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How physics serves to explain an all-too-real real-world event SAAMI SHAIBANI, Instruction Methods, Academics Advanced Scholarship (IMAAS) — "A vehicle is traveling at 27 m/s when it suffers a complete loss of power to all mechanical and electrical systems. This causes a severe reduction in the efficiency of the brakes and steering, which is exacerbated by no illumination of brake lights or turn signals. These factors constrain the overall mean coefficient of friction to be less than 0.2 for safe operation of the vehicle. If the driver is able to steer the vehicle onto an exit ramp [of length 250 meters and downward slope 6 degrees] and then join a minor road with upward slope of 4 degrees, can he reach the (relative) sanctuary of a traffic light that is 80 meters from the end of the exit ramp?" The preceding question reflects an actual scenario experienced by this author, and it provides an excellent opportunity for student learning that goes well beyond the somewhat simplistic exercises typically encountered in standard textbooks. Concepts in this paper expand the library of other examples from the real world[1-3], all of which enhance the value of physics to students as they benefit from meaningful applications beyond the classroom. [1] http://meetings.aps.org/link/BAPS.2010.APR.Z11.7; [2] http://www.aapt.org/AbstractSearch/FullAbstract.cfm?KeyID=17763; [3] http://meetings.aps.org/link/BAPS.2012.APR.J15.8

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