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Design and production of a test dummy for measuring blast effects on occupants in armored vehicles

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Improvised explosive devices (IED'S) are a serious threat to the occupants (Troops) of armored vehicles, High acceleration pulses and impact forces are transmitted to the occupant through vehicle-occupant contact interfaces, such as floor and seat, posing the risk of moderate injury to fatality.

There were two parallel concepts to minimize the risk on occupants the first one is the material and shape (V-Shaped) of the vehicle itself from the outside. The second one is the mechanism inside the vehicle which protect the human body after the explosion have performed, This paper presents the design process of a human test dummy for measuring blast effects on armored vehicles occupants. This is followed by a thorough description of the development and production of the physical dummy. We start by reviewing the effects of IEDs on troops inside armored vehicles subjected to the explosion of IEDs.then Perform simulations with using software (solidworks) and (Lapview) .and testing of the the dummy. With dummy can perform comparison with experimental data after numerical simulation, drop test, or blast testing were run.