

REPORT NUMBER: 214D-MGA-2001-014

**TESTING FOR FMVSS 214
SIDE IMPACT PROTECTION**

**General Motors
1996 Pontiac Grand Am 4 door
NHTSA NUMBER: PT0100**

**PREPARED BY:
MGA RESEARCH CORPORATION
5000 WARREN ROAD
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May 4, 2001

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW, ROOM 5208
WASHINGTON, D.C. 20590**

FMVSS 214D Test Data Summary

Vehicle: 1996 Pontiac Grand Am

Test Date: May 4, 2001

Test Speed: 53.1 kph

NHTSA No: PT0100

Vehicle Test Weight

Weight as Delivered: = 1358.9 kg

Weight as Tested: = 1572.6 kg

Injury Criteria:

ATD Position	TTI (g's)	Pelvis (g's)	HIC
Driver	62	66	172
Passenger	71	68	727

DATA SHEET NO. 5

SID INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 1996/Pontiac/Grand Am/4 door

NHTSA No.: PT0100

Test Program: FMVSS 214

Test Date: May 4, 2001

THORAX AND PELVIS PEAK ACCELERATIONS (FIR 100 Filtered)

Location	Axis	Units	Right Front Passenger				Right Rear Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Upper Rib (RUR)	Y	G's	19.9	68	62.7	37	7.9	57	79.2	42
Upper Rib (RUR)	Y	G's	19.7	68	62.1	37	9.4	57	81.5	42
Lower Rib (RLR)	Y	G's	13.2	67	57.6	37	15.2	69	69.2	41
Lower Rib (RLR)	Y	G's	13.5	67	58.8	37	15.6	68	70.0	41
Lower Spine (T ₁₂)	Y	G's	10.8	94	61.3	33	25.5	64	63.2	44
Lower Spine (T ₁₂)	Y	G's	10.6	95	60.2	34	25.0	64	64.3	43
Pelvis (PEV)	Y	G's	10.5	99	66.1	30	8.6	79	67.6	35
Pelvis (PEV) (R)	Y	G's	11.2	98	66.8	30	9.1	74	68.4	35

THORACIC TRAUMA INDEX (TTI) AND PELVIC ACCELERATION (FIR 100 Filtered)

Location	Right Front Passenger				Right Rear Passenger			
	RUR	T ₁₂	TTI(q)	PEV(q)	RUR	T ₁₂	TTI(q)	PEV(q)
Rib, Spine, and Pelvis	62.7	61.3	62	66.1	79.2	63.2	71	67.6
Rib, Spine, and Pelvis (R)	62.1	60.2	61	66.8	81.5	64.3	73	68.4

HEAD CG PEAK ACCELERATIONS (SAE CLASS 1000 Filtered)

Location	Axis	Units	Right Front Passenger				Right Rear Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	44.9	56	33.5	55	4.7	44	12.4	69
Head CG	Y	G's	25.6	56	84.9	55	11.8	45	113.6	54
Head CG	Z	G's	100.9	55	5.2	25	20.3	42	69.5	58
Head CG		G's	134.5	55			114.4	54		

HEAD INJURY CRITERIA (SAE CLASS 1000 Filtered)

Location	Right Front Passenger				Right Rear Passenger			
	HIC	T ¹	T ²	Avg G's	HIC	T ¹	T ²	Avg
Head CG	172	42.8	78.8	29.6	727	50.6	60.9	87.0

Positive Acceleration Polarities:
(Conforms to SAE J211)

Longitudinal (X) = Forward
Lateral (Y) = Right
Vertical (Z) = Down

