

Arresting model stops cars

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Researchers in China have developed a mathematical model that could help engineers design a flexible vehicle-arrest system for stopping cars involved in criminal activity or terrorism, such as suspect car bombers attempting break through a check point, without wrecking the car or killing the occupants.

Writing in a forthcoming issue of the *International Journal of Vehicle Design*, Pak Kin Wong and colleagues in the Department of Electromechanical Engineering at the University of Macau, in Taipa, Macao, explain how common vehicle-arrest systems used by law enforcement, the military and in anti-terrorism activities, usually cause serious damage to the vehicle and maim or kill the occupants. A more positive system for bringing a car chase to a halt or stopping a car-bomber in their tracks is needed if perpetrators, witnesses and evidence are to be protected.

A [flexible system](#) would increase the stopping distance of a vehicle involved in criminal or terrorist activity and allow its [kinetic energy](#) to be dissipated without the complete destruction of the vehicle as otherwise occurs with solid, immovable barriers and equipment currently used. The team's [mathematical model](#) of vehicle arrest with different [flexible materials](#) and designs bears up to theoretical and experimental scrutiny and offers engineers a new set of variables to embed in their design program in the development of new, effect vehicle arrest systems. Moreover, the system could allow the design of an "intelligent" vehicle-arrest system for roadblocks and checkpoints that could respond differently depending on [vehicle speed](#) and type and allow for greater

control in bringing a vehicle to a stop.

More information: "Modelling and testing of arresting process in flexible vehicle arresting systems" in Int. J. Vehicle Design, 2013, 64, 1-25

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