



MARINE CORPS SYSTEMS COMMAND

Combat Equipment & Support Systems (CESS)
Program Manager, Infantry Combat Equipment



Body Armor



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Current Ballistic Protection for Marines

Modular Tactical Vest (MTV)



Enhanced Side-Small Arms Protective Inserts (Enhanced S-SAPI)

E-SAPI Front/Back Plate



Scalable Plate Carrier





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Armor Protection Levels (APL) Based on Mission and Threat

APL Level	Armor Worn	Threat / Capability	Mobility	Approx. Weight (lbs)*
0	MTV/OTV Only	Indirect Fire (IF) Torso only	Excellent	9.5
I	Adds Front/Back E-SAPI Plates	Limited Direct Fire (DF) Torso	Good	20
II	Adds Enhanced Side-SAPI Plates	Full Torso DF Coverage	Fair	27
III	Adds Upper Arm/Leg Protection	Adds IF to Upper Arms/Legs	Limited	33
IV	Adds Lower Arm/Leg Protection	Adds IF to Entire Arms/Legs	Poor	37

* Weights are for body armor only (not including helmet) for a Medium sized Marine. Body armor weight increases with size.



Future (Near Term)

- **Plate Carrier (limited improvements- Government design)**
- **Improved MTV (limited improvements- Government design)**
- **Concealable Armor**
- **Event analysis to develop better personal protective equipment**
 - Incident data + Injury data + PE analysis
- **Non-destructive testing**
- **Flame Resistant materials**
- **R&D Focused Challenges**
 - Lightening the Load
 - Increasing level of protection and area of coverage while reducing (or at least maintaining) weight
 - Lighter, stronger, more flexible body armor
 - Improved load distribution



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Future (Longer Term)

- Next generation tactical vest
- Potential for Plate Carrier complementing vests
- R&D Focused Challenges
 - Lightening the Load
 - Increasing level of protection and area of coverage while reducing (or at least maintaining) weight
 - Lighter, stronger, more flexible body armor
 - Improved load distribution
 - Seeking complex technical solutions that require very little user training
 - Passive cooling system/ technology



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Questions?