FOR YOU TO READ

Three Collisions in One Accident!

Arthur C. Damask analyzes automobile accidents and deaths for insurance companies and police reports. This is how Professor Damask describes an accident:

Consider the occupants of a conveyance moving at some speed. If the conveyance strikes an object, it will rapidly decelerate to some lower speed or stop entirely; this is called the first collision. But the occupants have been moving at the same speed, and will continue to do so until they are stopped by striking the interior parts of the car (if not ejected); this is the second collision. The brain and body organs have also been moving at the same speed and will continue to do so until they are stopped by colliding with the shell of the body, i.e., the interior of the skull, the thoracic cavity, and the abdominal wall. This is called the third collision.

Newton’s First Law of Motion explains the three collisions:

- First collision: the car strikes the pole; the pole exerts the force that brings the car to rest.
- Second collision: when the car stops, the body keeps moving; the structure of the car exerts the force that brings the body to rest.
- Third collision: the body stops, but the heart and brain keep moving; the body wall exerts the force that brings the heart and brain to rest.

Even with all the safety features in our automobiles, some deaths cannot be prevented. In one accident, only a single car was involved, with only the driver inside. The car failed to follow the road around a turn, and it struck a telephone pole. The seat belt and the air bag prevented any serious injuries apart from a few bruises, but the driver died. An autopsy showed that the driver’s aorta had burst, at the point where it leaves the heart.