



# U.S. ARMY COMBAT CAPABILITIES DEVELOPMENT COMMAND – SOLDIER CENTER

## *Combat Feeding Division Overview*

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# AGENDA



- **Combat Feeding Division (CFD) Mission**
- **Team Capabilities**
- **Capabilities Based Assessment outputs**
- **S&T for Future Operating Environments**



# THE GLOBAL LEADER AND TECHNOLOGY PROVIDER FOR MILITARY FIELD FEEDING



...to deep space

*Providing an operationally relevant research and  
development base to deliver solutions for evolving field  
feeding challenges*



From deep sea...



## DoD Directive 3235.02E, “DoD Combat Feeding Research and Engineering Program”

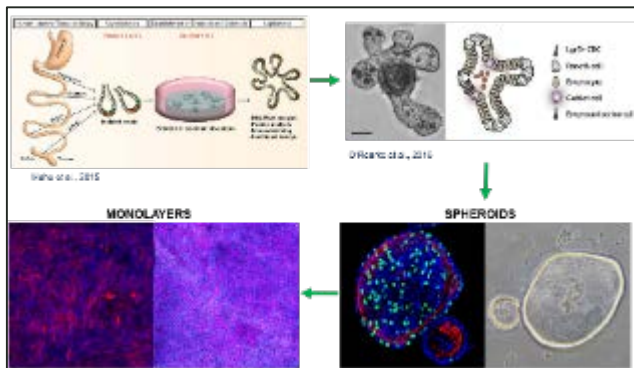
- This issuance:

- Establishes DoD policy and assigns responsibilities for governing combat feeding research, development, and engineering
- Establishes and provides guidance for the DoD Combat Feeding Research & Engineering Board and the DoD Nutrition Committee
- Designates the Secretary of the Army as the DoD Executive Agent for DoD CFREP
- Directs the Army to perform programing and budgeting for both OMA and RDTE funding for priorities approved by DDRE(R&T)

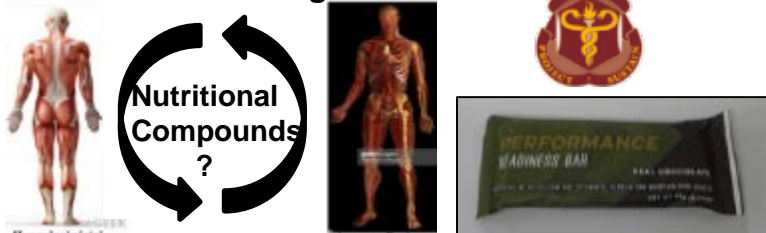


## Functional Food and Nutritional Intervention Team

- Nutritional intervention S&T
- Functional food prototypes
- Muscle, gut and immune cell models
- Knowledge products
- Armed Forces Recipe Service



Muscle Damage



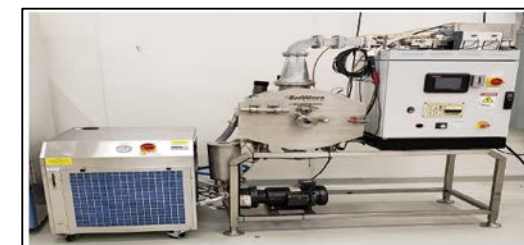
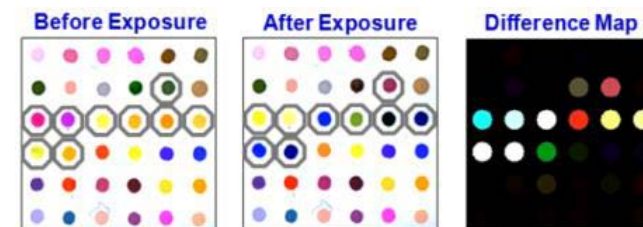
## Food Engineering and Analysis Team

- Food preservation & stabilization
- Food product development
- Chemical, physical, nutrient analysis
- Knowledge products



## Food Protection and Innovative Packaging Team

- CBRN packaging solutions
- Food contamination mitigation
- Microbiological testing of foods
- Knowledge products





## Combat Ration Engineering & Support

- E&MD for combat rations
- Sensory evaluations
  - Operational testing
  - Engineering support
  - Transition tech data



## Joint Foodservice Engineering

- S&T (all Services) and E&MD for USN, USAF & USMC foodservice systems
- Joint engineering support
  - Joint systems standardization



## Foodservice Equipment (PM FSS)

- E&MD for Army foodservice systems including:
- Army field kitchens
  - Army field refrigeration
  - Army field sanitation





# COMBAT FEEDING CBA JCIDS OUTPUT




1 **UNCLASSIFIED**

2 **Final Report for the**

3 **Combat Feeding**

4 **Capabilities-Based Assessment (CBA)**



4 **31 August 2020**

5 Sponsor: Acting Deputy Assistant Secretary of Defense for Health Readiness Policy and

6 Oversight (DASD(HRPAO)), Dr. Terry Rauch

7 Point of Contact:

8 • Mr. Stephen M. Moody, Director, Combat Feeding, U.S. Army Combat Capabilities

9 Development Command (CCDC)

10 This document contains pre-decisional information for deliberative use during the Combat

11 Feeding CBA sponsored by the Office of the Assistant Secretary of Defense for Health Affairs

12 (OASD(HA)). As such, the information in this report is exempt from public disclosure in

13 accordance with Title 5 USC § 552(b) (5) (Freedom of Information Act Exemption (b) (5)).


**UNCLASSIFIED**

1 **UNCLASSIFIED**

2 **Initial Capabilities Document (ICD)**

3 **for**

4 **Combat Feeding**



4 **31 August 2020**

6 Validation Authority: Joint Capabilities Board (JCB)

7 Proposed Milestone Decision Authority: Army Futures Command

8 Proposed Joint Staffing Designator: JCB Interest

9 Signature Authority: Office of the Assistant Secretary of Defense for Health Affairs

10 (OASD(HA))

11 • Dr. Terry Rauch, Acting Deputy Assistant Secretary of Defense for Health Readiness

12 Policy and Oversight, OASD(HA); terry.m.rauch.civ@mail.mil; 703-681-8390.

13 Point of Contact:

14 • Mr. Stephen M. Moody, Director, Combat Feeding Directorate, Army Futures

15 Command; stephen.m.moody.civ@mail.mil; 508-206-3300.

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17 Feeding Capabilities-Based Assessment sponsored by OASD(HA). As such, the information in

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19 (Freedom of Information Act Exemption (b) (5)).


**UNCLASSIFIED**

1 **UNCLASSIFIED**

2 **Joint DOTmLPPF-P Change Recommendation**

3 **for**

4 **Combat Feeding**



4 **31 August 2020**

5 Validation Authority: Joint Capabilities Board (JCB)

6 Proposed Lead Organization: Office of the Assistant Secretary of Defense for Health Affairs

7 (OASD(HA))

8 Proposed Joint Staffing Designator: JCB Interest

9

10 Signature Authority: OASD(HA)

11 • Dr. Terry Rauch, Acting Deputy Assistant Secretary of Defense for Health Readiness

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15 Development Command; stephen.m.moody.civ@mail.mil; 508-206-3300.

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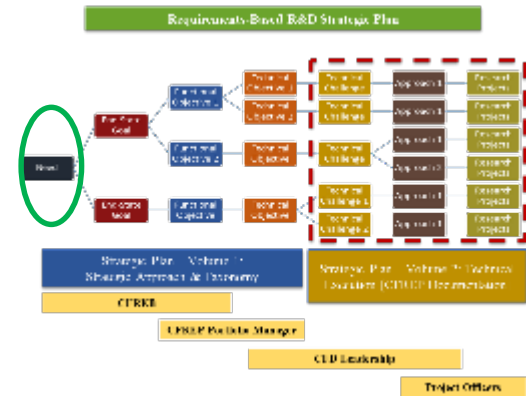
**UNCLASSIFIED**

**September 2021: CFD DCR document endorsed by the Joint Capabilities Board at a paper review**

**Briefed to Logistics Functional Capabilities Board March 2021 and Joint Capabilities Board September 2021**



# REQUIREMENT / NEED / GAP



**The Joint Force has limited ability to conduct combat feeding across all future operational environments.**





# Reducing Type 1 Logistics in support of Contested Logistics

## Capability Delivered

- Decreased individual Soldier combat load - allowing space for more ammo, water, medical supplies = **increased lethality**
- Decreased pallet positions on air and ground transport = **increased deployability** for rapid response units
- Sustains semi-independent small unit for 7-days without resupply

## Basic load for a 9-man squad for a 7- day dismounted, close combat mission



Increased readiness and lethality for close combat Soldiers and units



# Current Capabilities and Ongoing Arctic Related Efforts



# HISTORICAL EFFORT: MEAL COLD WEATHER (MCW)



## Purpose:

- The MCW is an operational ration designed to optimize operational effectiveness, improve logistics, and increase competition on missions in extreme cold weather.

## Product:

- 3 MCWs/day equal a day's worth of food
- Menu Variety: 12 menus, precooked, dehydrated entrees, spreads/crackers, cookies, sports bars, nuts, candy, powdered beverage & accessory pack
- Nutritional Data: Each menu provides approximately 1540 kCal (15% protein, 35% fat, and 50% carbohydrate).
- Heat source required to heat water/melt snow
- Shelf stable for 3+ years at 80°F (27°C)
- Weight: 1 lb (0.45 kg)/menu bag; 12 menu bags/case

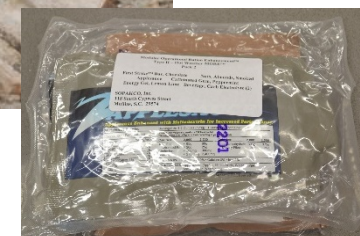


# MODULAR OPERATIONAL RATION ENHANCEMENT (MORE)



*The MORE enhancement packs augment daily operational rations in high altitude/cold weather (Type I) and hot weather (Type II) operational environments.*

- Added enhancement to individual rations (Meal-Ready to Eat, First Strike Ration, or Meal Cold Weather; NOT a replacement for these rations)
- Variety: 2 Types, calorically dense food enhancers, easy to consume & carry, contains carbohydrates, caffeine, vitamins, antioxidants, and amino acids
- Collaborated with US Army Research Institute of Environmental Medicine and DoD Nutrition Committee on determining nutritional needs in extreme environments
- Shelf stable for 3 years at 80°F (27°C)
- Nutritional Data: approximately 1000 calories per pack
- Weight: average weight 0.7 lb (0.32 kg)/pack



Come to the CFD table during morning break for a sample MORE pack



# OPTIMIZATION OF INDIVIDUAL RATIONS FOR EXTREME COLD WEATHER



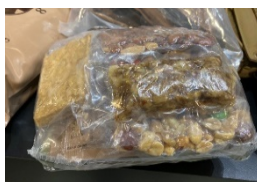
MSR XGK - II Squad Stove



Vacuum Microwave Drying Process



Meal, Cold Weather (MCW)



Horizontal Form Fill Seal (HFFS) Meal Bag



HFFS Packaging Process

**Purpose:** Develop, test and demonstrate new/improved individual stove system, individual ration components and packaging/configurations specifically designed for Extreme Cold Weather (ECW) which can be as low as -60F.

**Product(s):**

- Meal, Cold Weather (MCW) packaging/configuration improvements
- Individual Stove and associated equipment for Extreme Cold Weather (ISE) environments
- Caloric and nutritional requirements for ECW
- New dehydrated and semi-dehydrated ration components that include optimized nutrition for the newly packaged MCW

### Schedule

Major Tasks	FY23	FY24	FY25	FY26
Preliminary R&D (all sub efforts)	[Gantt bar with diamond 4]			
Test and evaluation (packaging)	[Gantt bar with diamond 5]			
Test and evaluation (ISE)	[Gantt bar with diamond 5]			
Test and evaluation (Ration optim.)	[Gantt bar with diamond 5]			
Final reports (all sub efforts)	[Gantt bar with diamond 6]			
Transition to 6.5	[Gantt bar]			
<b>TOTAL (\$K)</b> \$0	6.2, BE3			
	6.3, BE2			
	6.4, 610			
	6.5, 548			

**Payoff:**

For ECW environments: Reduce soldier load, reduce packaging (weight/volume), increase usability of rations, reduce time to feed and improve caloric/nutritional composition of ECW rations while incorporating ingredients which improve human performance.



# EXPEDITIONARY FIELD FEEDING EQUIPMENT SYSTEM



EFFES Kit (top) / Sanitation Concept (bottom)

EFFES pan frying & UGR-H&S (top) / User testing & cold weather kit (bottom)

## Schedule

Major Tasks	FY22	FY23	FY24
Design Prototypes	7		
Conduct Developmental Testing	7		
Conduct Limited User Evaluation (LUT)		7	
Analyze data/develop improvements		9	
Develop and transition documents			9

### Purpose:

Rapidly develop and deliver a suite of expeditionary group field-feeding equipment that will support the USMC EABO/Army contingency basing initiative with a scalable field feeding equipment system, including true multi-fuel capability, fully man-transportable, no external power, and capability to feed at the squad/platoon level twice per day with minimal user training.

### Product(s):

- Expeditionary Field Feeding Equipment System (EFFES)
- Cold weather upgrade kit for EFFES
- Performance-Based Contract Requirements (PCRs), Commercial Item Descriptions (CIDs), System Specification (SPEC), Technical Data Packages (TDPs).

### Payoff:

- Increased Warfighter nutritional intake
- Increased group field feeding capabilities in austere, expeditionary environments
- Reduction in logistical support requirements
- Reduced weight, cube and field waste

**...EMPOWERING,  
UNBURDENING, AND  
PROTECTING our  
Warfighters...To  
OUTPERFORM and  
OUTLAST any adversary,  
anytime, anywhere...**

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