



U.S. ARMY TANK AUTOMOTIVE RESEARCH, DEVELOPMENT AND ENGINEERING CENTER

Soldier Seat Accommodation Comfort Technology Club

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Limited Military seat design standards are available.



NOTE:

1. SRP = Seat Reference Point.





FIGURE 42. Measurements for clearances around equipment.

 2012 Collected Anthropometric Measurements of 257 male and 53 female Soldiers at 3 Army bases.



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X

Seated Soldier Study



Driver (Crew)



Passenger (Troop/Squad)











Tools to measure and define Soldier position





SAE J-826 H-Point Manikin



ISO 5353 Seat Index Point Tool (SIPT) with Back Angle Device

Reference: Evaluation of the Seat Index Point Tool for Military Seats by Reed, M.P. and Ebert, S.M. 2014

Using tools to define Soldier position





Human Accommodation Reference Point (HARP): A reference point for prediction of human posture and position with respect to the seat that defines the seat location for analysis of occupant accommodation. The HARP shall be defined and measured using either the SAE J826 H-point manikin associated procedures or the ISO 5353 Seat Index Point (SIP) device and the associated procedures presented in UMTRI-2014-33. The manikin that is used shall be identified in any reporting. [MIL-STD-1472 Appendix A (in process)]

Seat size and Gear affects the Seated Soldier





Full SAW Gunner



TARD

=0





5th Female ATD















An example of a Modular Blast Mitigating Seat

- Generically, the seat cushion needs to adjust in length without power input.
- Generically, the seat back, headrest, and shoulder restraints need to adjust in height without power input.
- Generically, the headrest needs to adjust forward of the seat back, as the Soldier dons various levels of gear encumbrance, without power input.



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Wrap Up



Suggestions ?

Questions ?

Discussion ?