



**Army Center Of Excellence, Subsistence  
Reserve Component  
Food Service Workshop 2008  
“FEEDING AN ARMY STRONG”**

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*22 March 2008*

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# Topics



- Facilities and Equipment Division Mission
- National Guard Major Construction Flow
- Operational Readiness Training Complex Designs
- Food Service Equipment (FSE) Replacement Program
- Active Army Design Concept Fort Meade Maryland



# Facilities and Equipment Division Mission



The Facilities and Equipment Division (FED) provides advice and assistance to all of the Army's units and installations in reference to Food Service Equipment (FSE), Facilities and Designs, and FSE Maintenance. FED provides performance specifications for new equipment and makes equipment recommendations to the user, who in turn makes the final purchasing decision.



# Facilities and Equipment Division Mission CON'T



New construction  
modernization

Equip.  
Schedules

251-500



501-  
800

801-1300

**Facilities  
&  
Equipment  
Division**

Equip.  
Funding  
For MCA  
Projects

Review & Recommend  
changes to Army project  
Designs

CTA 50-909





# Major Construction Army (MCA) Process

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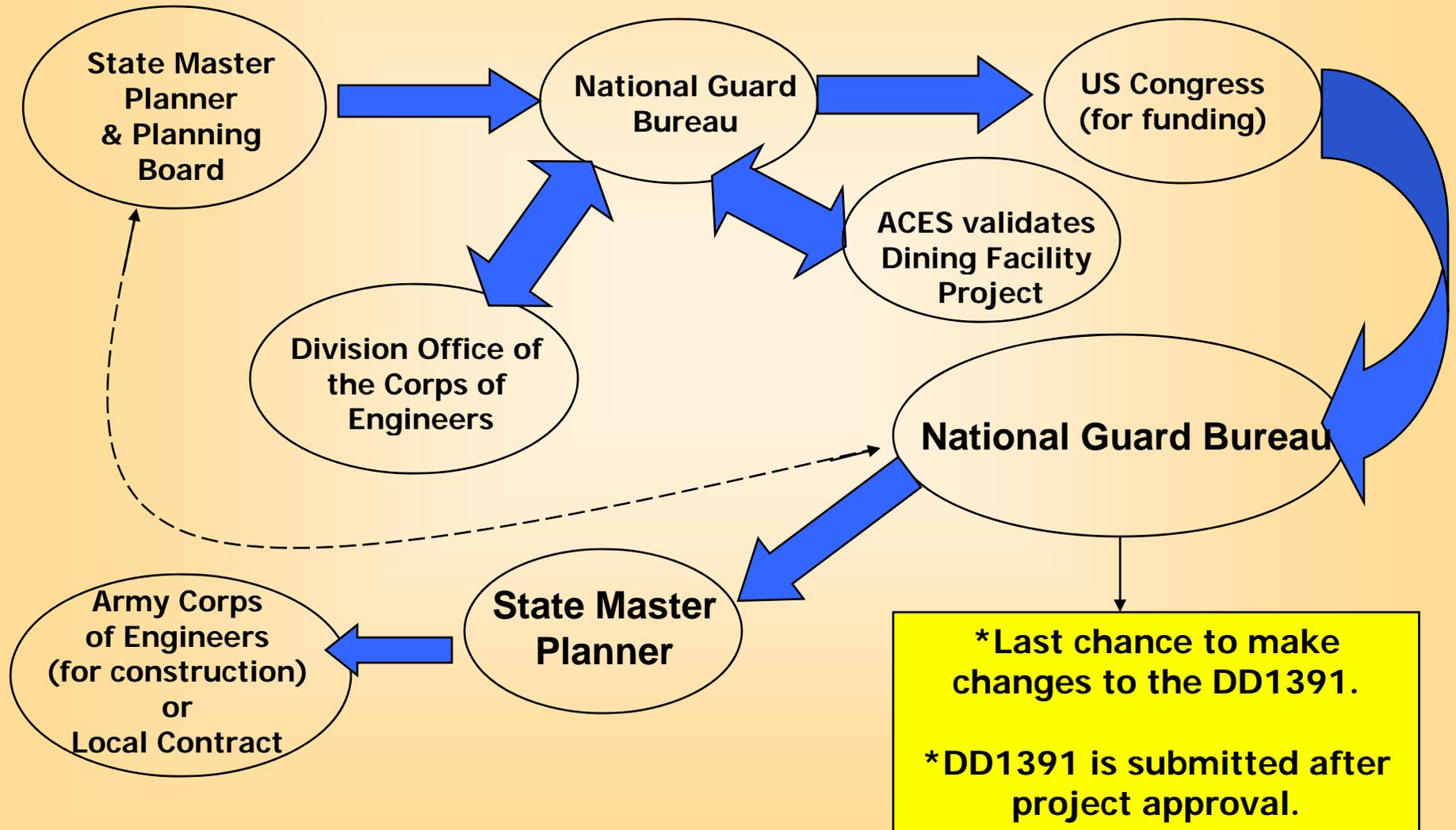
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# MCA Project Process



**START**



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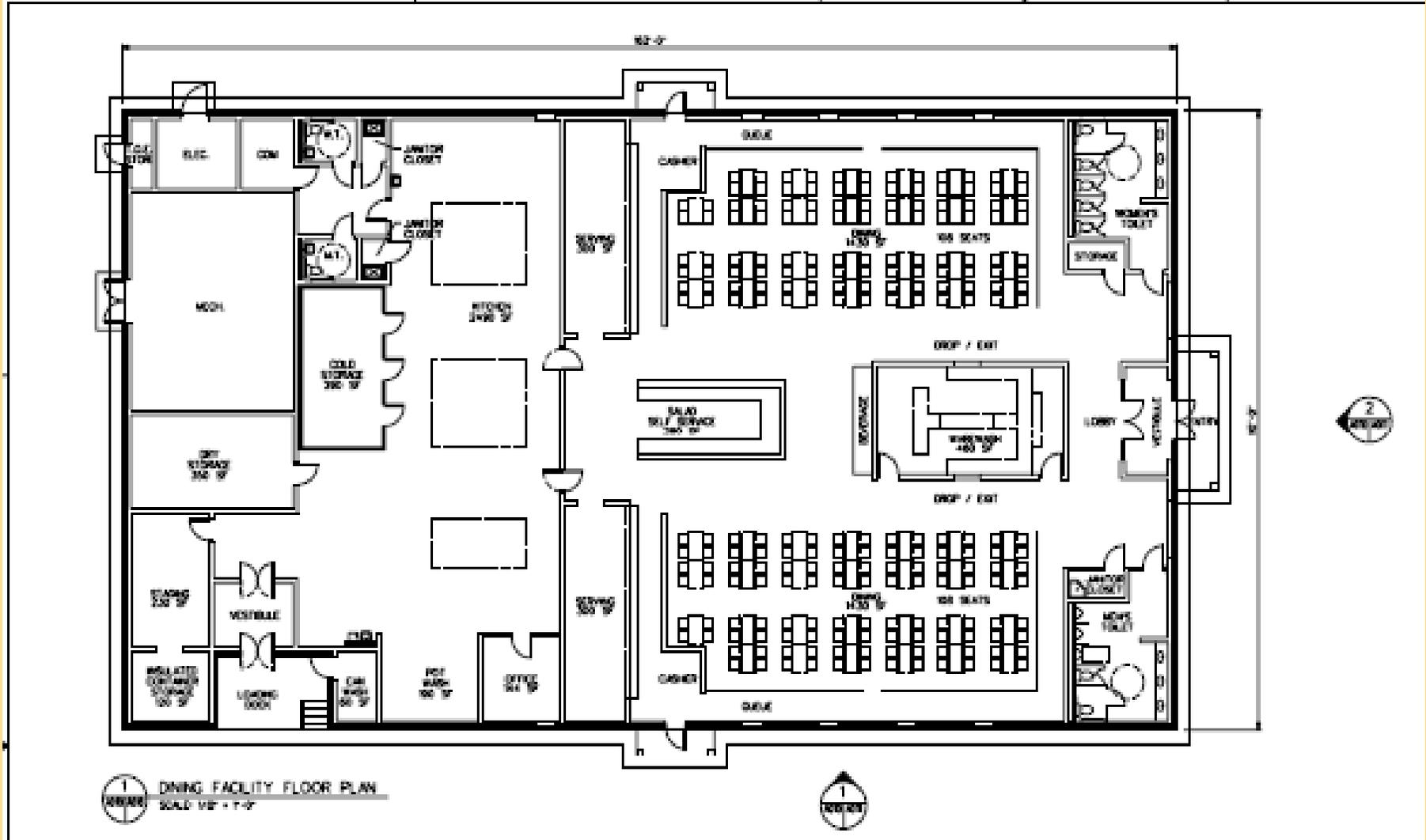
# OPERATIONAL READINESS TRAINING COMPLEX DESIGNS

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# Dining Facility Floor Plan UP TO 650

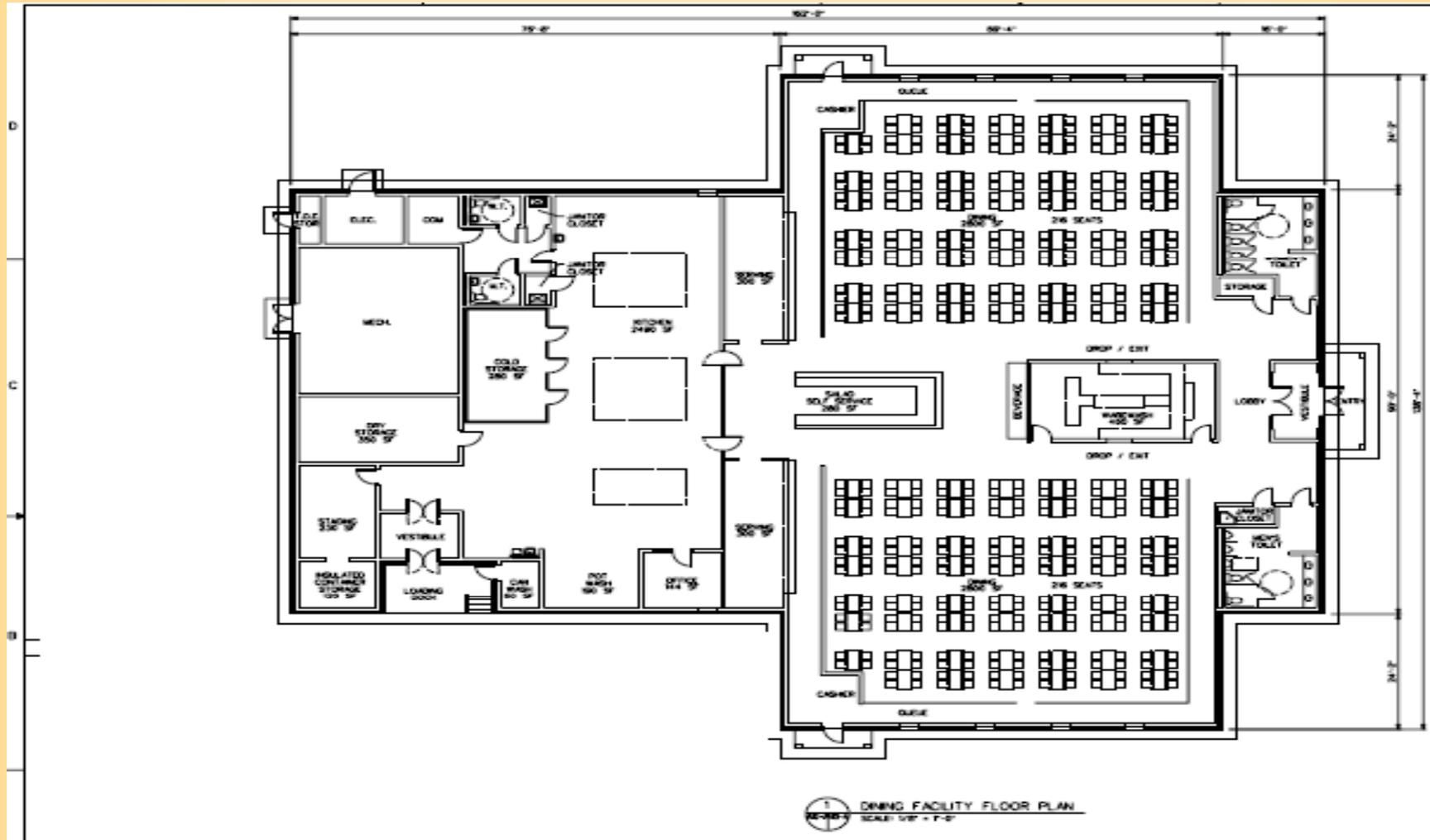


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# Dining Facility Floor Plan 651 and Above



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# Food Service Equipment (FSE)

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# New FSE Ordering Procedure



- Customers obtain equipment funding through normal funding procedures.
- Use appropriate documents and automation to request FSE funds IAW local procedures:
  - Department of Defense (DOD) Form 1149
  - DOD Form 1348-6
  - Department of Army (DA) Form 2765-1
  - Standard Form (SF) 344
  - Unit Level Logistics System (ULLS)
  - Property Book Unit Supply Enhanced (PBUSE), and FEDLOG



# New FSE Ordering Procedure CON'T



- DSCP is currently reviewing the standard pricing of equipment items and updating to reflect current pricing. When this update is completed, the items and prices will be posted to the DSCP website:  
<http://www.dscp.dla.mil/subs/pv/fse/index.asp>
- Customers can use this pricing information when formulating their open purchase document estimates. It is anticipated that this information will be posted to the website by fiscal year 2008.
- Once funded, submit requisitions directly to the local Installation Property Book Manager for processing.



# New (FSE) Ordering Procedure CON'T



- Customer orders may be placed with DSCP via military standard requisitioning and issue procedures (MILSTRIP) or other means to include electronic mail or facsimile.
- Once funded, submit requisitions directly to the local Installation Property Book Manager for processing.
- Customer orders may be placed with DSCP via military standard requisitioning and issue procedures (MILSTRIP) or other means to include electronic mail or facsimile.



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# US ARMY DESIGN CONCEPT

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# Design Concepts



- A la carte
- Meal Replacement
- Drive through Window
- Carryout
- Traditional Style Serving



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# FORT MEADE MARYLAND DINING FACILITY

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# FREEDOM INN



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# FREEDOM INN CON'T



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# 2006 National Design-Build Award



**WE WON! Our first 3 DBIA Awards.**



## **2006 National Design-Build Awards**

- Ft. Meade Dining Facility
- Command Naval Installations Headquarters

## **2006 National Capital Chapter Design-Build Award**

- Command Naval Installations Headquarters

Congratulations:

**[Ft. Meade Dining Facility]** Megan McCarthy • Lou Munilla  
• Matt Petrangelo • Mike Little • Brian Orndorff • JJ French  
• Ron Jenkins • Dave Bertocci • Vic Bonardi • Mike Slattery

**[Command Naval Installations Headquarters]** Steve  
McRae • John Shumar • Megan McCarthy • Kevin Malpass •  
Vic Bonardi

These awards will be presented at  
the DBIA Conference & Expo in  
October 2006.



Through Teamwork We Do the Right Thing To Make It Happen!

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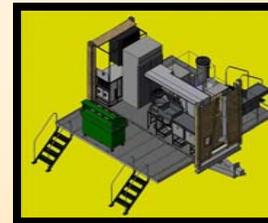
# QUESTIONS P

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# Army Field Feeding Systems Update



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# Topics



- ◆ Modern Burner Unit
- ◆ Mobile Kitchen Trailer
- ◆ Food Sanitation Center
- ◆ Containerized Kitchen
- ◆ Containerized Kitchen P3I- Thermal Fluid (CKTF)
- ◆ 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





# Power Converter



- ◆  $\frac{1}{2}$  inch shorter
- ◆ 5 lbs lighter
- ◆ More robust and reliable

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# 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

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# 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

## JSN 05-20



### ◆ 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)

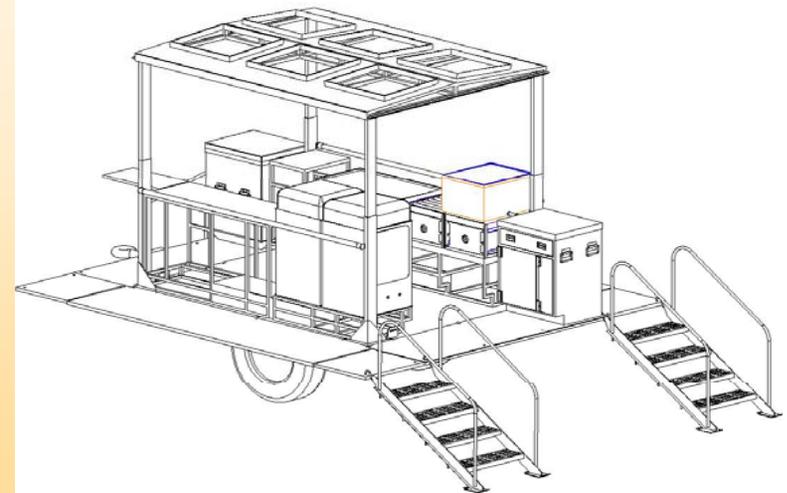
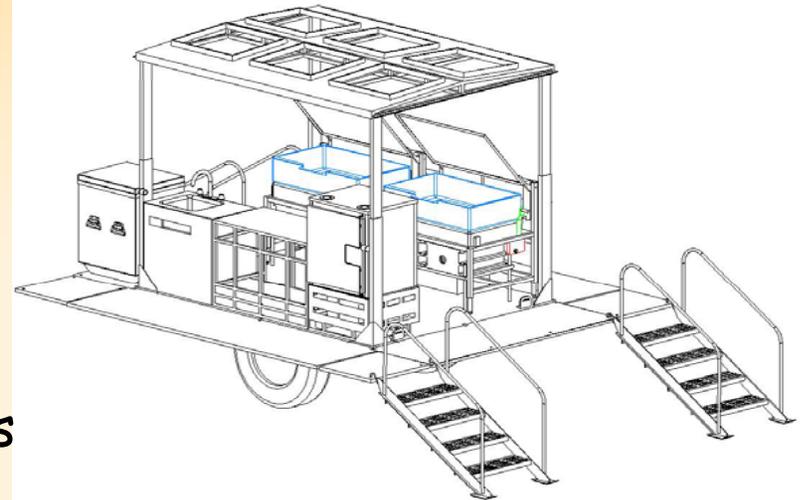


# MKT Reset Kit

## JSN 05-20



- ◆ 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



## 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

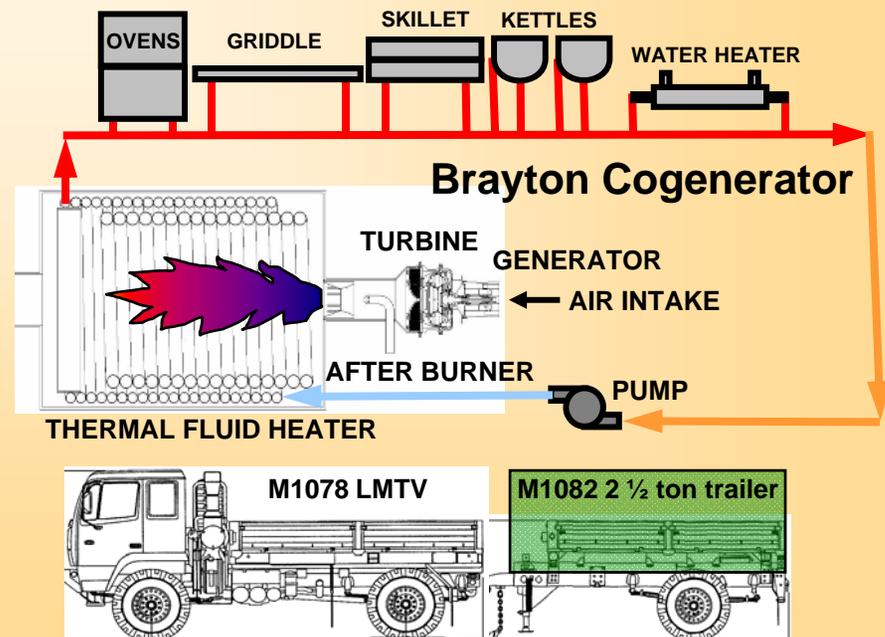
2 – SBIRs Combined Heat & Power (Brayton and Stirling)

## 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

MILESTONES	07	08	09	10	11	12	13	14	15
Concept development (6.2)	█								
Concept demonstration (6.3)			█						
CDD			█						
System development (6.4)				█					
CPD					█				
System demonstration (6.5)						█			

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# Food Sanitation Center Improvements



**CO Monitor**



**Grease Separator**



**Sink Fill Pump Assembly**

**Hot Surface Protection**

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# FSC Enhancements Program



## ◆ 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.



# Containerized Kitchen P3I – Thermal Fluid (TFCK)



## ◆ Objective(s):

- **Comprehensively address the pre-planned product improvements called for in the CK ORD**
- **Eliminate the need for a separate field sanitation center and its associated transportation asset**
- **Increase worker safety, comfort and effectiveness.**

## ◆ Capability Provided:

- **HEMTT compatible container that provides greater field mobility**
- **Restaurant-Style appliances provide greater user flexibility while maintaining capability to feed 800 warfighters, three meals/day**
- **Integrated Food Sanitation Center onboard that meets the requirements of the FSC ORD**



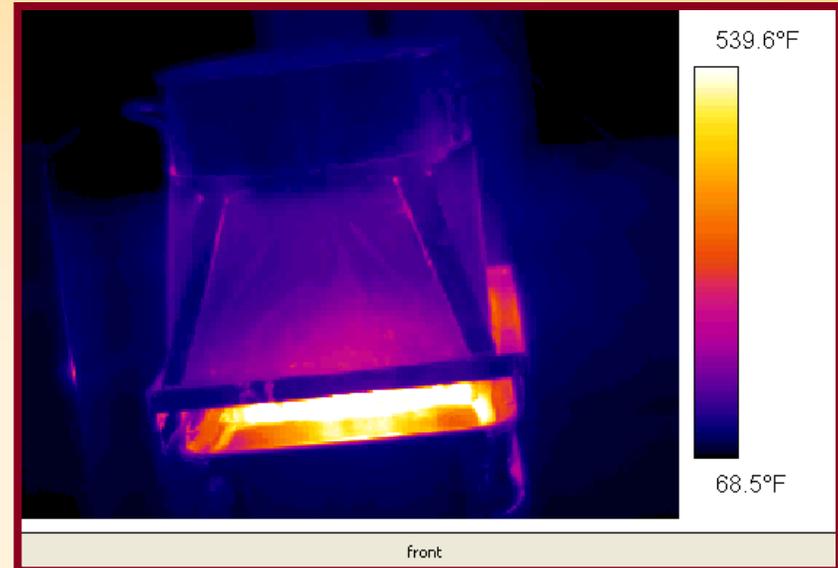


# Containerized Kitchen P3I – Thermal Fluid (TFCK)



## ◆ ROI/Benefits:

- Elimination of 10 open flame combustion MBU with a single, efficient, highly reliable, vented combustion, commercial heater
- Provides a much safer, cooler and quieter work environment by venting combustion products
- Elimination of FSC transportation asset saves fuel, money and possibly lives



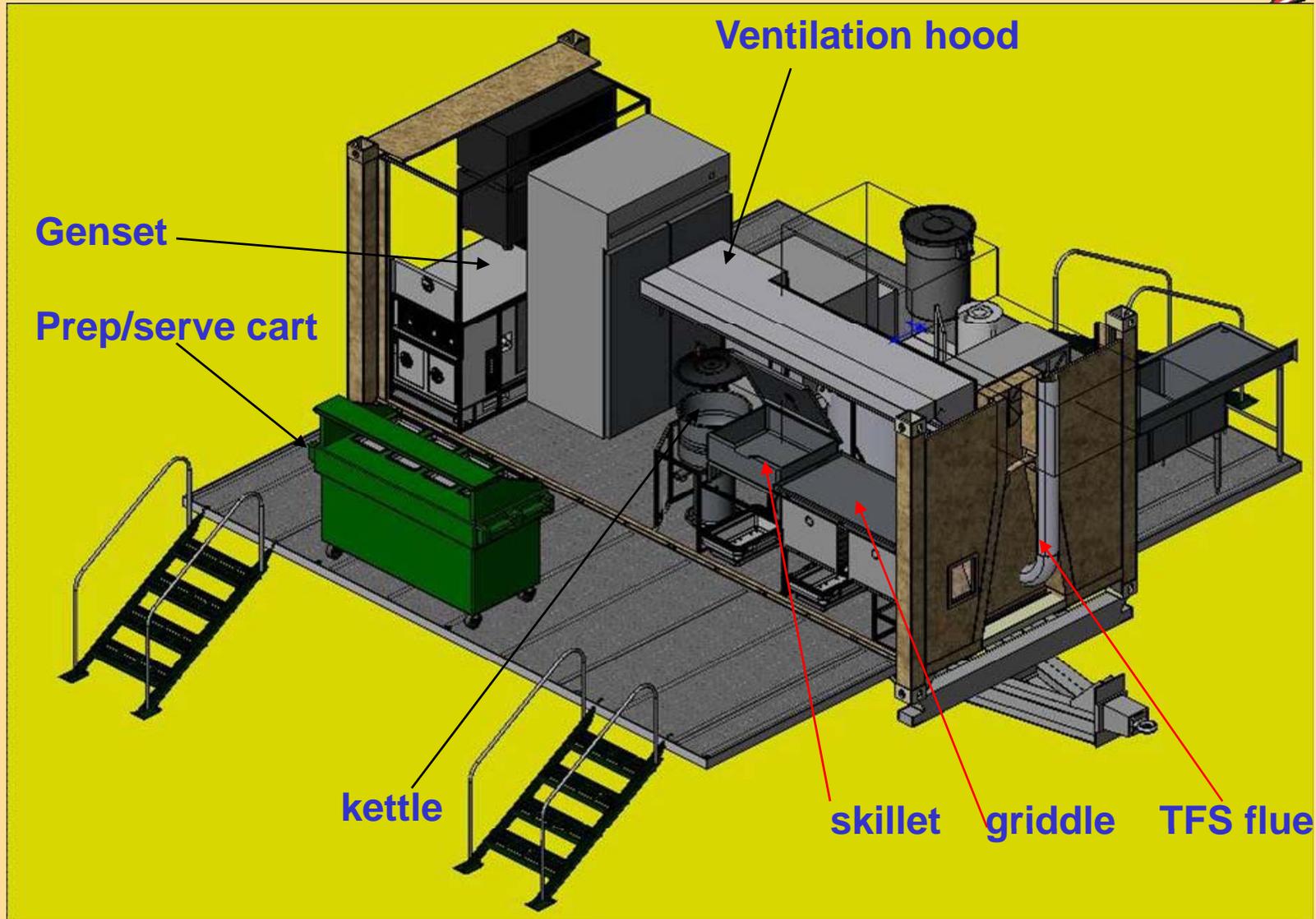
- Thermal fluid cooking provides even, controlled heating and appliance flexibility resulting in superior rations

## ◆ Applications/Deliverables:

- Short Term - Testable prototype that will be used to develop performance specification
- Long Term - Class I ECP that will transition to production contract, replacing legacy CKs in future buys



# TFCK – Design Concept (serving side view)

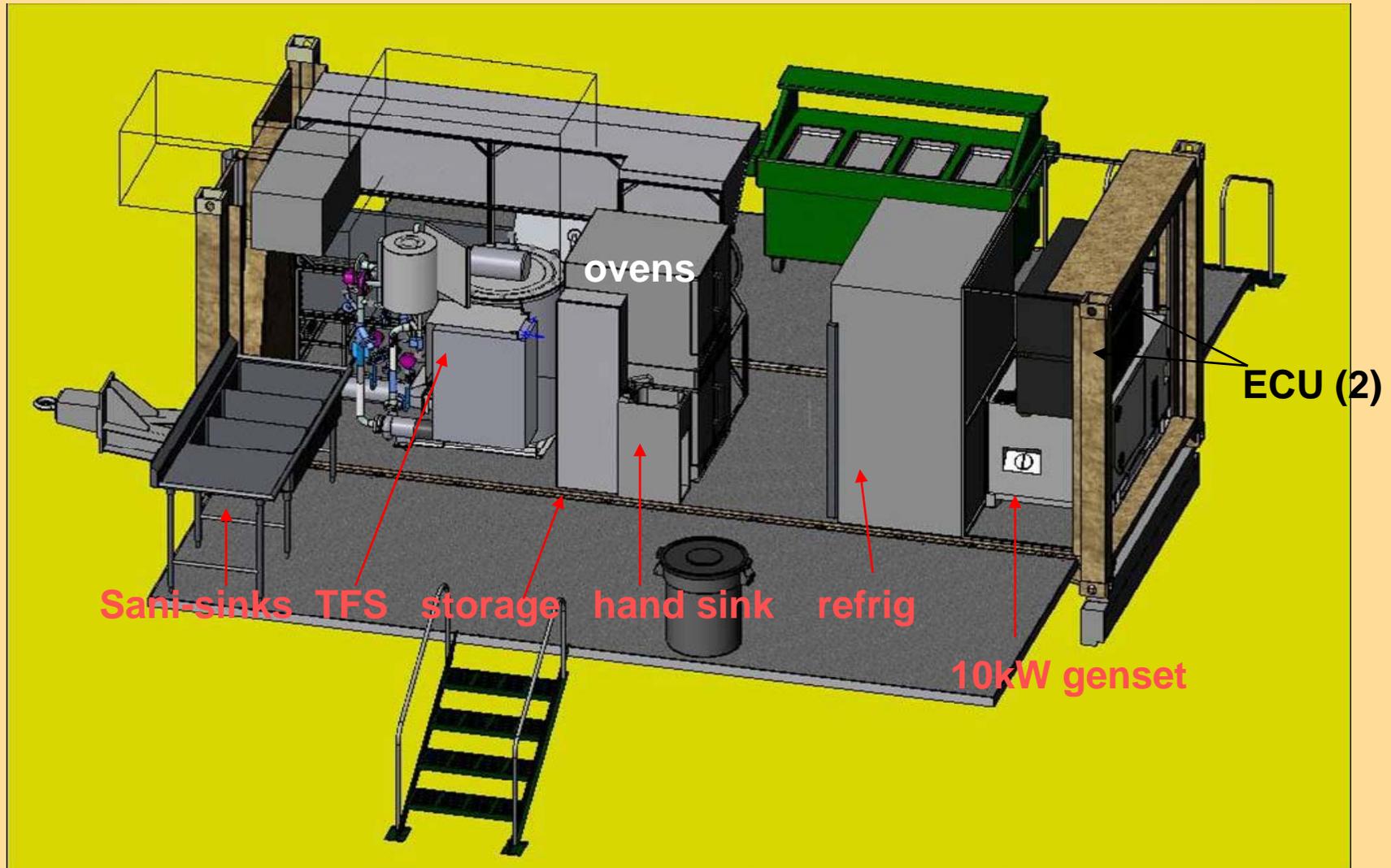


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# TFCK – Design Concept (sanitation side view)



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# Multi Temperature Refrigerator Containerized System (MTRCS)

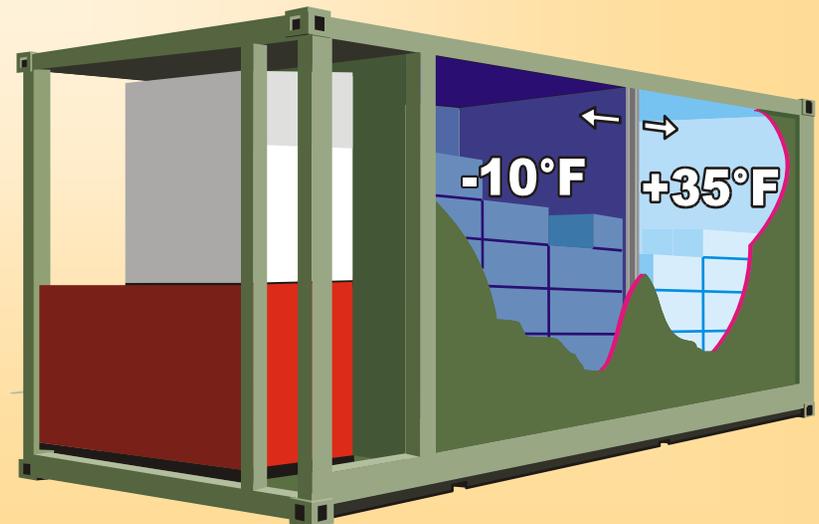


## ◆ Objective:

- 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



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# New Design



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# 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)



## ◆ FY07 Planned Accomplishments

- MS-C (LRIP) approval (completed)
- DSCP contract award for TRHS components (completed)
- System components purchased (completed)
- LRIP test items developed (ongoing)
- Conduct Production Verification Testing (PVT) and Log Demo

## ◆ Future Plans

- Evaluate Self Powered Tray Ration Heater
- Determine configuration to accommodate A-ration capability





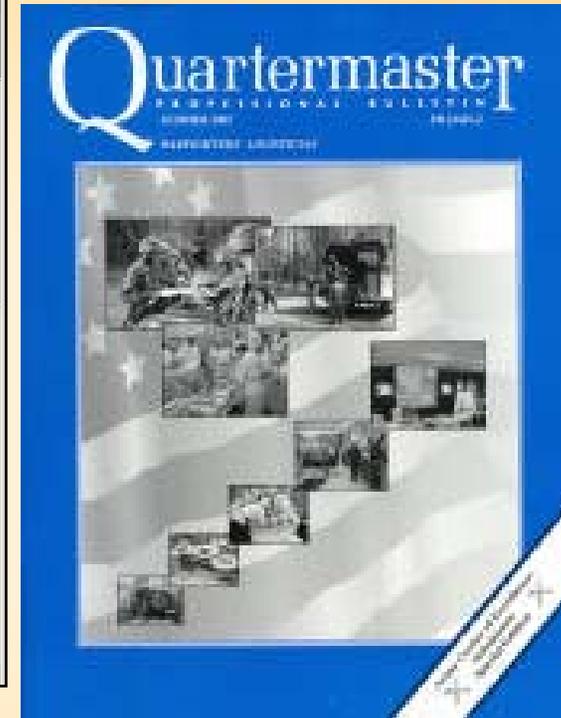
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# NEED INFO?



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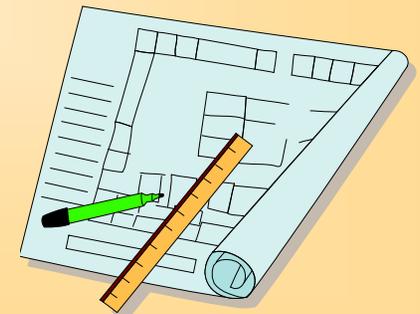
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