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UNITED STATES ARMY
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FORCE SUSTAINMENT SYSTEMS



Army Field Feeding Systems



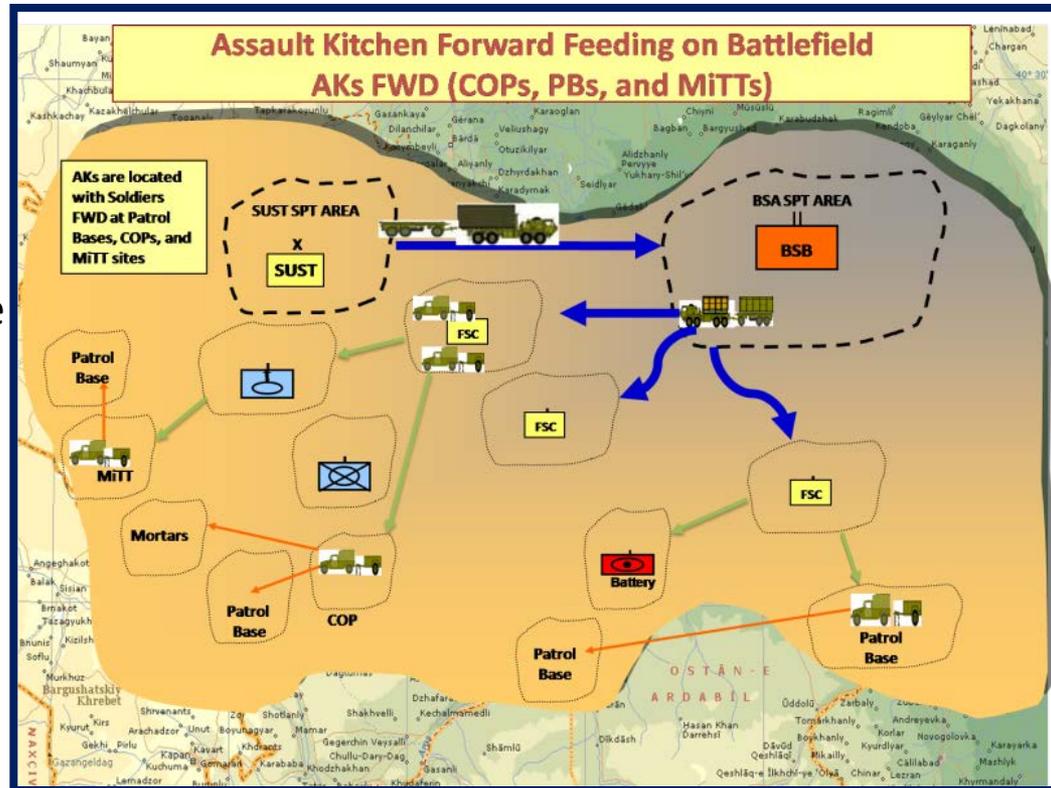
Army Field Feeding Systems Modular Force

Overarching Modular Field Feeding Requirements:

- Set up/pack up within 45 minutes
- Everything transported by unit vehicle – single pintle
 - Limited by towing weight of vehicle
 - Electricity by on board generator
 - Typically trailer mounted
 - Compact and light weight
- Man-Portable kitchen appliances
 - Splinter equipment to support smaller, remote sites

Unit owned equipment and capability

- Standard equipment with Army TM with fully provisioned spares
- 92Gs fully trained on operation (POI) and operational maintenance



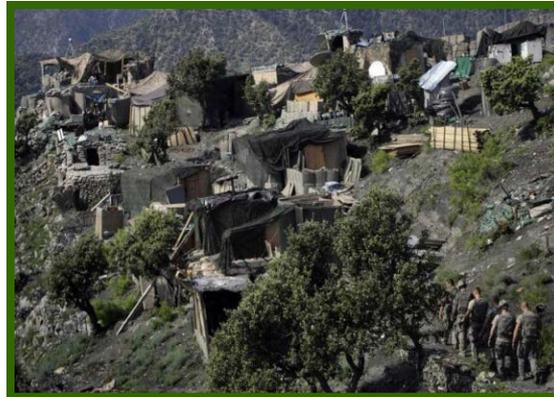
Contingency Basing Feeding GAP

800 plus base camps in Afghanistan and Iraq, many are EBCs.

- 700 of these are Ad Hoc in nature
- Approximately 120 Platoon size EBCs in Afghanistan.
- No standardized doctrine or feeding equipment.

Maneuver Support Center of Excellence (MS-CoE)

- Proponent writing Initial Capability Document (ICD) for Base Camp.
- Function Solution Analysis has indentified a field feeding gap #170.



The future force lacks the ability to provide nutrition support for all sizes of base camps. There is a gap in synchronizing organic tactical field feeding/nutrition tasks either within tenant sharing of chores, or within the transition between tactical field feeding to base camp –managed field feeding.

Village Stability Operations (VSO)

THE U.S. ARMY SPECIAL FORCES COMBAT FEEDING MISSIONS

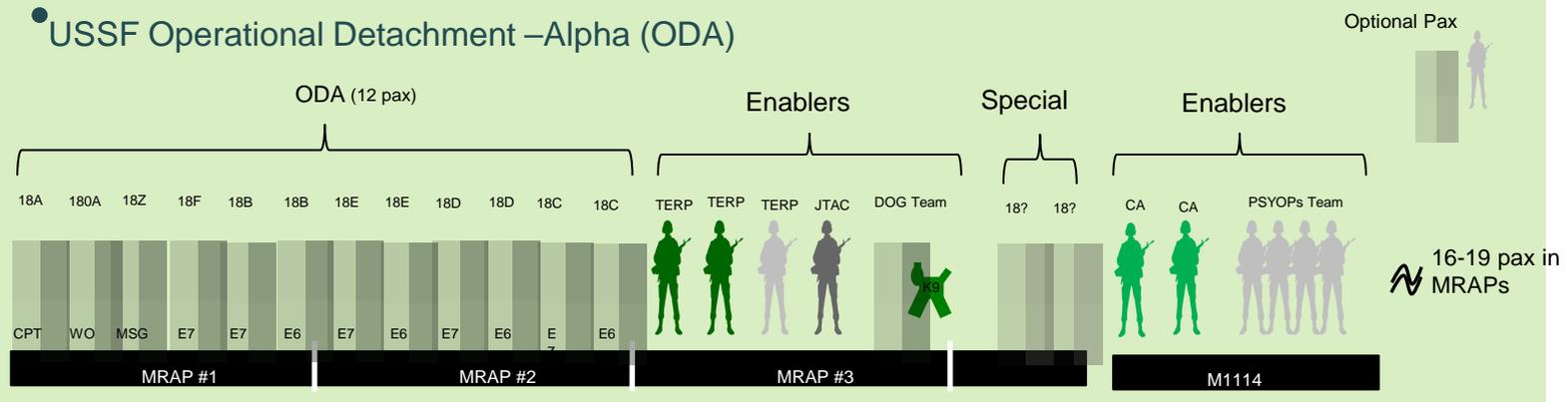
SUPPORT A Team

(1xCook, 1x Mech, 2xMultifunctional Logisticians)

- Sustain the Operational Detachment Alpha (ODA) FWD Multifunctional Team Concept
- Conduct LOGSTAT Reporting
- Synchronize Sustainment Operations
- Conduct Partnership Sustainment
- Coordinate Sustainment Operations
- Base Mayor
- Enhance ODA Systems
- ASG Oversight, FOO/Pay Agent
- Reachback Capability to SUP B/ SST / SVC DET/ JLOC



USSF Operational Detachment –Alpha (ODA)



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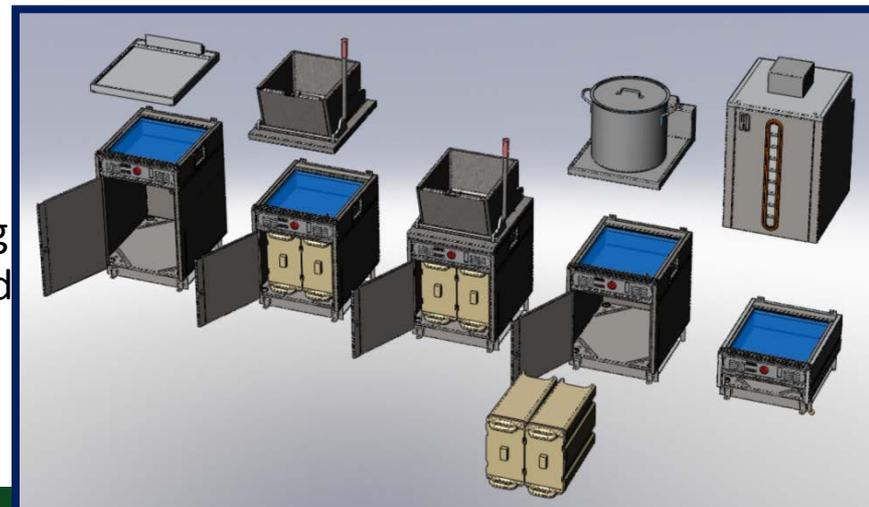
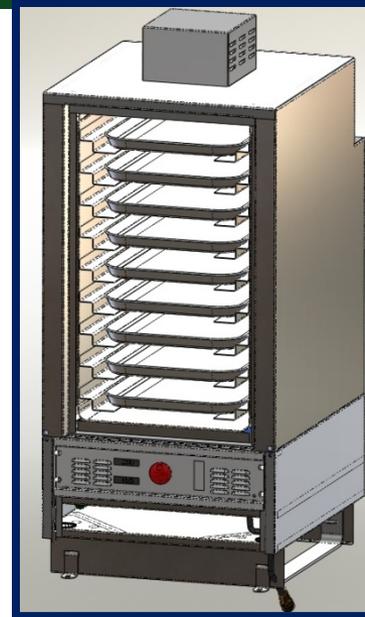
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Current Improvement Projects

Project Title(s)
Modular Appliances for Field Feeding
Containerized Kitchen (CK) Modernization
Mobile Kitchen Trailer (MKT) RESET Program
Integrated Thermal Control Unit (ITCU)
Assault Kitchen Enhancement (UGR-A™ Capability)
Containerized Ice Making System (CIMS)
Solid Waste Remediation (SWR)

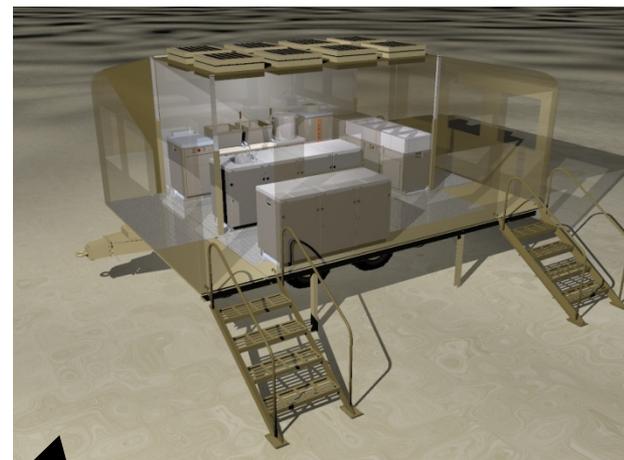
Army's Modular Appliance Concept - bridge gap between Modular, Base Camp Force & VSO

- Fuel fired appliances operating on JP-8.
- Thermostatically controlled, closed combustion, extremely efficient and man portable
- Selected appliances for use at the platoon level
 - prepare Unitized Group Ration (UGR)
 - Optimized refrigeration and sanitation equipment
- Additional appliances will be added to make a suite to meet the requirements at the company level.
- From there, more appliances will be added into a suite and incorporated into a trailer, container or other mobile platform to feed at the 300 – 400 range, and another suite for the 700 – 800 range.
- **Same modular appliances to support both maneuver units and units operating from base camps up to and including battalion size.**
- Tailorable, modular approach focuses on standardizing appliance dimensions and interfaces for fuel, power and air connections to make them truly plug and play.
 - For example, you can remove an oven appliance and insert a griddle or skillet etc.



Modular Appliance Concept

Modular, closed combustion, thermostatically controlled, man portable appliances efficiently support 50 – 250 soldiers (FOBs, COPs, etc.)



Same modular appliances integrated into mobile kitchen platform/containers to support large groups, i.e., BK supports up to 300 and CK up to 800



Ease of Use and Manportability

Current fuel fired



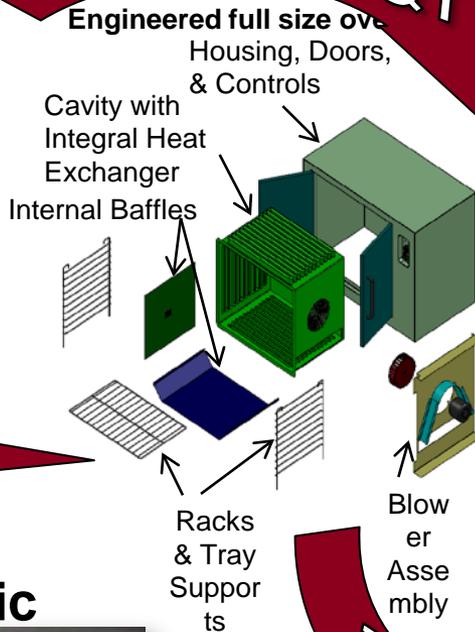
Open flame, food cooked in combustion affluent, dirty, inefficient and hard to use but is man portable

Current all Electric



Thermostatically controlled, closed combustion, easy to use! hardwired, heavy and inefficient on stand alone generators

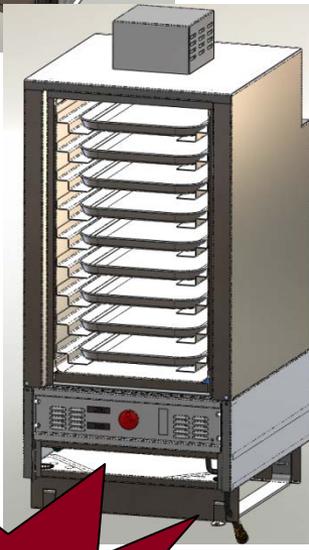
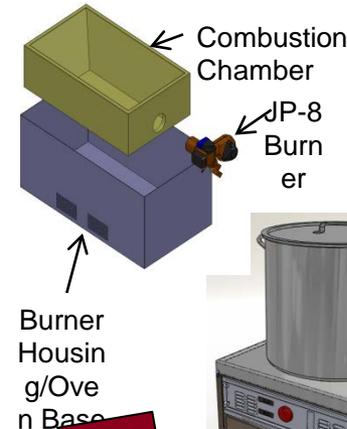
Ongoing S&T



Tech Transition

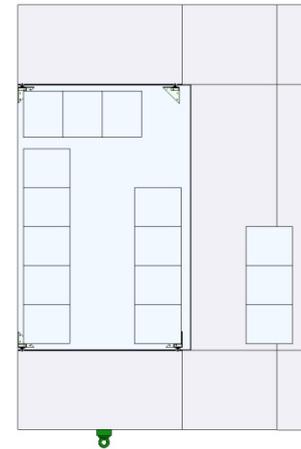
New Fuel Fired

No Sole Source Allows for Contractor Logistic Support



Thermostatically controlled, closed combustion, modular, man portable, efficient and easy to use!

Future Kitchen Concept



CK - 2 Improvements - Need

- **The Containerized Kitchen gets extremely hot and causes heat stress in kitchen workers**
 - Open flame combustion releases most of heat into kitchen.
 - The temperature can approach 150°F in the work environment.
 - Ventilation hood does not capture enough air
 - Air conditioners can't keep up with the heat as they struggle with the humidity

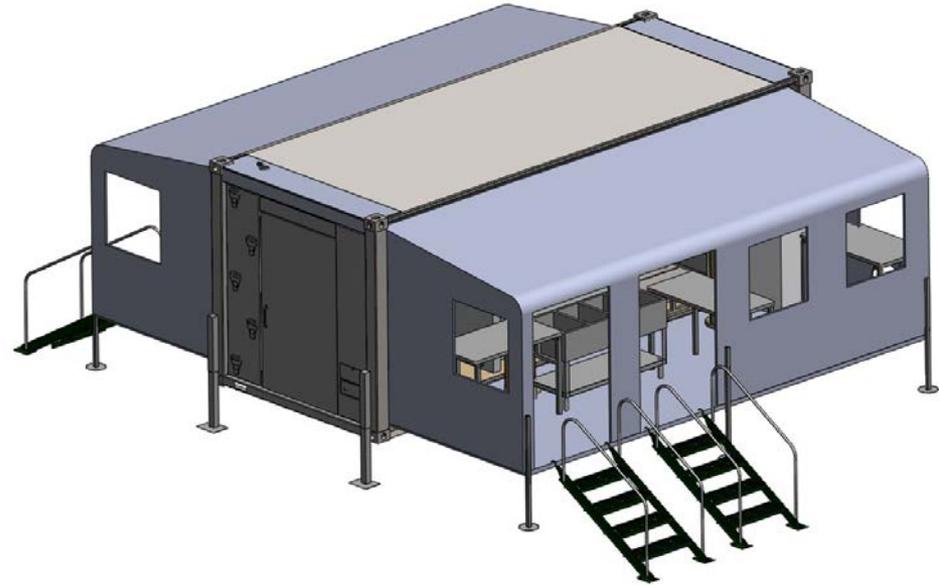


• **To reduce cost and complexity of field feeding, the CK and future kitchens all to have same modular appliances.**

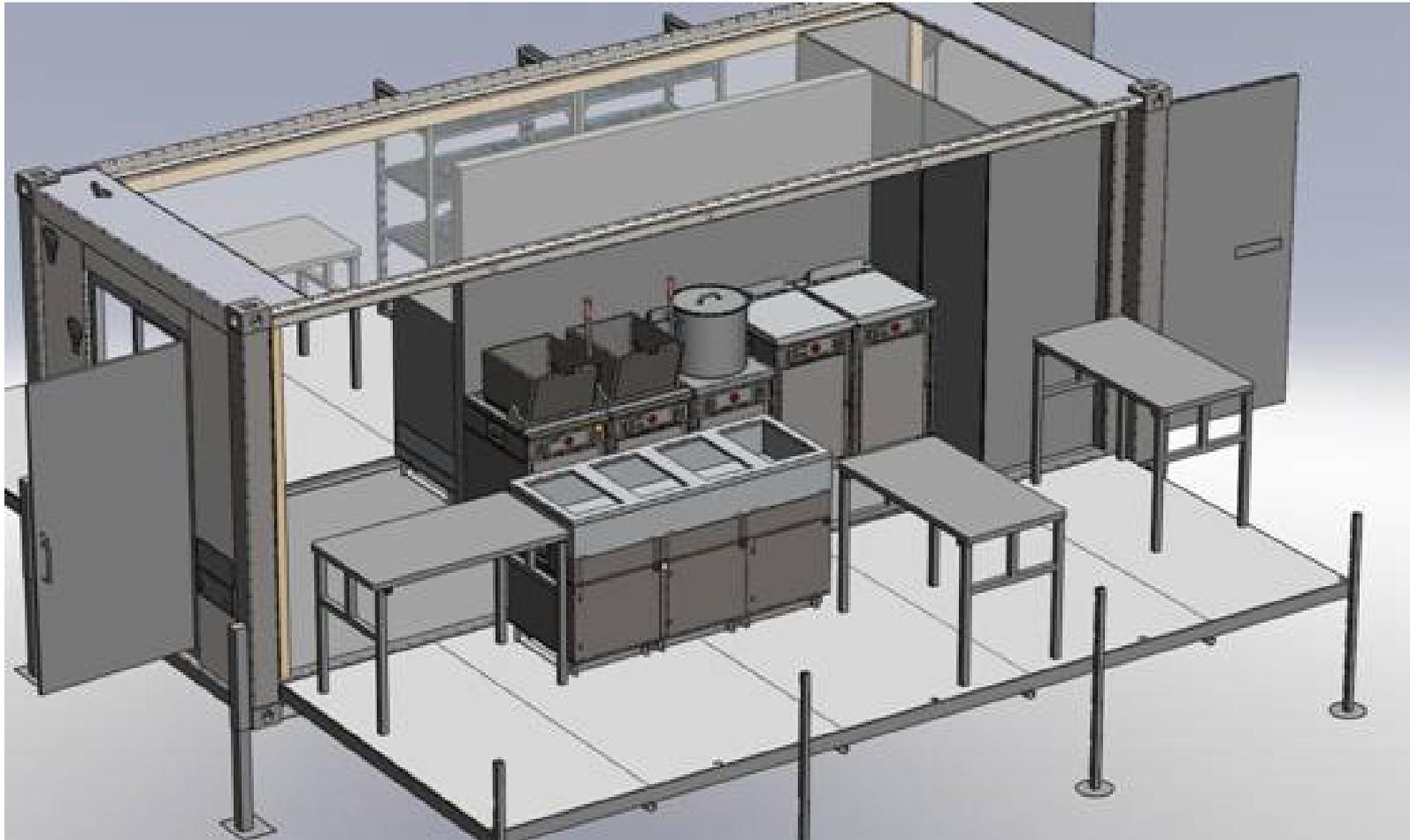
• **The CK could better utilize its available space by including sanitation within the CK container.**

CK2 Improvements

- Modify Mechanical Room
 - Remove A/C
 - Increase fan capacity
 - Install ECU ducts
- Install double sided vent hood
 - Cook side/Sanitation side
- Design and fabricate modular appliance and sanitation system
- Single upright refrigerator



CK2 - Initial Layout



MKT – Improvement to RESET -Need

- **Mobile Kitchen Trailer (MKT) will remain heavily used well into future**
 - Approximately 3500 MKTs in the field
 - Containerized Kitchen will only replace about 25 percent of MKTs
 - Future Kitchen not due for procurement until post FY20
- **Total Lifecycle Management roadmap shows MKT RESET through at least FY17**
 - Leverage RESET to assure maximum sustainability and relevance of MKT for its remaining lifecycle



Integrated Thermal Control Unit (ITCU) - Need



Temperature control with MBU



Temperature Module

- To provide thermostatic control for cooking appliances in the Army field kitchens
 - Reduce fuel consumption and increase the users satisfaction with temperature control
 - Reduction in the combustion by-products that the cooks are exposed to
 - Increase quality of food prepared by regulating temperature on cooking appliances
 - Uniform distribution of heat

Assault Kitchen Enhancement to Include UGR-A Capability - Need



Sanitation
Sinks



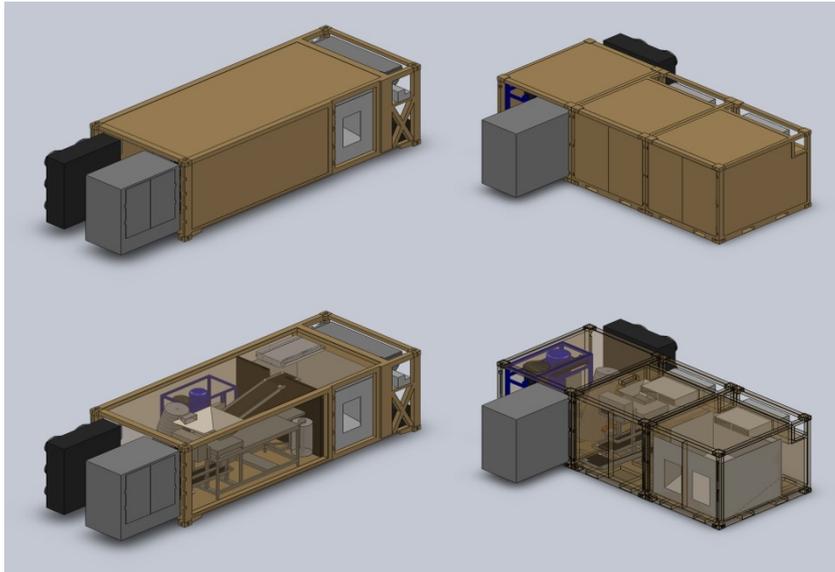
TRCS



Powered
Multi-fuel
Burner Sled

- Current AK designed to prepare UGR-H&S™ meals. With the Additional Authorized M-59, that is being provided, system can prepare limited static A-ration capability
- AK requires components to provide capability to prepare full meal spectrum (UGR-H&S™, URG-A™, 21-day CONOPS menus)
- Immediate need (LOE 1) for full meal spectrum static configuration for potential use with Combat Outpost (COP) or Tactical Small Unit (TCU)
- Capability required for sanitation, refrigeration, baking, frying, and boiling
- Other efforts will be leveraged, such as, the Modular Appliance Concept to provide optimal solution to meet LOE 2 efforts (3 – 5 years out)

Containerized Ice Making System



- To provide the soldiers with ice for their drinking water in arid environments
- To support a 600 person or larger base camp to include warfighters on patrol
 - Needs to produce between 4800 (T) lbs and 10,000 (O) lbs of ice a day (8 lbs of ice per soldier per day)
 - Max size container- 20' ISO
 - Storage bins to accommodate the ice produced
- Automated dispensing, packaging and sealing
 - Prevents personnel from handling ice
 - Reduces the potential for contamination

Solid Waste Remediation (SWR) - Need



- **FM 4-20.2 Army Field Feeding Doctrine**
 - Waste must be buried, burned, or backhauled
- **R 200-1 CENTCOM Environmental Guidance**
 - Trash disposal in open burn pits and burn boxes must shift to incinerators
- **Force Provider CPD-requires minimization of backhauling**
- **Convoys backhauling waste are subject to attack**
- **Health hazards from open burning and trash storage work against cooperation with locals**

New Equipment Fielding

Project Title(s)
Assault Kitchen (AK)
Containerized Kitchen (CK)
Food Sanitation Center (FSC)
Multi Temperature Refrigerated Container



Assault Kitchen

- Heat-on-the-move based field feeding system designed to replace the KCLFF and meet the nutritional requirements of forward deployed Warfighters
- Feeds 250 UGR-H&S meals at a feeding site within 90 of site arrival
- Feeds 500 meals a day at multiple feeding sites
- Electrical power for operation obtained from HMMWV power system
- Minimal setup time at a remote feeding site
- Components can be removed from vehicle/trailer and utilized statically as situation permits
- LTT configuration compatible with armored and unarmored vehicles
- TRH daily fuel consumption 1.4 gallons



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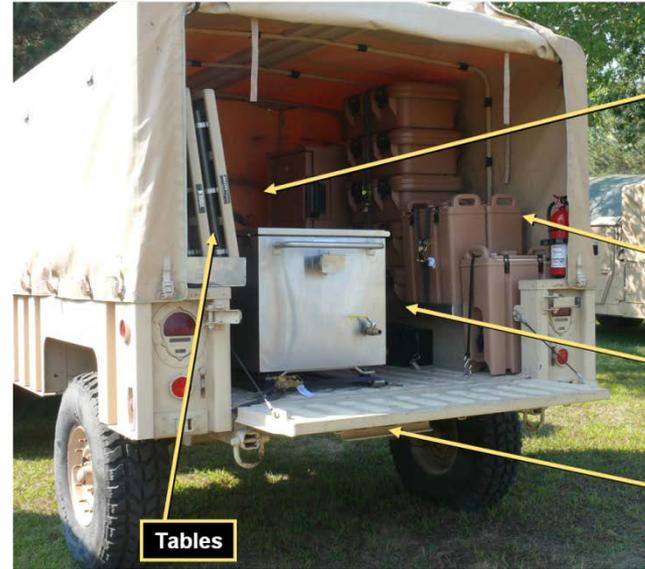
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Date: 01 Oct 08

Assault Kitchen

• Key System Components

- Tray Ration Heater*
- Power Inverter
- Maintenance Kit
- IFCs and IBCs
- Modern Burner Unit*
- Stockpot Cradle
- Ice Chest
- Water Cans
- Tool Kit
- Utensils
- Power Cable
- M-59 w/Accessories



Maintenance Kit and Power Inverter

Insulated Food & Beverage Containers

Tray Ration Heater

Light Tactical Trailer



* Long Term Contracts pending at DLA Troop Support

Assault Kitchen

- 230+ AKs fielded to date to Stryker Brigade Combat Teams, Special Forces Units and high priority FORSCOM deploying units
- Feedback from 5/2 SBCT
 - Quick set up for system
 - Can attach system to multiple vehicles including Stryker to obtain power



AK in Use at Remote Static Location by 5/2 SBCT

Mobile Kitchen Trailer (MKT) RESET

Purpose:

Expandable, self contained mobile kitchen facility used for the preparation and serving of UGRs H&S &As and line item As for 250 – 300 warfighters per meal

MKT RESET:

1400+ MKTS RESET to date @ LEAD.

Currently a float of 200 units ready to go minus COEI

Full Up MKTS w/ COEI available, case by case basis



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CONTAINERIZED KITCHEN (CK)

- **Description:**

- Replaces 2 Mobile Kitchen Trailers (MKT)
- Expandable 20' ISO Container
- Dual Axle Chassis Trailer
- Feeds Up To 800 Meals 3x Per Day
- On Board Power, Water, Ventilation And Environmental Control
- Appliances include Convection Oven and Refrigerators

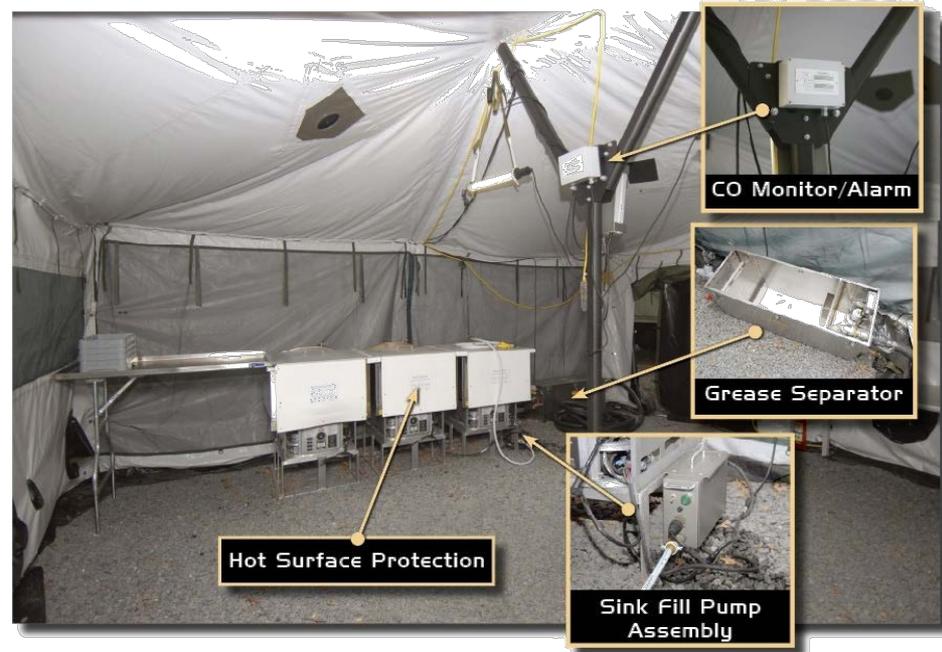


FOOD SANITATION CENTER (FSC)

- **Description:**

- Replaces unsafe Immersion Heaters
- Supports CK and MKT kitchens
- 3-step sanitation process
- Recent Upgrades:
 - Grease separator
 - Carbon Monoxide monitor
 - Sink fill pump
 - Hot surface protection
 - Safer electrical layout

- **Transported in unit vehicle**



Multi-Temperature Refrigerated Container System (MTRCS)

• Description:

- Dual-temperature refrigerated container to distribute and store mixed loads of fresh and frozen products simultaneously for BCTs and Subsistence Platoons
- 8x8x20 HEMTT-LHS compatible ISO container
- High efficiency insulation for maximum internal volume
- Moveable partition to adjust compartment volume to the load
- More efficient ration distribution
- Reduced logistics footprint

