



Field Feeding Systems Update

- **Modern Burner Unit**
- **Mobile Kitchen Trailer**
- **Food Sanitation Center**
- **Containerized Kitchen**
- **Assault Kitchen**
- **Multi Temperature Refrigerator
Containerized System**



Modern Burner Unit (MBU)



MISSION:
**Primary heat source for
Cooking Operations in All
Army Field Feeding
Equipment.**



Fuel Delivery Block Upgrade



Control panel and data plate decals will be changed to reflect updated MBU



Current NSN



Thermostatic Control (Prototype)



- ◆ Automatically cycles burner on and off to maintain set point temperature.
- ◆ Target applications: Sanitation sinks, CK oven & CK steam-table.
- ◆ Same control designs for all appliances.
- ◆ Planned fielding in 2008



MKT Reset Program



- Participants
 - SBCCOM
 - Letterkenny Army Depot
 - Penn Metal
 - ACES



MKT Reset Kit Program



- **Objective(s):**
 - Develop a kit to improve the capability of MKTs going through RESET
 - Assure the MKT remains relevant and effective as a field-feeding asset for its remaining life cycle
- **Capability Provided:**
 - Updated food preparation equipment
 - Improved power source
 - Reduced fuel consumption



MKT Reset Kit Program

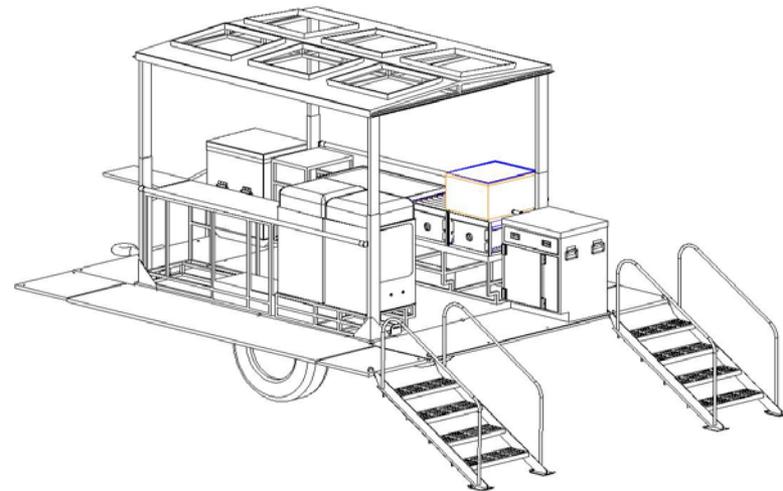
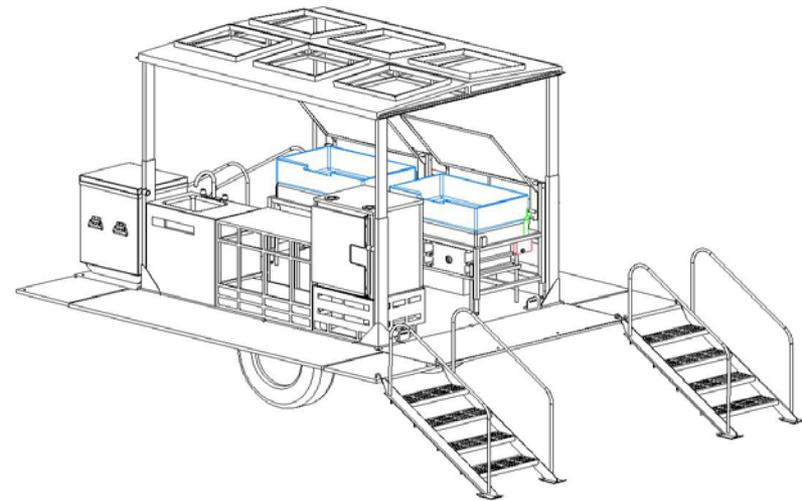
- **ROI/Benefits:**
 - Quieter, cleaner, more reliable power source
 - Improved food quality and more variety of preparation options, optimized for current operational rations
 - Faster preparation of UGR H&S rations
 - Less costly, more reliable spare parts
 - Project will leverage and efforts of 2004 program (Oven and Tray Pack Heater Tank)
- **Applications/Deliverables:**
 - Prototype kit installed on an MKT Platform
 - A modified DMWR to facilitate insertion of kit into ongoing ILSC RESET program at Letterkenney Army Depot (LEAD)



MKT Reset Kit Program

FY08 Planned Accomplishments:

- Analyze data to determine target improvement areas
 - Ration menus
 - User questionnaires
 - Previous test data for ovens, ranges, and tray-pack heater tanks (TPHT)
 - Reliability and manufacturing processes of MKT components
- Suitability testing of oven, skillet, power sources, TPHT
- Select conceptual design for prototype kit





Mobile Kitchen Trailer - Future



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What is the problem?

The current MKT is based on '60s technology with inefficient open-flame burners powered by a loud engine-driven generator

- Uncomfortable environment w/ heat stress / combustion products
- Limited water heating capability
- Low capacity appliances w/ no timers or thermostats

The MKT's 1 ½ ton trailer not compatible w/ LMTV

- Roll-overs because of tracking problems
- Over weight; Obsolete wheels

Large footprint w/ Separate Food Sanitation Center

What are the barriers to solving this problem?

Reliable technology for cogeneration / thermal fluid heat transfer

How will you overcome those barriers?

Develop reliable cogeneration / thermal fluid heat transfer technology, integrate w/ high capacity commercial appliances and sanitation, and integrate on 2 ½ ton LMTV trailer

Quantitative Metrics:

Current:

9 - 60K BTU/hour burners, 15K BTU/hour heat transfer each
 18-27 gallons of fuel/meal, up to 240 gallons water (sanitation)
 Low capacity, military unique appliances, 3 hours/meal
 2 footprints (sanitation center and kitchen)

Goal:

1 - 360K BTU/hour burner, 300K BTU/hour heat transfer
 5 gallons of fuel/meal, 60 gallons water (sanitation)
 High capacity, commercial appliances, 2 hours/meal
 1 footprint (integrate sanitation center w/ kitchen)

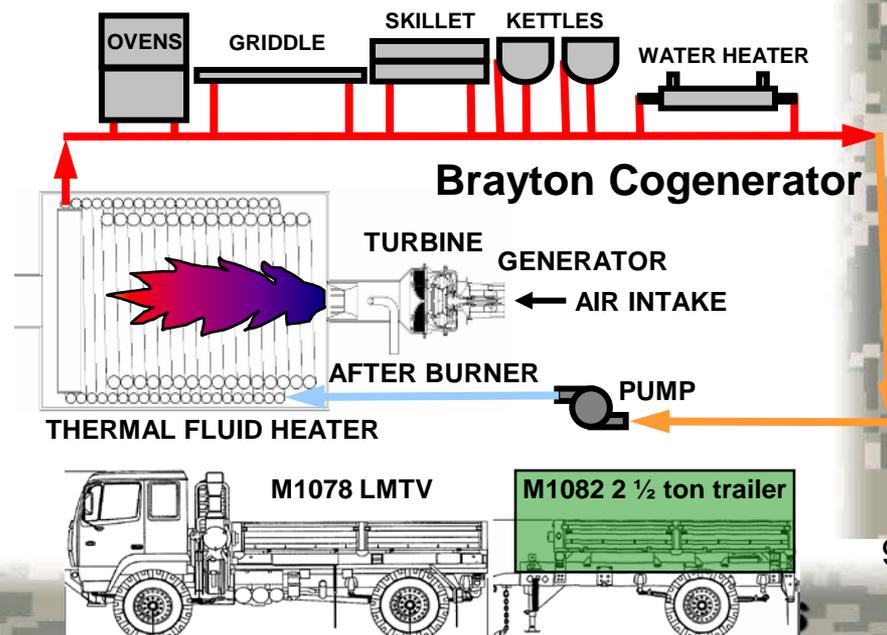
Leveraging:

DARPA funded Rankine cogenerator
 2 – SBIRs Combined Heat & Power (Brayton and Stirling)

What is the Warfighter Payoff?:

- Reduced fuel and water consumption
- Reduced transportation costs and footprint
- Reduced operating and support costs
- Improved Manpower utilization
- Improved ability to produce high quality meals
- Larger work area and Improved working conditions

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System development (6.4)				[Green bar]					
CPD					[Grey bar]				
System demonstration (6.5)						[Green bar]			
Procurement								[Yellow triangle C]	[Green bar]



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Food Sanitation Center



CO Monitor



Grease Separator



Sink Fill Pump Assembly

Hot Surface Protection



FSC Enhancements

Objective(s):

- Address P3I requirements of FSC ORD:
 - Reduce logistic footprint by reusing sanitation water prior to disposal
 - Respond to CASCOM position paper (Jan 2004) regarding improved ventilation of combustion by-products

Capability Provided:

- Sink exhaust system operated within a closed FSC tent that meets toxic gas levels required by American Conference of Government Industrial Hygienists (ACGIH)
- Means to reuse untreated rinse and sanitizing water prior to disposal





Containerized Kitchen (CK)



- ◆ Fielding is currently focused on modular force requirements.
- ◆ Current figures for 2007 is 350 fielded with an acquisition objective of 742.



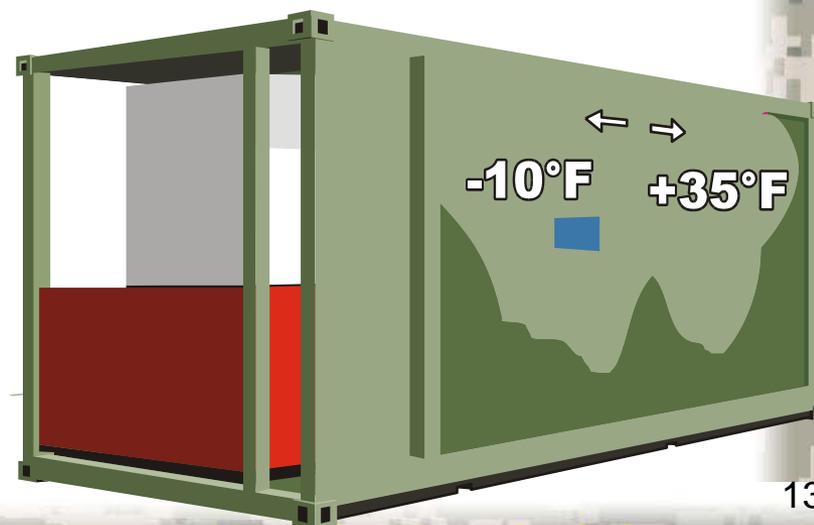
Multi Temperature Refrigerator Containerized System (MTRCS)

Objective:

- Develop a highly mobile multi-temperature partitioned refrigerated container system that provides simultaneous transport of frozen and chilled/semi-perishable rations on a single platform directly to the field kitchen site

Capability Provided:

- Multi-temperature product storage with two custom selectable/individually controlled compartments with setpoints ranging from $-5^{\circ}\text{F}/-20.6^{\circ}\text{C}$ to $60^{\circ}\text{F}/15.6^{\circ}\text{C}$
- Operation on the move
- Enable both military and commercial transportation.
- Multi-powered operation





Assault Kitchen (AK)



• Objective(s):

- Develop a lightweight, mobile field feeding platform to support the forward deployed Warfighter
- Functionally replace the Kitchen, Company Level Field Feeding (KCLFF)
- Reduce the field feeding logistical footprint



◆ Capability Provided:

- Heat-on-the-move field feeding
- Near instantaneous feeding at remote site
- Reduced feeding site food preparation time





Assault Kitchen (AK)

- **Benefits:**

- Same major components as USMC TRHS/AF SPEK (SEET)
- Utilization of NDI and commercial components
- Reduction in field feeding logistical footprint
- Minimal manpower required for system operation
- System meets Joint Service Requirements





Assault Kitchen (AK)



Capability: Provides heating and serving of the **UGR-H&S to company sized elements** at an objective force sustainment replenishment site (SRS) or in support of current force **remote site** feeding. **Prepares food for 250** in 90 minutes.

Description: equipped with a **Tray Ration Heater System**. Includes insulated food and beverage containers, work tables. Transported on HMMWV and HMT or future replacement.

BOI: **One for one replacement** of the KCLFF. 20 per SBCT; 17 per Heavy/Light BCT

War fighter Criticality/Value:

Operational Responsiveness

- **Heat-on-the-Move** technology
- Capable of supporting more than one Sustainment Replenishment Site (SRS) per day and augmentation of feeding capability at Mission Staging Site (MSS).

Reduced Logprint / Resources

- Prepares the **UGR H&S exclusively** with no additional resources necessary for support.



Status: MS C ORD Approved Mar 04; required qty 2,110; FUE 3Q FY07

Issue: Initial procurement delayed until FY07; HMMWV and LTT availability beyond SBCT's



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QUESTIONS

