

DoD Ergonomics Working Group NEWS



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Sierra Army Depot Palletized Loading System Ergonomic Safety Improvement Part 2: The Ladder

Identifying the Problem

The Sierra Army Depot Safety Office teamed up with members of the 423rd Transportation Company to mitigate hazardous operations on the palletized loading system (PLS). The PLS power steering pump, engine cooling fan, air compressor, hydraulic pump, and air dryer must be checked and serviced on the back side of the engine compartment. Maintenance personnel didn't have a safe way to climb up to the service platform, to service these components. The method used prior to the safety modification had the potential to seriously injure anyone trying to climb up on the PLS.



A 423rd team member demonstrates the old method of climbing up on PLS to conduct service checks. Note the pressure on shins from contact with angled platform, the right foot on the crossover valve mount, and no handle grabs.

Brainstorming a Solution

To access the service platform, maintenance personnel had to step on the fuel system crossover valve. This is a dicey process because the valve is not designed to be climbed on. The employee's foot could slide off this small, no step area, causing a fall. Mechanics would also sometimes kick the fuel bowl when climbing up which, if broken, could cause an environmental spill of up to 75 gallons of fuel. After conducting a job hazard analysis (JHA), the teams mitigated the hazard by designing a simple but effective ergonomic ladder modification.

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A Low-Cost Modification



After conducting the JHA, the teams came up with a low-cost (less than \$10 for material) engineering control. A simple, but effective ladder modification was the answer to mitigate the hazard. The teams designed and added two more hooks and drilled two holes so the existing ladder could be used in another area.



A 423rd soldier demonstrates the existing PLS ladder that was modified to access the rear service platform. This new modification will help prevent climbing, falling, and ergonomic injuries on the PLS.



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