals Values

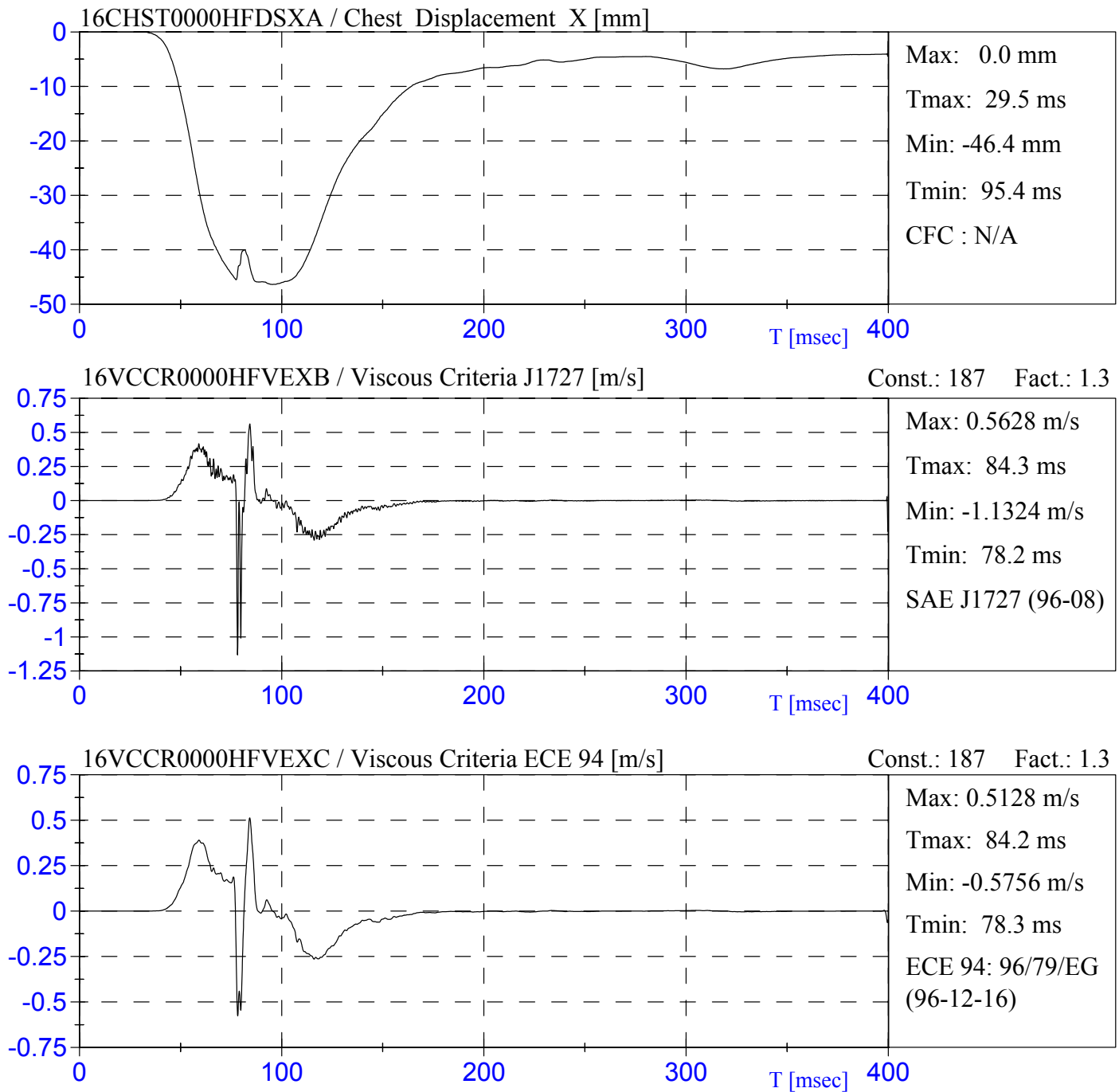
N_{tf}	N_{te}	N_{cf}	N_{ce}	Tc	4287
				Cc	3880
1.03	0.86	0.04	0.00	Fc	155
				Ec	67

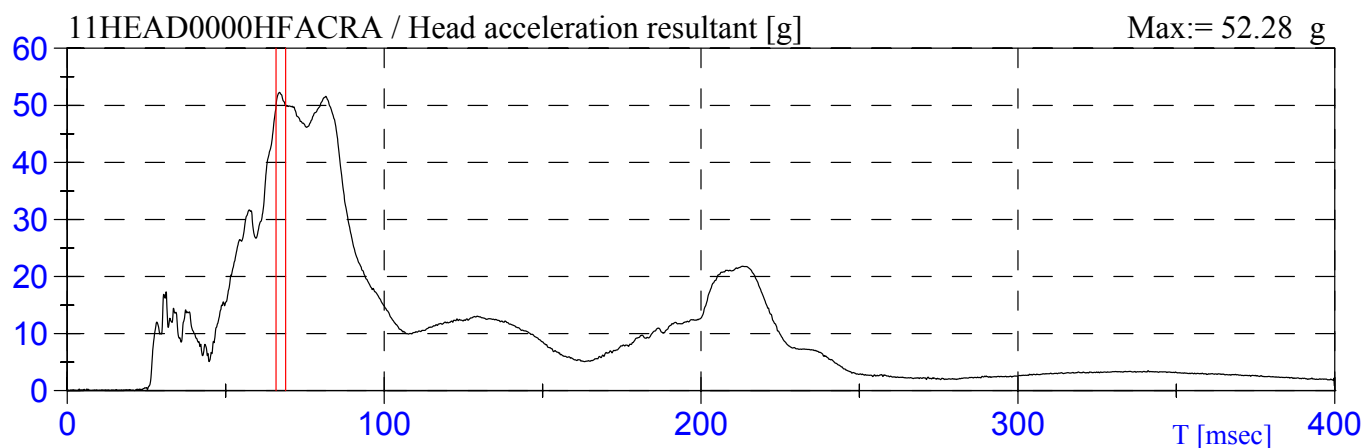
* Selon / According To: Federal Register 5/2000





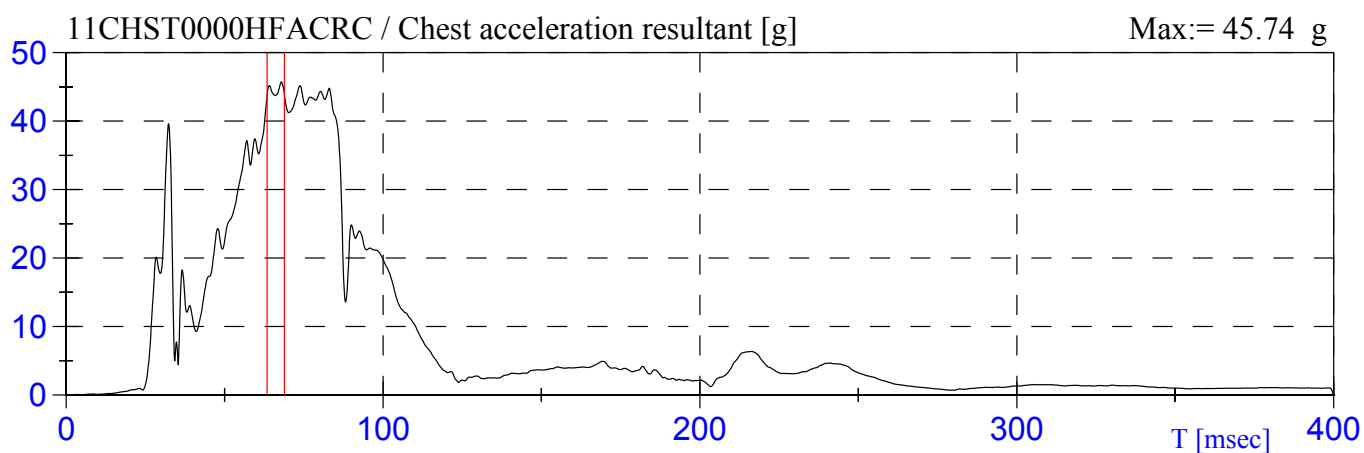






CLIP 3ms *

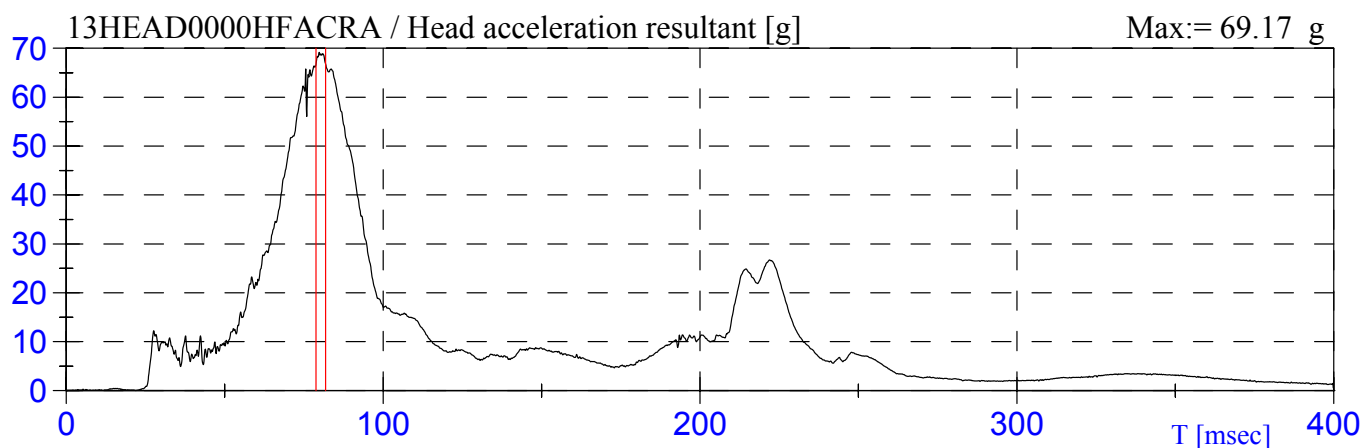
Acc. := 50.09 g	T1:= 65.9 ms	T2:= 68.9 ms
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CLIP 3ms *

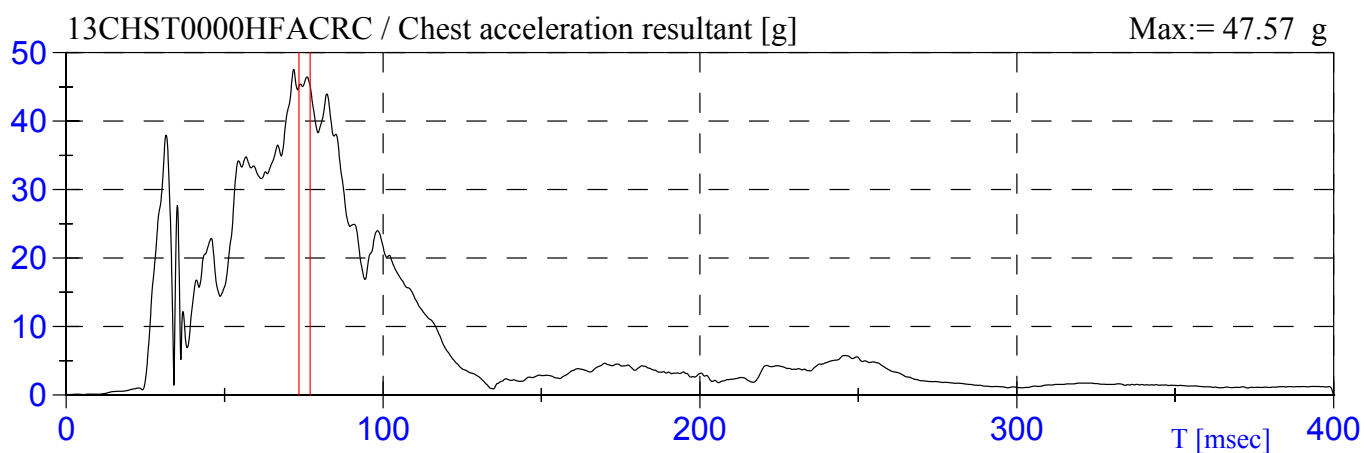
Acc. := 43.73 g	T1:= 63.4 ms	T2:= 68.9 ms
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* Selon / According To: NHTSA CLIP VERSION 2.1 5/95



CLIP 3ms *

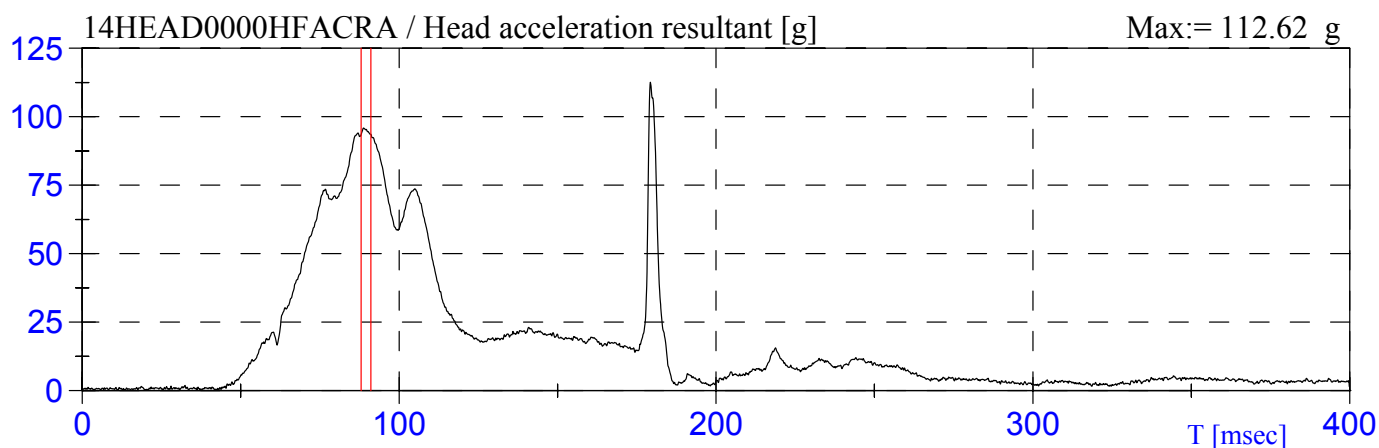
Acc. := 66.81 g	T1:= 78.9 ms	T2:= 81.9 ms
-----------------	--------------	--------------



CLIP 3ms *

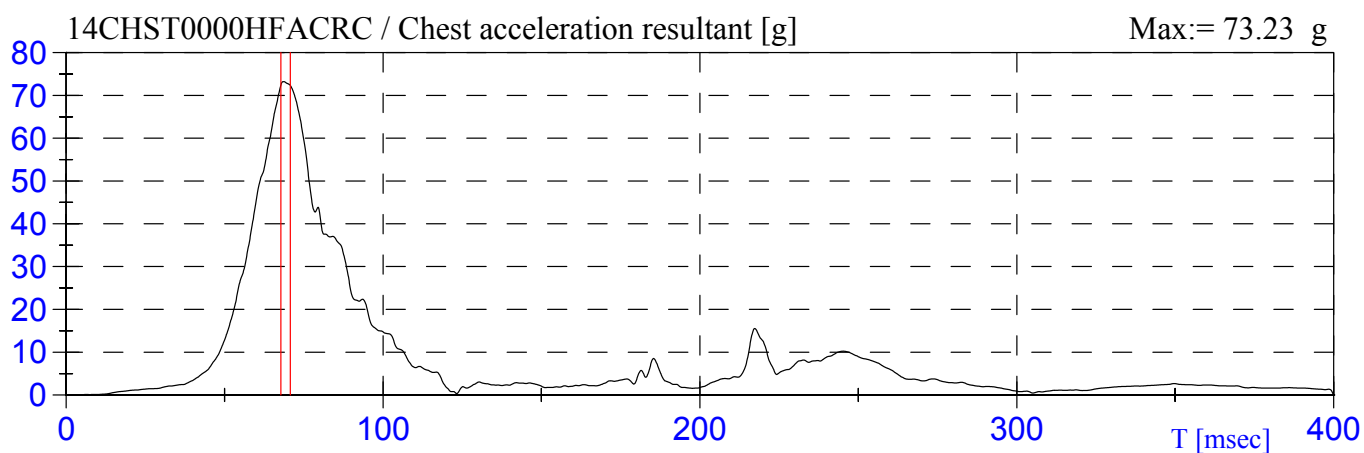
Acc. := 45.05 g	T1:= 73.5 ms	T2:= 77.0 ms
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* Selon / According To: NHTSA CLIP VERSION 2.1 5/95



CLIP 3ms *

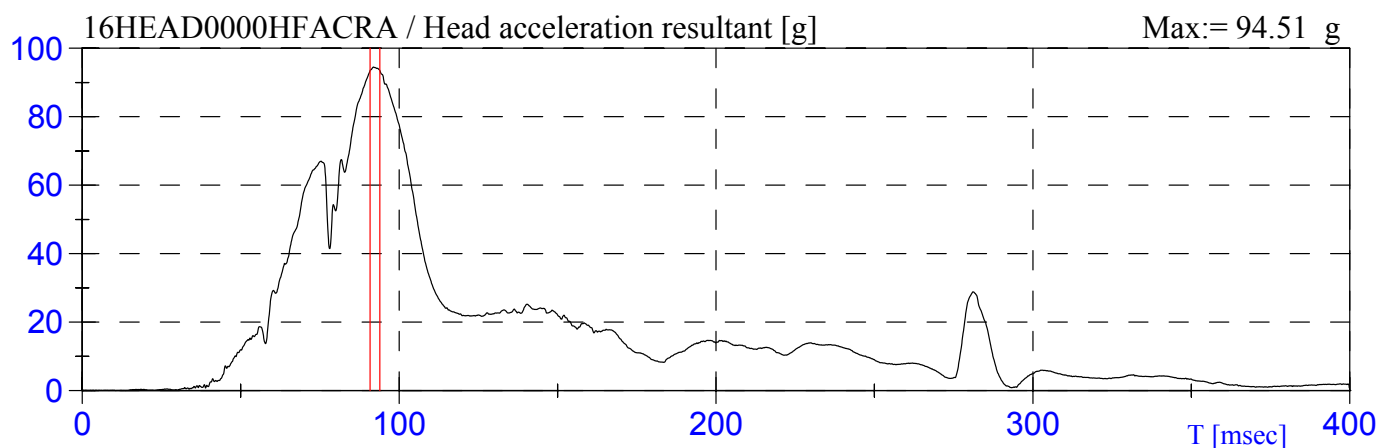
Acc. := 93.59 g	T1:= 88.0 ms	T2:= 91.1 ms
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CLIP 3ms *

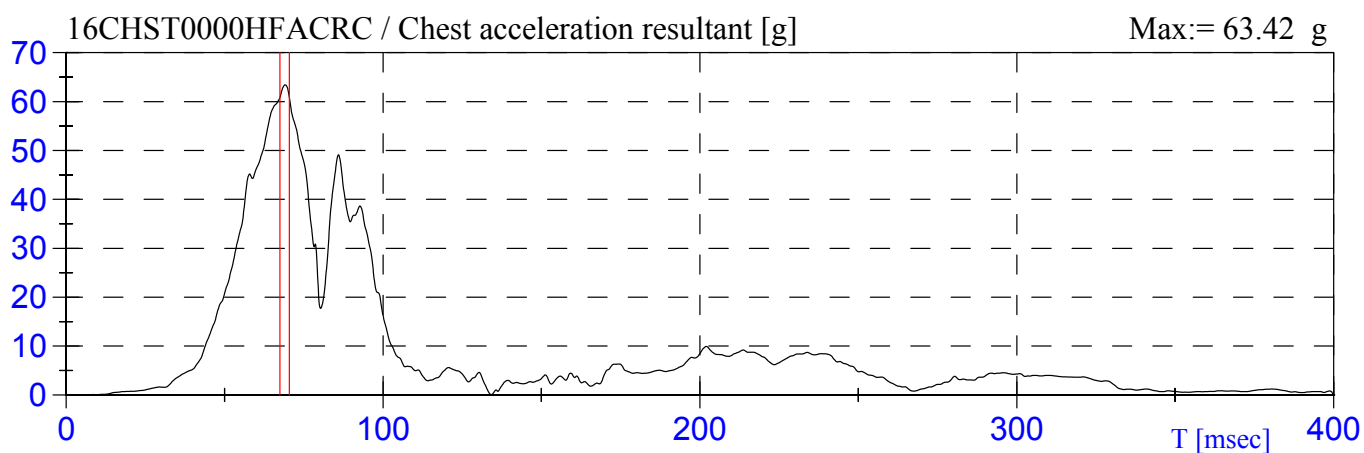
Acc. := 72.36 g	T1:= 67.7 ms	T2:= 70.7 ms
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* Selon / According To: NHTSA CLIP VERSION 2.1 5/95



CLIP 3ms *

Acc. := 93.55 g	T1:= 90.9 ms	T2:= 93.9 ms
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CLIP 3ms *

Acc. := 60.84 g	T1:= 67.4 ms	T2:= 70.4 ms
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* Selon / According To: NHTSA CLIP VERSION 2.1 5/95

COMMENTAIRES / COMMENTS

- 14PELV0000HFACXA: Transitoire réparé de 65.4 ms à 71.3 ms.
Glitch removed from 65.4 ms to 71.3 ms.
- 14PELV0000HFACZA: Transitoire réparé de 64.1 ms à 71.9 ms.
Glitch removed from 64.1 ms to 71.9 ms.

APPENDICE /APPENDIX C

**DONNÉES DES TEMPÉRATURES
TEMPERATURE DATA**

Temperature TC05-250

