



Zero Footprint Camp: MRE Ration Reconfiguration

Environmental Quality Technology Pollution Prevention Program

Purpose: Support an agile force by reducing the amount of packaging material transported to, and the amount of solid waste generated by, contingency bases.

Requirement: The Army requires the capability to deliberately pre-plan waste (e.g., solid waste, wastewater and air emissions) management for contingency operations. Traditional, resource-intensive solid waste management methods create a substantial burden on contingency bases while adding no value. The most effective way to reduce waste is at the source, rather than through reuse, recycling or conversion. Zero Footprint Camp is integrated with the Sustainability/Logistics–Basing Science & Technology Objective–Demonstration (SLB-STO-D) program, which is seeking to reduce contingency base solid waste requirements by 50% through a combination of technical approaches. The reconfiguration of packaging for Meals Ready to Eat (MREs) is a key component of the SLB-STO-D solid waste reduction technology portfolio.



Current MRE packaging: note bulging meal bag and over-packed case

Technical Approach:

- Design and reconfigure a new MRE ration package with 20% less material by building upon prior leveraged research into alternative fiberboard and meal bag technologies
- Down select candidate materials based on insect infestation, durability, producibility and cost
- Work with the Environmental Protection Agency to determine toxicity of current and prototype combustion products
- Evaluate prototypes utilizing a full range of industry and government standard material/package tests
- Implement results through revisions to military specification after approval through DoD Combat Feeding Directorate and Joint Services Operational Ration Forum



Prototype MRE packaging: thermoformed meal bag with corrugated fiberboard case

Anticipated Benefit to the Warfighter:

- Reduce the number of truck shipments required to transport the same amount of MREs by optimizing the weight, volume and configuration of a pallet load, increasing the quantity of rations able to transported in a standard trailer by 5% (two pallets or 1,152 meals)
 - Reduce Warfighter exposure to enemy attacks on the supply chain by reducing the number of MRE supply trucks (and associated convoy security) required to sustain contingency bases
 - Enable commanders to realign manpower/assets from convoy security to other critical mission areas
 - Reduce fuel costs associated with transporting MREs throughout the supply chain
- Reduce the amount of solid waste at contingency bases that must be backhauled, stored on-site or destroyed in burn pits by reducing the weight and volume of MRE packaging waste generated by at least 20% (1,000+ lbs of waste per truck load of MREs)
 - Bases that backhaul solid waste will realize the same types of supply chain benefits described above
 - Bases that store solid waste on-site will reduce Warfighter exposure to disease-bearing pests (rodents, insects, etc.) attracted to waste piles
 - Bases that utilize burn pits will reduce Warfighter exposure to toxic fumes
- Reduce MRE packaging and associated solid waste by 3.6 million lbs/yr (assuming 40 million meals/yr procurement rate)