



# **Study and Experimentation of Composite Armor Against Small Arm Threats**

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# [ Agenda ]

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- Problem
- Background
- Threats
- Types
- Solutions

# [ Problem ]

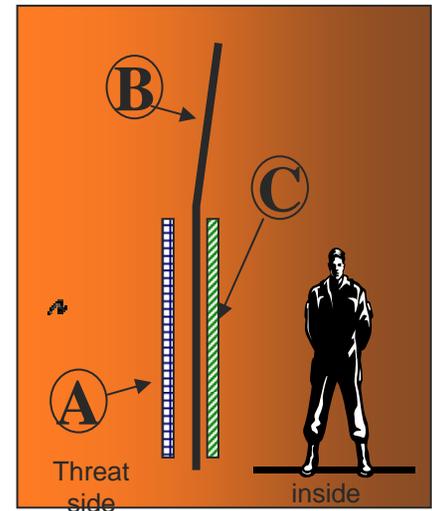
- The U.S. Army tactical vehicles did not have sufficient protection for the threat spectrum facing them in Iraq and Afghanistan.
- Chassis, power plants, and suspension for most tactical vehicles not capable of supporting steel on steel solution
- Limited budget and time considerations.



M998 HMMWV

# [ Composite Armor ]

- Composites are materials that are combined together to either give or enhance properties not available to the individual material alone.
- Composite armor is the combination of multiple material types to ideally achieve a light weight highly survivable solution.



# [Threats]

- Small Arms
- RPG
- IED



# [ Solutions ]

- Steel



- Ceramics



- Composites



# [ Recommendations ]

Composite armors have a number of problems. They are expensive and currently not a major part of our armor solution plan. However, with increased production and more material research, composite armor will become an indispensable component of force protection.



[ Questions? ]

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# [ Special Thanks ]

- To ARL for all their help teaching me about armor.
- Composite Labs for the many hands on learning opportunities
- Testing ranges for showing me impressive displays and videos.