Rear-end collisions predominantly occur in the daytime under clear, unobstructed viewing conditions and usually involve a lead vehicle that is stopped at the time of collision. These facts suggest that driver inattention plays a significant causal role in rear-end collisions, and mitigation efforts have therefore focused largely on development of warning technologies to alert drivers of an impending crash. However, we note that this pattern of crash data should not lead to the conclusion that drivers have special difficulty avoiding rear-end collisions in broad daylight. Nor should it be concluded that other “environmental” factors do not influence driving behavior to increase rear-end crash risk. Crash frequency is determined both by the inherent risk in the driving task and by the frequency of driver exposure to conditions in which a crash is possible. When exposure level is equated across conditions which differ in ambient light level, we find that rear-end collisions appear to be more than twice as likely in darkness as in daylight, and are more influenced by light level than are either side-impact collisions or front-end collisions. An examination of vehicle type and role in rear-end crashes revealed that the incidence of fatal rear-end crashes involving a struck truck is nearly 9 times more likely in darkness than in light, suggesting that trucks are particularly difficult to see at night.