

SAFETY IN MEDIUM SPEED VEHICLES

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This new class of Medium Speed Vehicles will be safer than Neighborhood Electric Vehicles.

MSVs will have three point safety belts, roll bar, safety cage or unibody construction. The braking systems will be on all four wheels plus regenerative braking. MSVs have frontal crash protection with batteries and or the motor and drive train systems in the front unlike golf cars which are rear wheel drives and the batteries are under the seat.

How will the ten mile per hour difference affect MSVs?

For a driver or passenger the affects in a frontal crash would be nominal. The table below shows the affects for a typical 3300 lb sedan. An MSV at 1200 lbs would produce a smaller impact force.

Weight of Driver	Speed of Typical Sedan	Stopping Distance	Impact Force
160 lbs	25 mph	1.0 feet	1.7 tons
160 lbs.	35 mph	1.5 feet	2.2 tons

Is the car as safe as a typical sedan?

The table below shows the difference in impact force of a Toyota Camry and a typical MSV. At 25 mph a Toyota Camry (3300 pounds) in a frontal collision produces the impact force of 34.5 tons, while a MSV weighing 1200 pounds produces 36% of that force or 12.5 tons. If you increase the speed to 35 mph the MSVs impact force increases 3.9 tons while the Camry's force increases 12.6 tons. The additional force can cause more damage to property and people. MSVs are lighter and safer than larger cars . A typical sedan would require almost three times the force to stop compared to an MSV.

Vehicle Weight	Vehicle Speed	Stopping Distance after impact	Impact Force
3300 lbs (Toyota Camry)	25	1.0 feet	34.5 tons
1200 lbs MSV	25	1.0 feet	2.5 tons
3300 lbs (Toyota Camry)	35	1.5 feet	47.1 tons
1200 lbs MSV	35	1.5 feet	16.4 tons

A smaller car has less mass and can stop faster. A typical 'small auto' today weighs 2400 lbs. (Hyundai Accent) A MSV at 1200 pounds not shown on this table would stop even faster.

Miles Per Hour	Distance to stop in feet Small Auto	Distance to stop in feet Mid-Size Auto	Distance to stop in feet Large Auto	Distance to stop in feet Van or Pick Up
10	16	17	17	19
20	42	44	47	55
30	78	83	89	108



Above is the Micro Car crash tested in France.

References:

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