



Ford Inova Fairfax Hospital
CIREN Team

A Case Study in Offset Frontal Collision

Vehicle #1: 1998 Chevy Lumina 4door

Vehicle #2: 1999 Honda Civic 2door



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Vehicle #1: Driver, Male
Safety Systems: AB only

Injuries: C₆ lamina fracture
left elbow laceration
right eyebrow laceration
left forehead abrasion



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Vehicle #2: Driver, Male
Safety Systems: AB only

Injuries:

left ulna fracture w/ radial head dislocation
left patella fracture with PCL disruption
left hip dislocation
left thigh laceration
left forearm laceration
left cheek, hand, abdomen, & lower leg abrasions
left shoulder contusion
right knee joint laceration w/PCL rupture



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Vehicle #1: (Lumina)

Weight: 3,330 lbs.
PDOF: 345
? V: 23.3
CDC: 11FYEW2
Max Crush: 46cm @ C6



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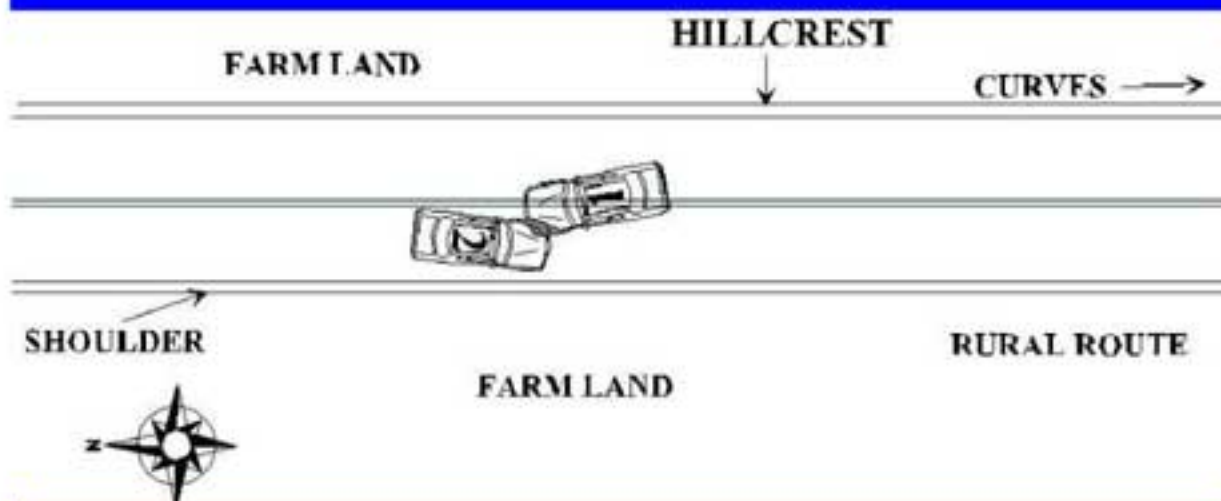
Vehicle #2: (Civic)

Weight: 2513 lbs.
PDOF: 25
? V: 30.9
CDC: 01FYEW4
Max Crush: 119cm @ C1



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SCENE



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Vehicle Dynamics



Ford Ford Inova Fairfax Hospital CIREN Center

Vehicle #1



Ford Inova Fairfax Hospital CIREN Center

Vehicle #2



Ford Inova Fairfax Hospital CIREN Center

Vehicle #2



Ford Inova Fairfax Hospital CIREN Center

Vehicle #2



Ford Inova Fairfax Hospital CIREN Center

Vehicle #1



Ford Inova Fairfax Hospital CIREN Center

Vehicle #1



Ford Inova Fairfax Hospital CIREN Center

Vehicle #1



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Vehicle #1



Ford Inova Fairfax Hospital CIREN Center

Vehicle #1



Ford Inova Fairfax Hospital CIREN Center

Vehicle #1



Ford Inova Fairfax Hospital CIREN Center

Vehicle #2 Approach



Ford Inova Fairfax Hospital CIREN Center

Vehicle #2 Approach



Ford Inova Fairfax Hospital CIREN Center

Vehicle #2 Approach



Ford Inova Fairfax Hospital CIREN Center

Vehicle #1



Ford Inova Fairfax Hospital CIREN Center

Vehicle #2



Ford Inova Fairfax Hospital CIREN Center

Vehicle #2



Ford Inova Fairfax Hospital CIREN Center

Vehicle #2



Ford Inova Fairfax Hospital CIREN Center

Vehicle #2



Ford Inova Fairfax Hospital CIREN Center

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Vehicle #2



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Vehicle #2



Ford Inova Fairfax Hospital CIREN Center

Vehicle #2



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Vehicle #2



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Vehicle 1 Occupant

Age: 50
 Gender: Male
 Position: Driver
 Restraint: Unbelted

Airbag front: Driver Side/Deployed

Clothing: Jeans/shirt/light jacket/heavy boots

Eyewear: Eyeglasses



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Vehicle 1 Occupant

Injuries (ICD)	AIS Severity	Info Source	Aspect (R/L, distal, etc)	Contact Area (door, seat, etc)	Mechanism (direct, etc)	Confid. Level	Rank
Loss of consciousness (850.1)	160202.2	Report	Whole	Roof-header	Direct	Probable	2
C-6 lamina fracture (805.06)	650224.3	CT	Posterior	Roof-header	Indirect	Probable	1
Forehead abrasion (873.42)	290202.1	Exam	Left	Roof-header	Direct	Probable	3
Elbow laceration (881.01)	790602.1	Exam	Left	Door panel	Direct	Possible	4
Eyebrow laceration (870.0)	290600.1	Exam	Right	Eyeglasses	Direct	Probable	5



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Vehicle 2 Occupant

Age: 48
 Gender: Male
 Position: Driver
 Restraint: Unbelted

Airbag front: Driver Side/Deployed

Clothing: Jeans/sweatshirt/light jacket/baseball hat
 low top sneakers

Eyewear: Contacts



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Vehicle 2 Occupant

Injuries (ICD)	AIS-90 Severity	Info Source	Aspect	Contact Area	Mechanism	Confid. Level	Rank
LOC in field (850.1)	160202.2	Report	N/A	Unknown	Unknown	Unknown	6
Cheek abrasion (910.0)	290202.1	Exam	Left	Door frame	Direct	Possible	8
Shoulder contusion (923.00)	751010.1	Exam	Left	Door frame	Direct	Possible	10
Ulna fracture (813.08)	753204.3	x-ray	Left	Door	Direct	Probable	2
Radial Head Dislocation (813.08)	750630.1	x-ray	Left	Door	Direct	Probable	2
Femoral laceration - 1 cm (881.0)	790602.1	Exam	Left	Door frame	Direct	Probable	7
Hand abrasion (914.0)	790202.1	Exam	Left	Roof	Direct	Probable	11
Abdominal abrasion (911.0)	590202.1	Exam	Left	Door frame	Direct	Probable	12
Hip Dislocation (835.0)	852600.2	x-ray	Left	Knee bolster	Indirect	Certain	1
Thigh laceration (899.0)	890602.1	Exam	Left	Door frame	Direct	Possible	9
Patella fracture (822.0)	852400.2	x-ray	Left	Knee bolster	Indirect	Certain	4
PCL disruption (844.2)	840404.2	MRI	Bilateral	Knee bolster	Direct	Certain	3
Open knee joint laceration - (891.1)	850818.2	Exam	Right	Knee bolster	Direct	Certain	8
Leg abrasion (916.0)	890202.1	Exam	Left	Knee bolster	Direct	Probable	13



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