

Table A1: Case summary of tractor-trailer, large truck impacts to the rear of light vehicles causing serious injury (NASS-CDS 2004-2015).

Case ID			Striking	Struck Vehicle			Impacts		Severity			Most Serious Injury			
Year	PSU	#	Heavy Vehicle	Model	Make/Model	Body type	#	CDC	Delta V	BES	VAIS	MAIS	Injury	Occup.	Restraint
2004	9	127	2003 Freightliner	1987	Olds Delta 88	Car 4DR	2	07BDEW06	Unk	41	5	5	Lung laceration	Driv	None
2004	78	158	1993 Freightliner	2002	Kia Rio	Car 4DR	1	67BDAW06	Unk	41	3	3	Cervical facet fx	RFP	L-S
2005	2	16	2002 Freightliner	2001	Saturn SL	Car 4DR	5	06BZEW05	Unk	29	3	3	Lung contusion	Driv	L-S
2005	11	37	1998 Freightliner	2004	Mercury Sable	Car 4DR	2	07BDAW07	--	34	4	4	Flail chest, lung cont	Driv*	L-S
2005	49	119	1995 Volvo CBE	1994	Buick Park Ave	Car 4DR	1	6BDEW06	--	63	5	5	Brainstem compression	Driv	L-S
2005	74	48	1988 Peterbilt	1999	Chevy Tahoe**	SUV	2	06BDAW05	--	62	6	6	Burns	Driv	Unk
--	--	--	--	--	--	--	--	--	--	--	--	6	Burns	RFP	Unk
2005	74	144	2005 Kenworth***	2001	Chevy Cavalier	Car 2DR	3	06BDAW06	Unk	71	5	3	Cerebrum contusion	Driv	L-S
--	--	--	--	--	--	--	--	--	--	--	--	5	Cerebrum DAI	L 2nd	CRS
2006	45	63	2002 Chevy hvy truck	1999	Chevy Lumina	Minivan	2	06BDEW01	Mod	--	3	3	Tibia fracture shaft fx	L 2nd	L-S
2007	9	46	1998 Freightliner	2007	Chrysler T&C	Minivan	1	06BRAE08	--	Severe	3	3	Cerebrum	Driv	L-S
2007	9	47	2005 Freightliner	1996	Nissan Altima	Car 4DR	2	06BDAW09	Severe	--	4	4	Cerebellum laceration	Driv	L-S
2008	48	231	2006 Sterling truck	1998	Ford Mustang	Car 2DR	1	06BDEW05	Mod	--	5	5	Thoracic spine cord	RFP	L-S
--	--	--	--	--	--	--	--	--	--	--	--	3	Rig cage fx >3 ribs	L 2nd	None
2008	49	187	2007 Freightliner	2006	Suzuki	Car 4DR	1	06BDAW08	--	--	5	5	Cerebrum hematoma	Driv	Unk
2009	11	186	2000 Freightliner	2007	Buick Lacrosse	Car 4DR	3	06BYEW06	Unk	31	3	3	Humerus fracture	Driv	L-S
2009	73	85	2005 Sterling	2004	Dodge Ram**	Pick-up	2	26BDEW99	Severe	--	6	6	Burns	Driv	Unk
--	--	--	--	--	--	--	--	--	--	--	--	6	Burns	RFP	Unk
--	--	--	--	--	--	--	--	--	--	--	--	6	Burns	L 2nd	Unk
--	--	--	--	--	--	--	--	--	--	--	--	6	Burns	C 2nd	Unk
--	--	--	--	--	--	--	--	--	--	--	--	6	Burns	R 2nd	Unk
2010	2	115	2007 International	2004	Honda Civic	Car 4DR	1	06BDEW07	Severe	--	6	5	Thorax, hemopneu/thor	Driv	L-S
--	--	--	--	--	--	--	--	--	--	--	--	6	Heart (Myocardium)	L 2nd	None
2010	41	201	1989 Kenworth***	2010	Ford Focus	Car 4DR	2	06B99999	--	--	4	4	Lung, contusion	Driv	Unk
2011	3	120	2007 International	2004	GMC Safari	Minivan	2	06BDAW05	--	--	3	3	Symphysis pubis	Driv	L-S
2011	49	64	2010 Peterbilt	2011	Ford Fiesta	Car 4DR	1	06BDAW99	Severe	--	3	3	Spleen laceration	Driv	L-S
2011	74	48	2006 Volvo truck	2005	Toyota Scion	Car 4DR	1	06BDEW02	Severe	31	3	3	Rib fx, unilateral flail	Driv	L-S
2013	73	99	2007 Volvo truck	2009	Dodge Ram	Pick-up	2	26BDAW09	Unk	--	6	6	Head crush	Driv	L-S
2014	11	15	2000 Volvo truck	2011	Chevrolet CK	Pick-up	3	06BDEW02	Mod	Mod	5	5	Brain stem injury	Driv	L-S
2015	11	55	2007 Freightliner	2008	Toyota	Car 4DR	2	06BDAW07	Severe	--	5	5	Cerebrum hematoma	Driv	L-S
2015	73	5	International Harvester	2010	Hyundai Gen	Car 2DR	3	06BDEW03	10-25	--	4	4	Cerebrum hematoma	Driv	L-S

\*ejection through rear window, \*\*fire cases, \*\*\* 2nd impact with another tractor-trailer, \*\*\*\* rollover, L-S: lap-shoulder belt, L: left, C: center, R: right, fx fracture



Figure A1: Crash test photos modified from Parenteau et al. (2020).

### Reference

Parenteau C, Croteau J, Zolock J. The Effect of Crash Severity and Structural Intrusion on ATD Responses in Rear Crashes, SAE 2020-01-1224, Society of Automotive Engineers, Warrendale PA, 2020.