

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

**May 2009**

<b>BUDGET ACTIVITY</b> <b>5 - System Development and Demonstration</b>		<b>PE NUMBER AND TITLE</b> <b>0604713A - Combat Feeding, Clothing, and Equipment</b>			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
548 MIL SUBSISTENCE SYS	2417	2491	2092	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** This project supports the development and demonstration and Non-Developmental Item (NDI) Commercial Off The Shelf (COTS) evaluation of combat feeding equipment to enhance soldier efficiency and survivability, and to reduce food service logistics requirements for all four services. The project supports multi-fuel, rapidly deployable field food service equipment initiatives and engineering and manufacturing development to improve equipment, enhance safety in food service, and decrease fuel and water requirements. This project develops critical enablers that support the Joint Future Capabilities and Joint Expeditionary mindset, by maintaining readiness through fielding and integrating new equipment; by enhancing the field soldier's well-being; and providing soldier usable equipment. They also reduce sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands on lift, the combat zone footprint, and costs for logistical support.

This PE/Project supports Field Feeding programs for all the services.

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**5 - System Development and Demonstration**

PE NUMBER AND TITLE  
**0604713A - Combat Feeding, Clothing, and Equipment**

<u><b>B. Program Change Summary</b></u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	2485	2499	2139
Current BES/President's Budget (FY 2010)	2417	2491	2092
Total Adjustments	-68	-8	-47
Congressional Program Reductions		-8	
Congressional Recissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-68		
Adjustments to Budget Years			-47

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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<b><u>Accomplishments/Planned Program:</u></b>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY08: Conducted test and evaluation of second iteration sink exhaust blower assembly and pump assembly for untreated gray water reuse. Finalized configuration for Food Sanitation Center (FSC) modernization kit.	164		
FY08: Conducted Production Quality Test (PQT) of the Thermal Fluid Containerized Kitchen (TFCK). Cancelled program based on position paper from the combat developer in August 08 due to an emerging requirement for removable appliance technology in new field kitchens.	760		
FY09: Analyze new closed combustion kitchen appliances and ventilation options for an improved Containerized Kitchen (CK) configuration for production and incorporation into RESET. Acquire new appliances and initiate prototype fabrication. FY 10: Complete fabrication, complete Developmental Testing (DT) and initiate Operational Testing (OT) and evaluation of the CK RESET kit prototype.		143	283
FY 10: Complete performance requirement on Water Cooling for Vehicular Mounted Units, solicit and award contract for prototype fabrication.			264
FY08: Analyzed new kitchen equipment and Mobile Kitchen Trailer (MKT) layout options and determined the optimum MKT Reset Kit concept. FY09: Solicit for, design, and build MKT Reset Kit prototype and commence developmental tests. FY10: Complete developmental and operational test and evaluation of the MKT Reset Kit prototype.	150	460	269
FY09: Complete Production Qualification Testing (PQT), Production Verification Testing (PVT) and Conduct User evaluation, complete Performance Specification, and transition Self Powered Tray Ration Heater (STRH) to procurement.		328	
FY08: Identified and tested commercial items that can be utilized to improve the quality of sanitation at forward deployed locations. Integrated selected components into a portable sanitation kit for forward deployments.	155		
FY08: Completed delivery of MRE (2009 Date of Pack (DOP)), performance based contract requirements to Defense Supply Center	159	146	176

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<p>Philadelphia (DSCP) for procurement (1Q08) including ration menus, assembly contract requirements, and component standardization documents. Completed field test/field evaluation of new ration components for Meals, Ready-to-Eat (MRE) XXX (2010 DOP) with 11th Air Defense Artillery Unit, Ft. Bliss, TX. Presented recommendations to Joint Service Operational Ration Forum (JSORF) in 2QFY08 for continuous improvement of ration components of MRE (2010 DOP) with fourteen new items approved for MRE XXX. Obtained Office of the Surgeon General (OTSG) approval. Performed cutting for industry/Other Government Agencies (OGA) at NSRDEC in 3QFY08 for 13 new MRE XXIX items. Initiated Integrated Product Team (IPT) for Nutritional Analysis and Labeling of Operational Rations with industry and OGA to provide assurance to the OTSG of AR40-25 nutritional compliance and ensure new label requirements are met. Conducted joint analytical study with USARIEM on selected MRE components to identify potential vitamin and mineral loss after storage to increase accuracy of nutritional data used to develop menus. FY09/10: Based on field test results, present recommendations to JSORF (2Q09/2Q10) for continued product improvement of ration components/packaging/ technologies for MRE. Finalize MRE procurement documents and initiate transition to DSCP. Obtain OTSG approval. Perform cuttings for industry/OGA to ensure consistent ration quality, understand PCR requirements, and resolve vendor/supplier issues. Identify new components based on user feedback, focus groups, emerging products and technologies, and known user requirements. Obtain and assemble selected new items for test. Conduct field testing/field evaluation of new ration components for MRE to improve quality, acceptability, nutrition, and expand variety.</p>				
<p>FY08: Provided extensive engineering support to production of FSR 1 which was awarded to SOPAKCO of Mullins, SC in 2QFY08 for contract minimum quantity of 50K cases. Planned field testing for new ration components for FSR (2) to enhance quality and expand variety. Over 50 components were evaluated at Ft. Benning during two classes of the 75th Ranger Regiment Pre-Ranger Course. The Soldiers were supplied with one FSR per day for 4 days. Final component documents and final assembly document were transitioned to DSCP for the next procurement of the MCW/LRP. FY09: Current FSR production and prototype menus will be evaluated; field test data will be analyzed by Consumer Research/Cognitive Science team. This will be combined with data generated from the Nutritionally Optimized First Strike Ration (NOFSR) ATO and the data from both evaluations will be used to design from 3 to 6 new FSR menus. Finalize FSR procurement documents and initiate transition to DSCP. Obtain OTSG approval for menus. Perform cuttings for industry/OGA. Identify new components and conduct field testing/evaluation of new ration components for MCW/LRP, and FSR (3). FY10: Post field test results, present recommendations to JSORF for continued product improvement of ration components/packaging/ technologies for MCW/LRP and, Survival Rations and FSR (3/4). Finalize procurement documents and initiate transition to DSCP. Obtain OTSG approval for menus. Perform cuttings for industry/OGA to ensure consistent ration quality, understand PCR requirements, and resolve vendor/supplier issues. Identify new components based on user feedback, focus groups, emerging products and technologies, and known user requirements. Obtain and assemble selected new items for test. Conduct field testing/field evaluation of new ration components for MCW/LRP, Survival Rations, and FSR (4/5).</p>	137	175		199
<p>FY08: Presented Unitized Group Ration - Heat and Serve (UGR-H&amp;S) (2010 DOP), UGR-A (2009 DOP), dehydrated Boil in Bag (BIB) menu item and other recommendations to JSORF for continuous improvement of ration components. Obtained OTSG approval of updated menus. Performed cuttings/production tests with industry/OGA to ensure consistent quality and producibility. Finalized all procurement documents and transitioned to DSCP (2Q08). Completed field testing of new ration components for UGR-H&amp;S, (UGR-A (2010 DOP) and UGR - Express (UGR-E) to enhance quality and expand variety. FY09/10: Present recommendations to JSORF for UGR-H&amp;S, UGR-A and UGR-E for continued product improvement. Obtain OTSG approval. Perform cuttings/production tests with industry/OGA to ensure consistent ration quality and producibility. Complete field testing of new ration components for UGR-H&amp;S, UGR-A and UGR-E to improve quality and expand variety. Finalize UGR procurement documents and initiate transition to DSCP.</p>	157	175		199
<p>FY 08: Collaborated with Naval Support Command (NAVSUP) to identify product segments for Navy Standard Core Menu (NSCM). Conducted and completed a preliminary waste study for all packaging waste associated with the NSCM; result will be used to identify</p>	107			

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)	May 2009
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<b>BUDGET ACTIVITY</b> <b>5 - System Development and Demonstration</b>	<b>PE NUMBER AND TITLE</b> <b>0604713A - Combat Feeding, Clothing, and Equipment</b>	<b>PROJECT</b> <b>548</b>
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impacts to environmental shipboard regulations. Worked with commercial suppliers, researched advanced foods, conducted sensory evaluation panels in support of future revisions to the NSCM. Prepared yearly product recommendations and supported NAVSUP field testing for new menu item introduced.			
FY08 Participated in future naval vessel Integrated Process Team (IPT) meetings and obtain updates on crew size, food service space and foot print allocation, weight restrictions/reductions and program costs. Evaluated information and design future galleys to meet the proposed naval requirements. Utilized modeling, simulation and prototyping to validate designs to support Navy requirements for reductions in total life cycle costs in construction, design and equipment arrangement. FY09: Quantify functionality of future galley process control system as an enabler to accommodate shipboard labor reductions to minimize equipment maintenance requirements through automated internal diagnostics. A prototype of a future galley system will be constructed utilizing automated food service equipment, process controls, and ergonomic designs. The galley will be prototyped for initial operational testing and evaluation for potential inclusion into future galley designs onboard naval platforms. Galley designs will have the capacity to integrate future technologies that will significantly accommodate the reduction of shipboard manning requirements through automated processes, equipment technological advancements, and equipment diagnostics/prognostics for total system integration. FY10: Coordinate with the Navy to determine future manning and feeding requirements; identify, research, and down select automation technologies; evaluate/test food service equipment; and integrate food service equipment into complete galleys that will support optimized crewing encompassing a total systems design and approach.	221	479	383
FY08: Evaluate and consolidate Air Force requirements in conjunction with user community for TriCon Kitchen. Develop performance based Statement of Work (SOW) based on service comments. FY09: Award a contract to design and develop a prototype modular all electric Air Force kitchen. Conduct developmental testing of the prototype TriCon kitchen. Initiate user testing with the Air Force. FY10: Upgrade prototypes based on testing results. Transition soft shelter and hard shelter Electronic Single Pallet Expeditionary Kitchen (ESPEK) prototypes to Air Force Services. Develop Technical Data Package to support future Air Force procurement.	166	236	173
FY08: Additional state-of-the art field feeding equipment for the BEAR-550(i) will be evaluated. Electrical systems, lighting fixtures, potable water and drainage systems will be developed and packaged to support the BEAR-550(i) as a modular system and field tested. FY09: The BEAR-550(f) system will be developed into a modular system that will be capable of supporting feeding requirements from 550 to 3300. The system will be designed to help reduce labor, provide modern, efficient equipment, increase the food production yield, and reduce life cycle cost. Initiate field testing with the Air Force. FY10: Provide complete BEAR-550 prototype field kitchen system to a Combat Training Sites to support Services Training efforts. Transition Technical Data Package (TDD) that includes design, layout, and recommended equipment items to Air Force Services Command and the BEAR PMO to procure complete kitchen systems.	241	240	146
FY09: Transition from 6.4. Complete upgrade of Navy Communication Zone (COMMZ) COMMZ prototype. Upgrade/correct deficiencies with the Navy Communication Zone (COMMZ) kitchen identified based on results of the in-house testing. Develop equipment replacement list and an enhancement package to include cost data and transition to the Navy to support potential future procurement. The Navy will use the information developed under this program to determine feasibility of entire COMMZ fleet upgrade.		40	
Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR)		69	
<b>Total</b>	<b>2417</b>	<b>2491</b>	<b>2092</b>

<b><u>B. Other Program Funding Summary</u></b>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost

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<b>5 - System Development and Demonstration</b>	<b>0604713A - Combat Feeding, Clothing, and Equipment</b>				<b>548</b>
RDTE, 0603747.610, Food Adv Dev	3634	3877	4208	Continuing	Continuing
OPA 3, M65803, Kitchen, Containerized, Field	121	105	96	Continuing	Continuing
OPA 3, M65802, Sanitation Center, Field Feeding	246	58	48	Continuing	Continuing

Comment:

**C. Acquisition Strategy** Complete System Development and Demonstration of food items and equipment for transition into competitive procurement contract. Complete advanced research efforts to support Engineer Change Proposals for previously developed equipment.

# ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
<b>5 - System Development and Demonstration</b>			<b>0604713A - Combat Feeding, Clothing, and Equipment</b>							<b>548</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Various combat feeding equipment, multi-fuel and water equipment	In-House	RDECOM, NSC	4040	1157	1-4Q	1230	1-4Q	1016	1-4Q		7443	
DOD Field Feeding Equipment	Contracts	Various	1654	330	1-4Q	325	1-4Q	284	1-4Q		2593	
Army Field Feeding Equipment Development	In-House	PM Force Sustainment Systems (FSS)	961	285	1-4Q	274	1-4Q	245	1-4Q		2005	
Subtotal:			6655	1772		1829		1545			12041	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	TECOM/OEC/ATC	1636	345		351		294	1-4Q		2626	
Subtotal:			1636	345		351		294			2626	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CFP Management	In-House	RDECOM	995	231	1-4Q	311	1-4Q	253	1-4Q		1790	
SBIR/STTR			84	69							153	
Subtotal:			1079	300		311		253			1943	

# ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>	PE NUMBER AND TITLE <b>0604713A - Combat Feeding, Clothing, and Equipment</b>					PROJECT <b>548</b>			
<b>Project Total Cost:</b>	<b>9370</b>	<b>2417</b>		<b>2491</b>		<b>2092</b>			<b>16610</b>

# Schedule Profile (R4 Exhibit)

May 2009

**BUDGET ACTIVITY**  
**5 - System Development and Demonstration**

**PE NUMBER AND TITLE**  
**0604713A - Combat Feeding, Clothing, and Equipment**

**PROJECT**  
**548**

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Complete design of the BEAR (f), conduct test of the BEAR (i) and (f) systems																																				
Provide BEAR-550 prototype field kitchen system to Combat Training Sites																																				
(TDD) items to AF Services Command and BEAR PMO to procure kitchen systems																																				
Design a prototype of a future galley system																																				
Identify, research, and down select automation technologies																																				
Transition galley food service systems to the Navy for procurement and fielding																																				
Transition Adv Marine Corps (MC) equipment and systems to MC for procurement.																																				
Transition Advanced Navy Equipment and Systems to Navy for procurement.																																				
Conduct operational test of individual ration components/packaging																																				
Transition individual rations/ration components documentation to DLA /services																																				
Conduct operational test of UGR components/packaging																																				
Transition UGR component/packaging documents to DSCP for procurement																																				

# Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY  
**5 - System Development and Demonstration**

PE NUMBER AND TITLE  
**0604713A - Combat Feeding, Clothing, and Equipment**

PROJECT  
**548**

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Conduct POT on TFCK	█																															
Conduct DT and user evaluation for MKT improvements					█																											
Conduct DT and OT on ADR P3I prototype refrigeration units.																	█															
(1) Update the ADR P3I TDP and transition to the Air Force to support production con																									▲							
Evaluate and consolidate AF requirements for TriCon Kitchen. Develop SOW.	█																															
(2) Award contract to design and develop a prototype modular all electric AF kitchen					▲																											
(3) Complete DT/User Testing on prototype TriCon kitchen with the Services.																									▲							
Transition soft and hard shelter ESPEK prototypes to AF services. Develop TDP.													█																			
(4) Conduct Milestone C and transition Battlefield Ice System to Procurement																													▲			
(5) Transition Solar Powered Refrigeration to Procurement																													▲			
(6) Transition Temp Controllers for Field Kitchen Appliances to Procurement																													▲			



## Schedule Detail (R4a Exhibit)

May 2009

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<b>5 - System Development and Demonstration</b>		<b>0604713A - Combat Feeding, Clothing, and Equipment</b>						<b>548</b>	
<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	
Complete design of the BEAR (f), conduct test of the BEAR (i) and (f) systems		1Q - 4Q	1Q - 2Q						
Provide BEAR-550 prototype field kitchen system to Combat Training Sites			1Q - 2Q						
(TDD) items to AF Services Command and BEAR PMO to procure kitchen systems			2Q - 4Q						
Design a prototype of a future galley system		1Q - 4Q							
Identify, research, and down select automotion technologies			1Q - 4Q						
Transition galley food service systems to the Navy for procurement and fielding				1Q - 4Q					
Transition Adv Marine Corps (MC) equipment and systems to MC for procurement.						1Q - 4Q	1Q - 4Q	1Q - 4Q	
Transition Advanced Navy Equipment and Systems to Navy for procurement.							1Q - 4Q	1Q - 4Q	
Conduct operational test of individual ration components/packaging	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Transition individual rations/ration components documentation to DLA /services	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Conduct operational test of UGR components/packaging	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Transition UGR component/packaging documents to DSCP for procurement	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Conduct PQT on TFCK	1Q - 3Q								
Conduct DT and user evaluation for MKT improvements		2Q - 4Q	1Q						
Conduct DT and OT on ADR P3I prototype refrigeration units.					3Q - 4Q	1Q - 2Q			

Update the ADR P3I TDP and transition to the Air Force to support production con						3Q - 4Q		
Evaluate and consolidate AF requirements for TriCon Kitchen. Develop SOW.	1Q - 4Q							
Award contract to design and develop a prototype modular all electric AF kitchen		1Q - 4Q						
Complete DT/User Testing on prototype TriCon kitchen with the Services.		4Q						
Transition soft and hard shelter ESPEK prototypes to AF services. Develop TDP.			1Q - 4Q					
Conduct Milestone C and transition Battlefield Ice System to Procurement					4Q			
Transition Solar Powered Refrigeration to Procurement				4Q				
Transition Temp Controllers for Field Kitchen Appliances to Procurement					4Q			
Test prototype Water Cooler for Mounted Vehicles				2Q - 3Q				
Conduct Milestone C on Battlefield Kitchen						4Q		
Navy Future Galley Modular and Seabasing Effort							1Q - 4Q	1Q - 4Q
Joint Service Refrigeration Systems Enhancement Effort							1Q - 4Q	1Q - 4Q
Transition Assault Kitchen Refrigeration System into production						4Q		
Conduct DT/OT on Waste to Energy Converter					1Q - 4Q	1Q		
Conduct Milestone C on Waste to Energy Converter						4Q		
Conduct DT/OT on CK Reset kit			3Q - 4Q					
Conduct PQT, PVT, and user evaluation on STRH		2Q - 4Q						