

Worksheet

Unit 1 – post collision speeds:

Distance on asphalt = 107 ft **Drag Factor on asphalt** = 0.717 **Percent braking** = 70% or 0.70

Sa (Post collision speed on asphalt) = 39.94 mph

Distance on grass = 46 ft **Drag Factor on grass** = 0.45

Sg (Post collision speed on grass) = 18.94 mph

Post collision speed on both surfaces (also S3 below) = 43 mph

W1 (weight of Unit 1) = 2940 lbs **S1** (approach speed of Unit 1) = 9.08 mph

W2 (weight of Unit 2) = 3000 lbs **S2** (approach speed of Unit 2) = 84.67 mph

A1 (approach angle of Unit 1) = 0° **S3** (post-collision speed of Unit 1) = 43 mph

A2 (approach angle of Unit 2) = 90° **S4** (post-collision speed of Unit 2) = **43 mph**

A3 (post-collision angle of Unit 1) = 264°

A4 (post-collision angle of Unit 2) = 264°

Reported approach speed of Unit 2 was 55 mph, according to driver testimony.

Forces Impacting People

Driver, Unit 1 weighed 205 lbs. Impact velocity = 63 ft per sec. Distance = 0.2 ft.

Force exerted on 205 lb Driver of Unit 1 at time of impact = 63,171 lbs

Force exerted on 200 lb front passenger, Unit 1 at impact = 61,630 lbs

Force exerted on 110 lb back seat passenger, Unit 1 at impact = 33,896 lbs

Force exerted on 180 lb Driver of Unit 2 at impact = 7,395 lbs

Force exerted on 150 lb front passenger, Unit 2 at impact = 6,163 lbs

Force that would have been exerted on YOU had you been in Unit 2 = _____

Falls of more than 20 feet are potentially fatal.

A fall of how many feet equals the force on the Driver of Unit 1? From 80-90 ft.

A fall of how many feet equals the force on the Driver of Unit 2? From 5-10 ft.