



Welcome

JOINT CULINARY CENTER OF EXCELLENCE (JCCoE) 2010 RESERVE COMPONENT FOOD SERVICE WORKSHOP FACILITIES AND EQUIPMENT DIVISION





Agenda

- **Our Mission/ What we do**
- **Modern Burner Unit (MBU) up grade**
- **Modern Kitchen Trailer (MKT) Reset – Kit**
- **Thermostatic Control**
- **Appliance Burner Types**
- **Containerize Kitchen (CK)**
- **Battlefield Kitchen (BK)**
- **Food Sanitation Center 2 Modification Kit FSC**
- **Melted Sink, Coupler, & Heat Shield**
- **Multi Temperature Refrigerated Container System (MTRCS)**
- **Assault Kitchen (AK)**
- **Self Powered Tray Ration Heater (SPTRH)**



Facilities & Equipment Division

- *Mission: Provides assistance to army installation around the world. Our main focus areas are garrison facilities layout designs, dining facility equipment, army field feeding equipment.*
- *Submits required FSE budgets for all MCA projects.*
 - *Prepare equipment schedule for dining facilities and forward to the army corps of engineers*
 - *Subject matter expert for Defense Supply Center Philadelphia, U.S Army Combined Arms Support Command, U.S. Army soldier system Center on new field feeding equipment.*



Modern Burner Unit (MBU)



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





Modern Burner Unit (MBU) Upgrade

Units in possession of MBU's

- NSNs 7310-01-452-8137 (original) LIN – B38672
- NSNs 7310-01-507-9310 (Current) Lin has been canceled
- Lin causing confusion whether or not MBU is authorized
- MBU is now a Secondary item
- Now longer separately authorized
- MBU are now components of the platforms below

Platform	LIN	# of MBU
• Mobile Kitchen Trailer (MKT)	L28351	6
• Containerized Kitchen (CK)	C27633	9
• Food Sanitation Center (FSC)	S33399	3
• Kitchen Company Level Field Feeding (KCLFF)	K28601	3
• Modular Field Kitchen (MFK)	F39561	6



Modern Burner Unit (MBU) Upgrade

Before MWO

FUELING - DO NOT USE GASOLINE
For manual fueling -see operating instructions

1. Install MBU in appliance
2. Connect 24 Volt DC power cable to front of MBU and press **Power** button
3. Connect fuel hose to front of MBU and fuel supply
4. Turn burner control to high setting
5. Press **Fuel** button
6. When fuel indicator light is steady green -disconnect hose
7. Press **Power** button

MBU

OPERATION

1. Press **Power** button
2. Turn burner control to HIGH (Start) position
3. Press **START** button
4. When run indicator light is on turn burner control to desired setting
5. In case of automatic shut down see operating instructions

SHUT DOWN

1. Press **STOP** button
2. Press **Power** button

After MWO

- Once units update MBUs
- Hand receipts holders must contact their supply or PBO to update hand receipts.

FUELING - DO NOT USE GASOLINE
For manual fueling -see operating instructions

1. Install MBU in appliance
2. Connect 24 Volt DC power cable to front of MBU and press **POWER** button
3. Connect fuel hose to front of MBU and fuel supply
4. Turn burner control to **HIGH(FUEL)** setting
5. Press **FUEL** button
6. When fuel indicator stops flashing - disconnect hose
7. Press **POWER** button

MBU v3

OPERATION

1. Press **POWER** button
2. Turn burner control to **HIGH (START)** setting
3. Press **START** button
4. When run indicator lights, turn burner control to desired setting
5. In the event of an automatic shut down see Operating instructions

SHUT DOWN

1. Press **STOP** button
2. Press **POWER** button



Fuel Delivery Block Upgrade



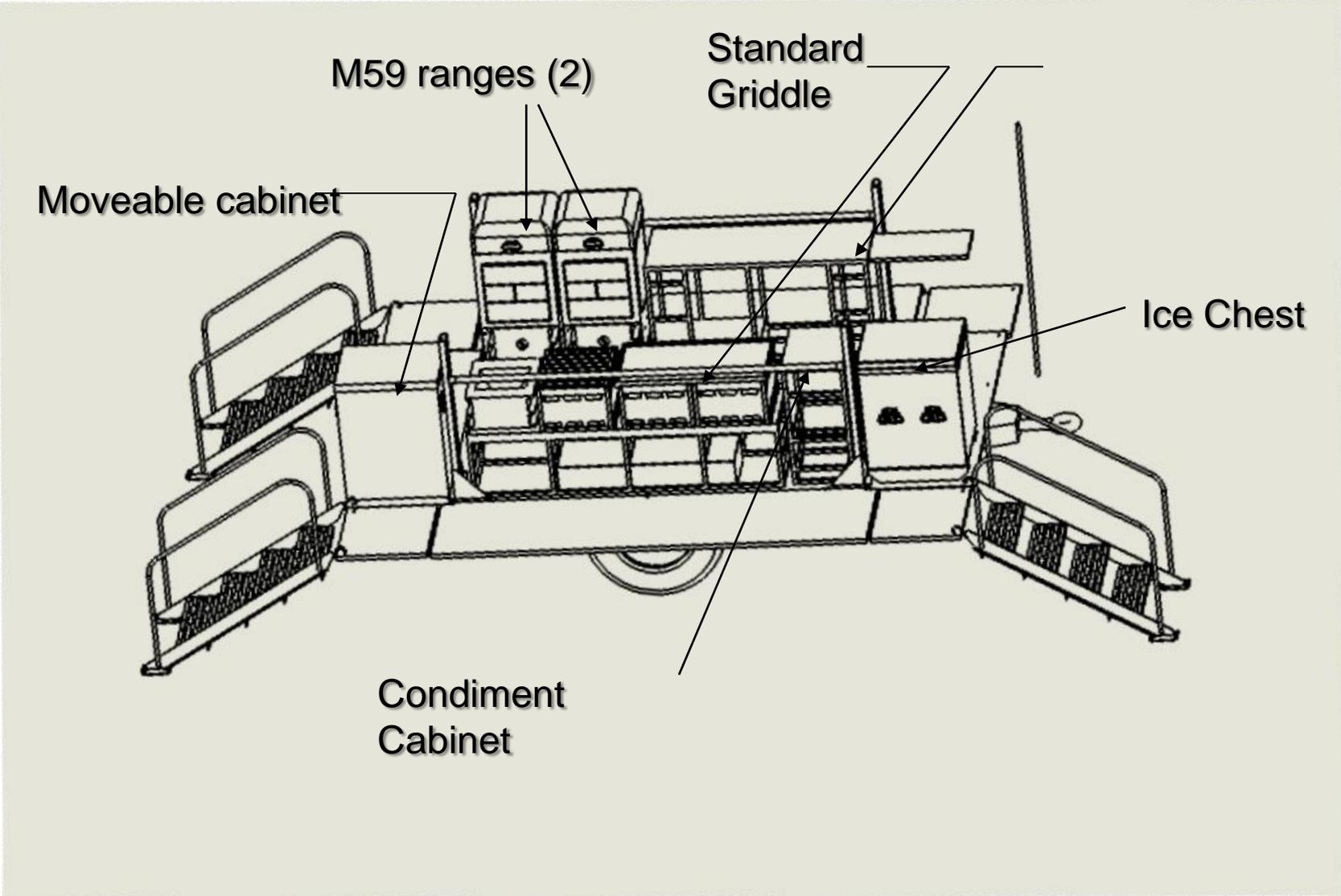
Control panel and data plate decals will be changed to reflect updated MBU



Current NSN



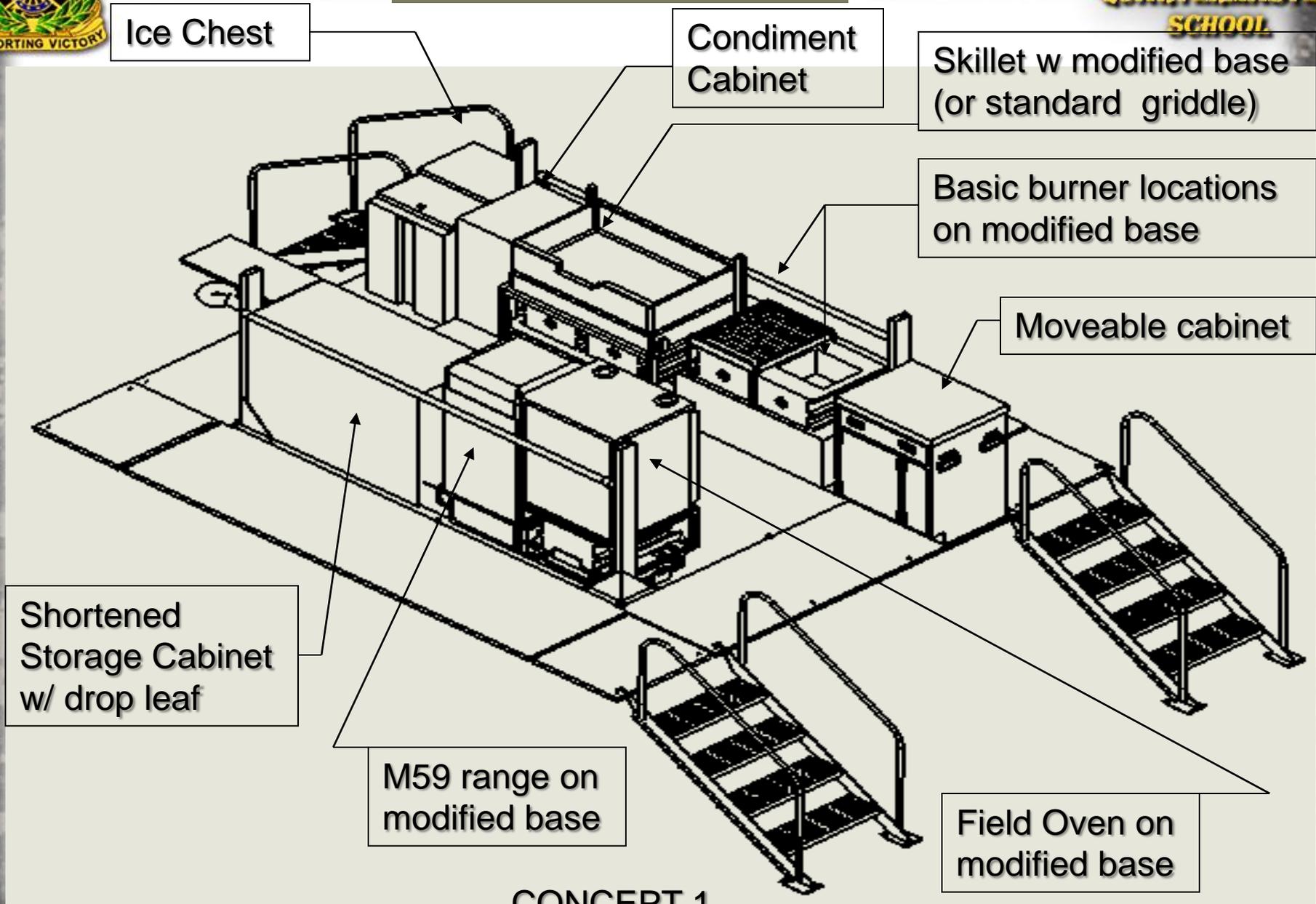
MKT Reset Kit





MKT Reset Kit

**U.S. ARMY
QUARTERMASTER
SCHOOL**



Ice Chest

Condiment Cabinet

Skillet w modified base (or standard griddle)

Basic burner locations on modified base

Moveable cabinet

Shortened Storage Cabinet w/ drop leaf

M59 range on modified base

Field Oven on modified base

CONCEPT 1

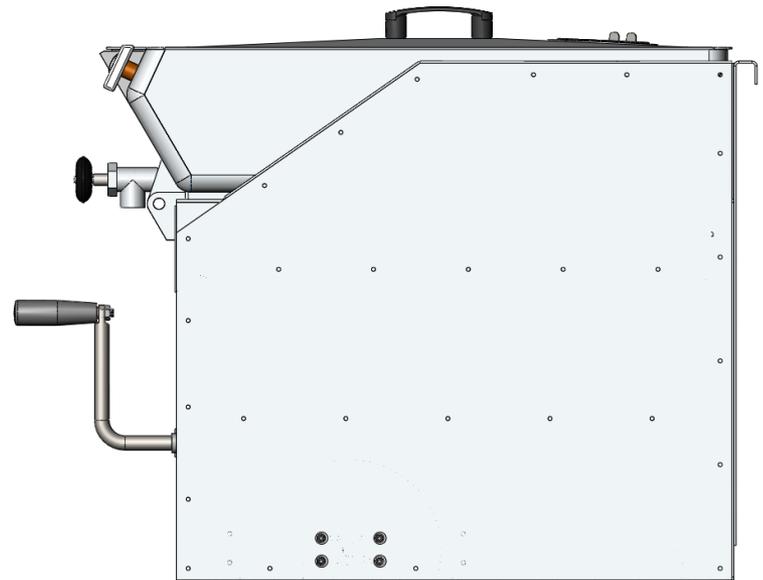
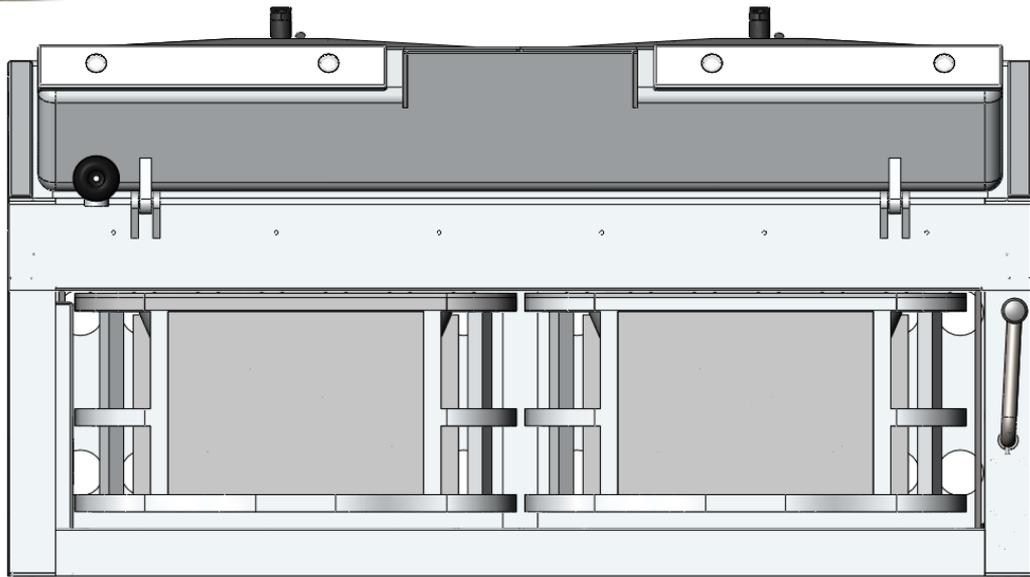
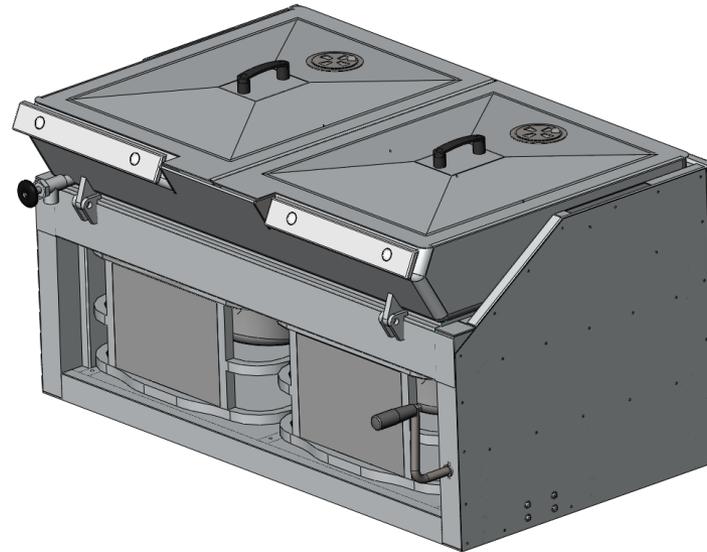
Warrior Logisticians



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57309002 RevX, Tilt Skillet Screen Shots
REFERENCE ONLY, MSH, 07-16-09

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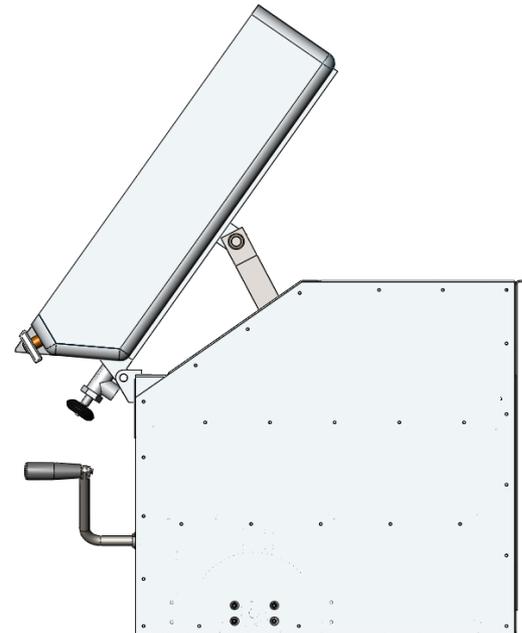
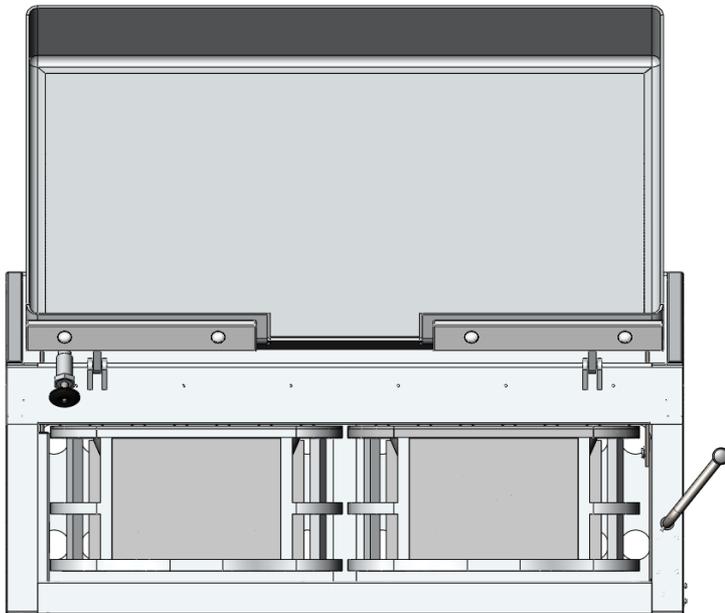
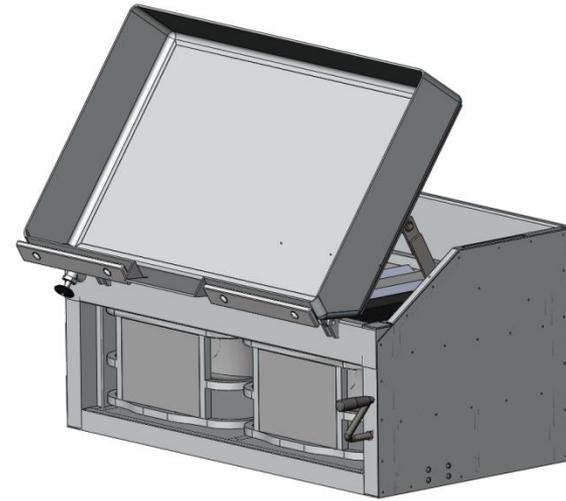


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Warrior Logisticians



Containerized Kitchen

Purpose:

To improve the working environment and effectiveness of the CK through ECP and the Reset program and align development efforts with the Battlefield Kitchen.

Results/Products:

- Prototype system
- Technical Data
- Test data
- Engineering Change Proposal (ECP)

ROI/Payoff:

- Reduced heat stress for kitchen workers
- Incorporate Sanitation within the CK
- Transition to production through ECP and to the ILSC CK reset effort





Containerized Kitchen, P3I Approach

- **TOSS contract with Global Defense Engineering**
- **Consider future compatibility with BK during development**
- **Develop improved container first**
 - **Ventilation and layout**
- **Test with currently available appliances for threshold approach**
- **Develop improved appliances for objective approach**
 - **MBU component based**
 - **Closed combustion where appropriate**
 - **Modular**
 - **Thermostatically controlled**
- **Layout and ventilation can be fielded with currently available appliance (CK, MKT, FSC) if new appliance development is delayed**
- **New appliances can be integrated as they become available**



Thermostatic Control (Prototype)

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- ✓ 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



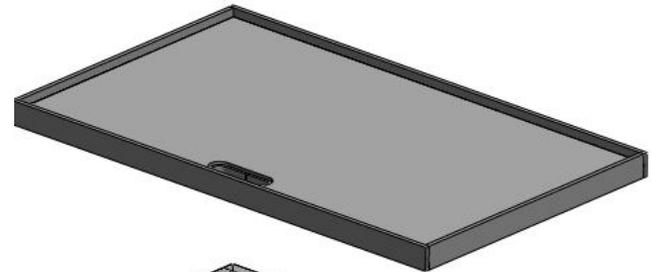
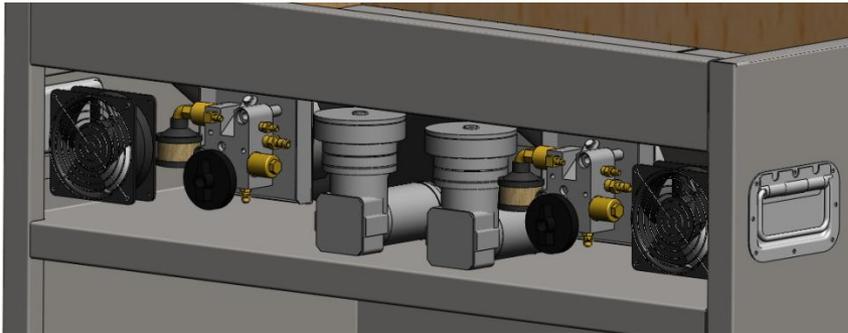
Appliance Burner

Burner Types

- Not using standard MBU
- Utilizing MBU components or COTS parts
 - Possible long development time and cost associated with a new burner configuration
 - Currently only consideration MBU components for expediency
- Multi-burner configurations
 - Standardize widths at 18" increments
 - One, two or three burners
- Burner using direct flame and infrared for heat transfer
- Fuel source not integral with burner – plug into 5 gallon can or other source.
- Burner components accessible from operator front for ease of repair or replacement
- Air cooled design
- Inducted draft design

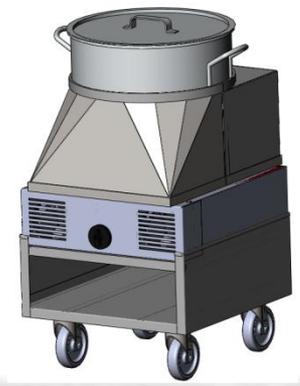
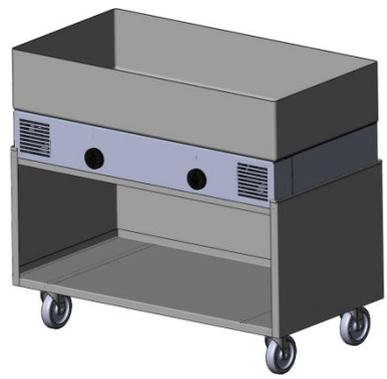
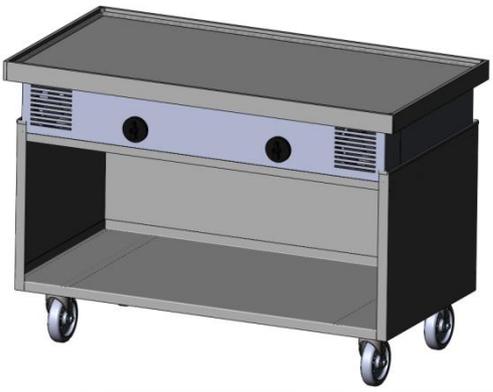
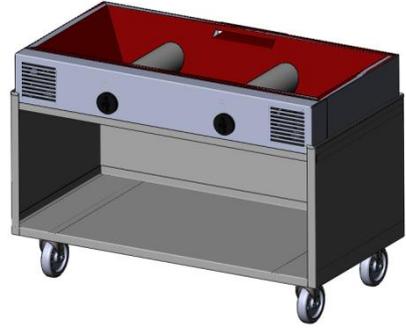
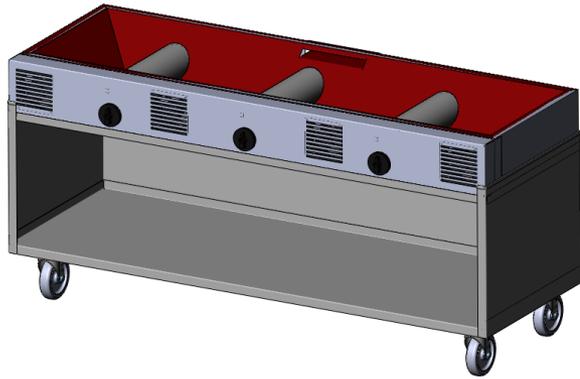


Burner Concept 1





Burner Concept 2 Configurations - Multi-Base Design





Containerized Kitchen, P3I Approach

- Reduced noise
 - Improved oven, sanitation sinks, and skillet will have closed combustion
- Reduced heat
 - Vent hood will be more effective
 - Larger fans
 - Back wall for improved air flow
- On-board sanitation
 - FSC system will fit in proposed layout (threshold)
 - Improved sinks will be large and thermostatically controlled (objective)
- Improved air quality inside kitchen
 - Vent hood will remove more exhaust (threshold)
 - Improved appliances will vent directly out of kitchen (objective)
- Simplified electrical system
 - ECU require complex energy management system
- Ability to cook and serve simultaneously
 - Stand alone, heated serving line



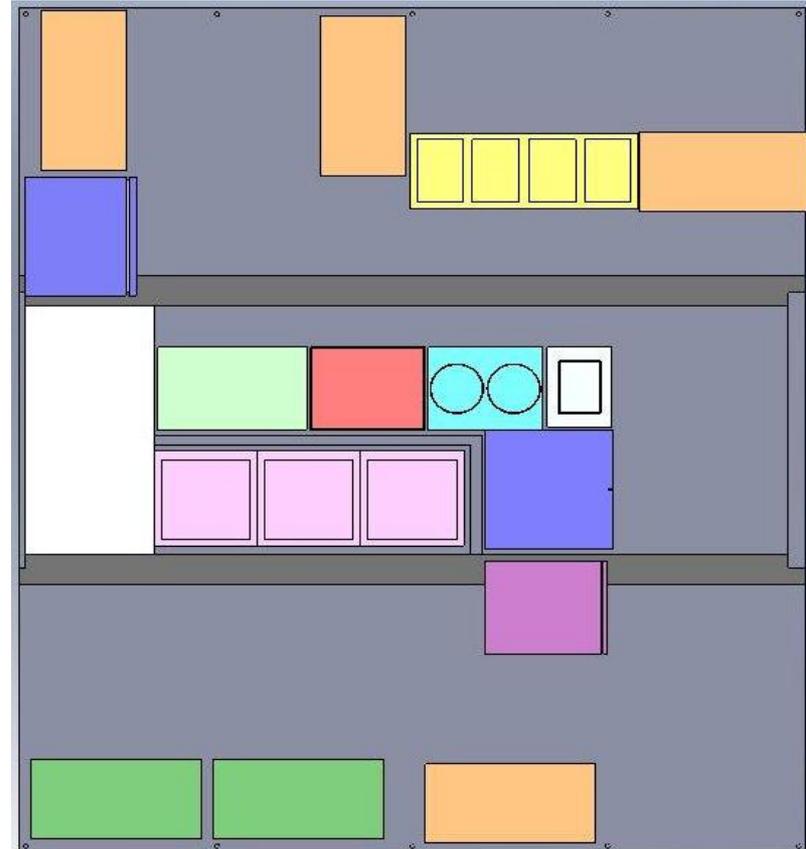
Containerized Kitchen, P31 Layout

Purpose:

To improve the working environment and effectiveness of the CK through ECP and the Reset program and align development efforts with the Battlefield Kitchen.

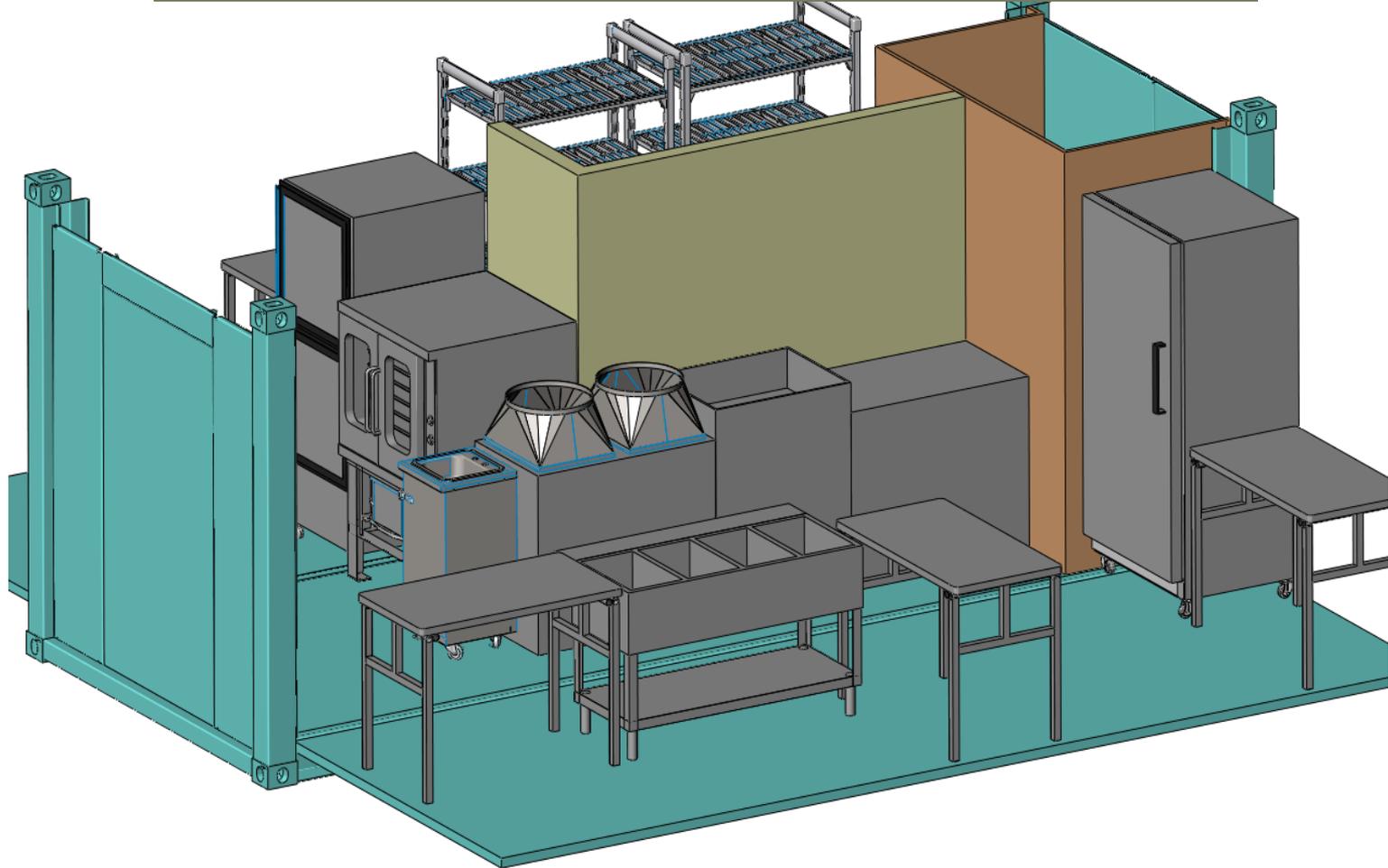
ROI/Payoff:

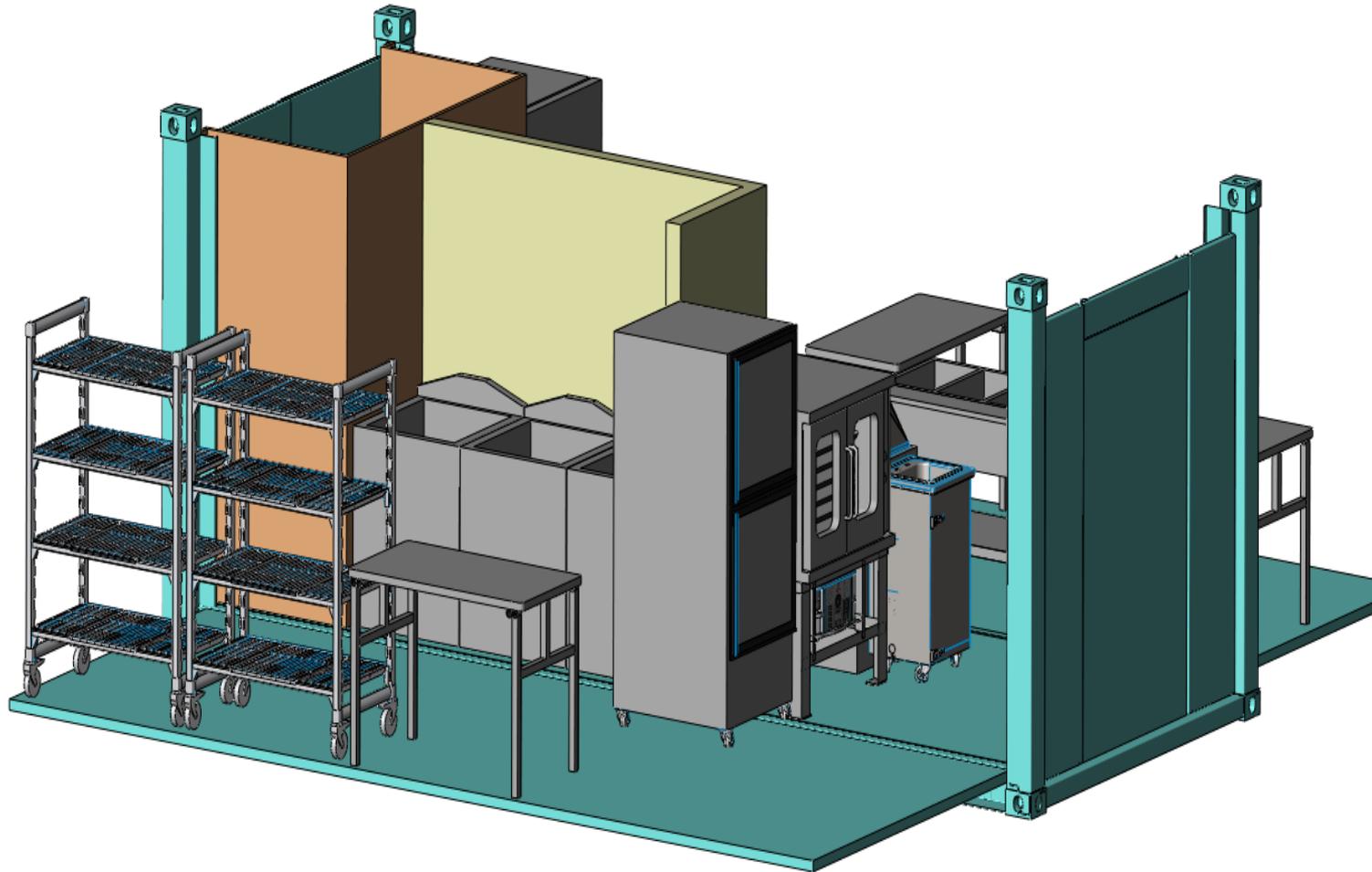
- Reduced heat stress for kitchen workers
- Incorporate Sanitation within the CK
- Transition to production through ECP and to the ILSC CK reset effort





NEED INFORMATION







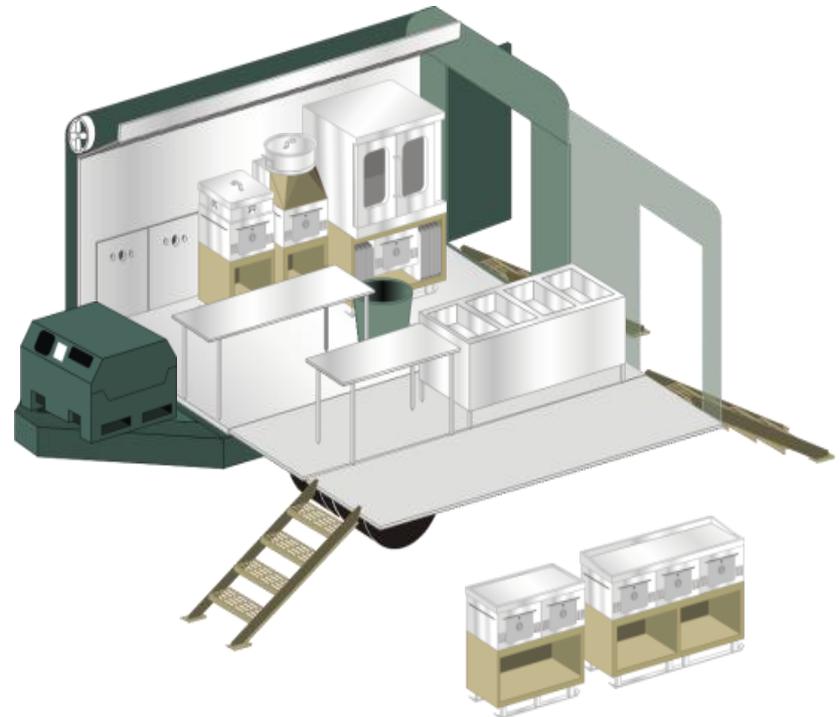
Battlefield Kitchen (BK)

Purpose:

To replace the aging MKT with a modern kitchen that increases mobility, efficiency and reduces personnel requirement

ROI/Payoff:

- More efficient kitchen operations
- Less heat and noise in kitchen
- Appliance compatibility between army field kitchens





Battlefield Kitchen

- Updated Platform
 - Improved mobility
- Reduced noise inside kitchen
 - Appliances will have closed combustion
 - Pots may still benefit from open flame
- Improved air quality inside kitchen
 - Vent hood that will interface directly with appliance intake and exhaust
- Improved operator and overall efficiency
 - More efficient layout
 - Easier set-up
 - Thermostatic control for appliances
 - More efficient heat transfer of appliances
 - Faster
 - Lower fuel consumption
- Hybrid power
 - Extended generator life



FSC Modification Kits

- User priorities based on Nov 07 IPT meeting in their order of importance
 - (1) All FSC-90s to get Basic Kit – see next slide
 - (2) Once all FSC-90s upgraded to FSC-2 standard then add (in order of importance) as funds allow
 - Thermostatic control units (TCU)
 - Gray water reuse pump assembly
 - Sink exhaust assembly
- Global to deliver first production lot of Basic Kits Jul 09
- FUE scheduled Feb 2010
 - Pending publication of MWO and TM change



FSC Modification Kits

Lights

CO Monitor/Alarm

Converter hanger and 4-outlet cord

Grease Separator & Drain hoses

Sink Fill Pump Assembly w/ Hoses & Nozzle

Hot Surface Protection

Basic Kit also includes gloves, aprons, ladder and GFCI

FSC-90 parts to be retained by units:

- Drain table
- Work Tables
- TEMPER or MGPTS
- Sink covers
- Storage racks
- Trash barrels
- MBUs
- converter
- DC cables



FSC Melted Sink, Coupler, & Heat Shield



Melted sink front heat shield



Melted warning labels on front of sink



Melted sink coupler



Multi Temperature Refrigerated Container System (MTRCS)

- The MTRCS is a highly mobile multi-temperature, partitioned refrigerated 8'x8'x20' ISO system that provides the capability for simultaneous transport and storage of frozen, chilled and/or semi perishable ration components on a single platform directly to the field kitchen site.
- Provides multi temperature product storage of two individually controlled compartments on the move.
- Feeds 800 personnel for 3 days when utilized with a CROP in order to serve two UGR-A meals per day and one MRE per day
- Fully tested and operational in ambient temperatures ranges from -25°F to +120°F





Multi Temperature Refrigerated Container System (MTRCS)



**MTRCS, HEMTT &
CROP on PLS-T**



**CROP on
PLS-T**



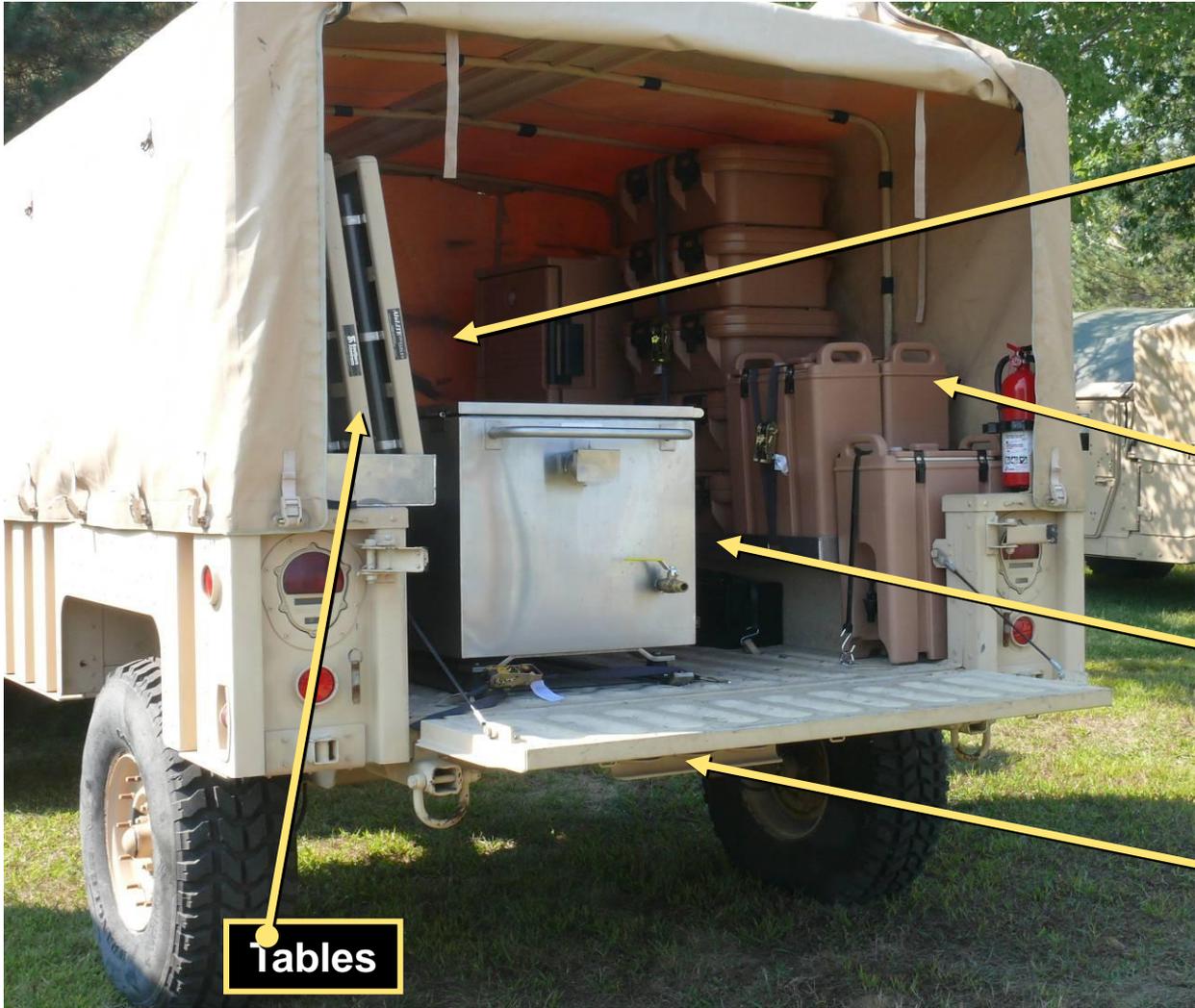
Assault Kitchen (AK)

- 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





Assault Kitchen (AK)



Tables



**Maintenance
Kit and Power
Inverter**

**Insulated
Food &
Beverage
Containers**

**Tray Ration
Heater**

**Light
Tactical
Trailer**



AK Key Systems 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





Self-Powered Tray Ration Heater (SPTRH)

Purpose:

Develop a self-powered version of the Tray Ration Heater that produces its own operating electricity from the heat of combustion

ROI/Payoff:

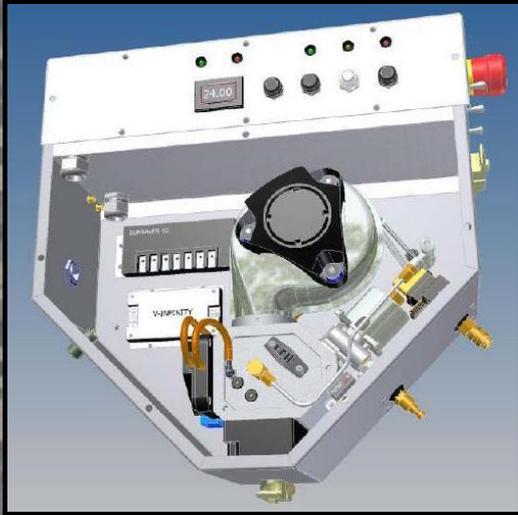
- Reduction in JP8 consumption
- Improved system reliability
- Completed Performance Specification for procurement – FY10

Self-powered Tray Ration Heater

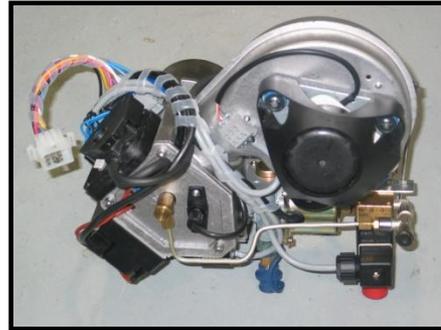




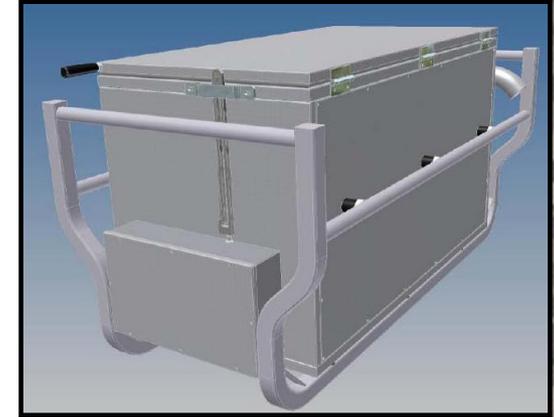
Key STRH Components



Hawkmoor Burner Assembly



Hawkmoor Burner



Battery Side of SPTRH



Thermoelectric on Underside of Tank



Control Panel



Goldie Bailey DSN 687-3354 Comm. 804-734-3354

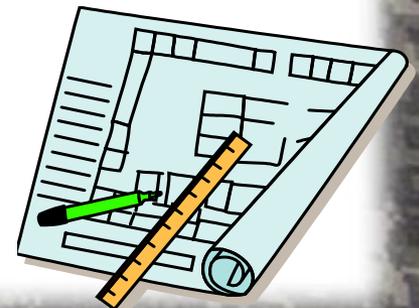
Wardell Carey DSN 687-3450 Comm. 804-734-3450

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Ryan Mebane DSN 687-3122 Comm. 804-734-3122

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Questions/Comments?

