

225/555 Amy

DEPARTMENT OF THE ARMY
Executive Communications and Control

25 August 2003

M/T

3	VCSA	16 SEP 2003
2	DAS	
1	Dir, ECC	<i>2/08</i>
4	LTC E. Turner, 695-7922	<i>WT</i>

SUBJECT: Field Artillery Ammunition Support Vehicle (FAASV) Recapitalization Program Baseline (RPB) Approval

1. **TYPE ACTION:** SIGNATURE **ACTION AGENCY:** ASA(ALT)

2. **DISCUSSION:** ASA(ALT) MILDEP forwards **(Next Under)** a memorandum already signed by the ASA(ALT) for VCSA's signature **(Tab D)** ✓ approving the FAASV RPB **(Tab A)**.

- The PEO conducted a Decision Review of the FAASV Recapitalization Program and validated it pending approval of the RPB by the AAE and VCSA. The November 7, 2001 memorandum **(Tab B)** from the ASA(ALT) MILDEP tasked the PEO to comply with the RPB guidance. The March 7, 2003 memorandum **(Tab C)** from the CEAC validates the methodology used for the recapitalization cost estimate.

- The memo directs the PEO and PM to execute all rebuilds for the FAASV in accordance with the funding and schedule baselines documented in the RPB.

3. **COORDINATION:** OGC, DALO, PEO GCS, G8-FD, & TACOM.

4. **RECOMMENDATION:** VCSA sign memo at Tab D.

SIGNED: _____

SEE NOTE: _____

30805099

Completed/Executed 17 Sep 03 (331)

20 Aug 03
 20 Aug 03
 C. J.

Office, Assistant Secretary of the Army (ALT)
SUMMARY OF ACTION

TO: VCSA
THRU: AAE
THRU: ~~MIL DEP~~ [Signature] 8/19

ACTION OFFICER: LTC Steve Cummings
OFFICE SYMBOL: SAAL-SMS
PHONE NO: 604-7162
DATE/TIME: 07-010-2003

SUSPENSE DATE:
CONTROL NO.
 NA
 30801372

20 Aug 03
 C. J.

SUBJECT: Field Artillery Ammunition Support Vehicle (FAASV) Recapitalization Program Baseline (RPB) Approval

RECOMMENDATION: Army Acquisition Executive (AAE)/ Vice Chief of Staff, Army (VCSA) approve and sign the RPB.

SUMMARY OF ACTION: The Recapitalization Program Baseline (RPB) describes cost, schedule and performance objectives for the FAASV Recapitalization Plan approved by the VCSA on 19 Oct 01. The 7 November 01 letter from LTG Caldwell tasked PEO to comply with the RPB guidance and obtain the required coordination from the appropriate Major Subordinate Command along with the Army Cost and Economic Analysis Center (CEAC). PEO Ground Combat Systems (GCS) conducted a decision review of the FAASV Recapitalization Program and approved it pending final approval of the RPB by the AAE and VCSA.

Enclosure 1 – AAE/VCSA approval letter
 TAB A – RPB
 TAB B – MIL DEP Recapitalization Guidance Letter
 TAB C – PEO GCS approval letter and Army Cost and Economic Analysis Center (CEAC) validation letter

MILITARY DEPUTY ACTION

[Approved] [Recommend Approval]
 [Disapproved] [Recommended Disapproval]
 PSM Noted

Comments :

ASA (ALT) ACTION

Approved Disapproved
 PSM Noted

Comments:

COORDINATION

APPROVALS

CC	NCC	OFFICE	NAME	PHONE		APPR	DISAPPR	INITIAL	DATE
X		OGC	Mr. Roger Washington	697-1466	DEP				
X		DALO-DPL	Tom Van Weisenstein	614-1433	ASST DEP	✓		[Signature]	
X		PEO GCS	Mr. Steve Simons	DSN: 880-7129	DEP XO	✓		[Signature]	
X		SAAL-SI	Paul Barry	614-4540	DIR (SCS)				
X		SAAL-71	LTC Brian Shoop	614-3750	DIR (SAAL-SI)	✓		[Signature]	1 Aug 03
X		G8-FD	LTC Roy Perkins	692-6302					
X		TACOM	Mr. Larry Sagner	DSN: 786-6146					

CC = Concur NCC = Nonconcurr APPR = Approved DISAPP = Disapproved



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY
ACQUISITION LOGISTICS AND TECHNOLOGY
103 ARMY PENTAGON
WASHINGTON DC 20310-0103
18 AUG 2003



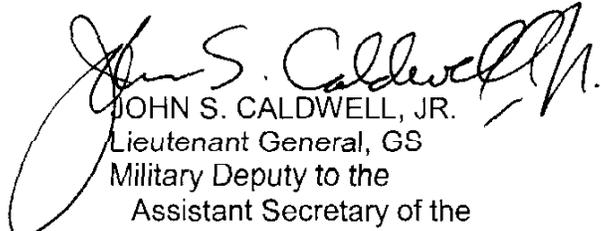
SAAL-SSI

MEMORANDUM THRU ARMY ACQUISITION EXECUTIVE

FOR VICE CHIEF OF STAFF, ARMY

SUBJECT Field Artillery Ammunition Support Vehicle (FAASV) Recapitalization
Program Baseline (RPB) Approval--ACTION MEMORANDUM

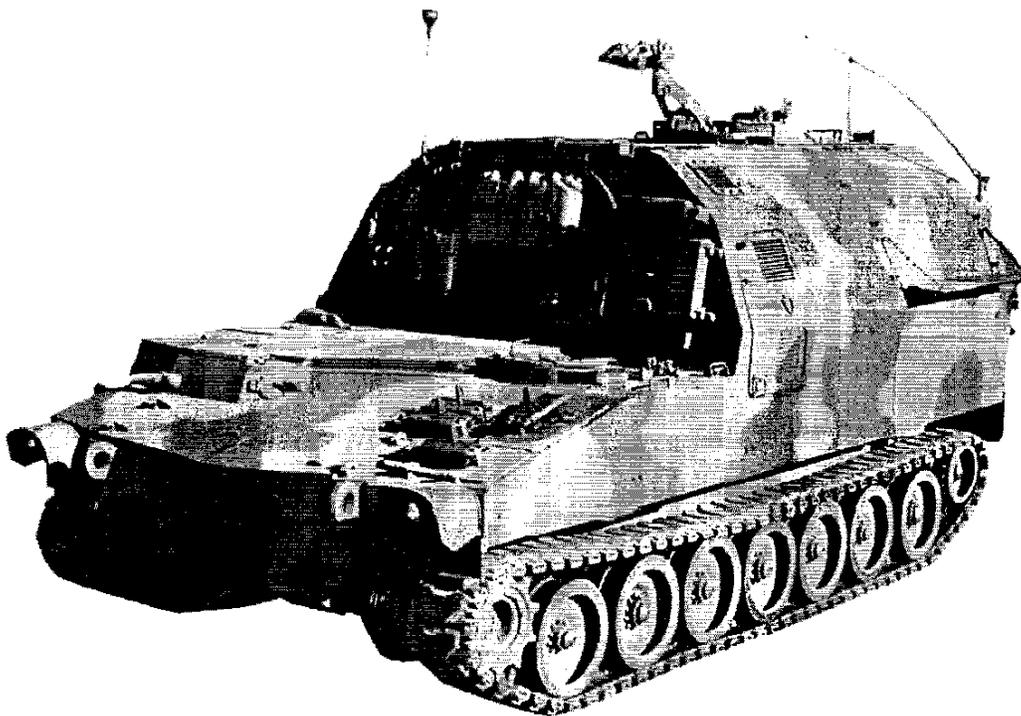
The enclosed subject memorandum is provided for both the Army Acquisition Executive and the Vice Chief of Staff, Army signatures. The FAASV RPB obtained the required documentation and coordination from the Army Staff.


JOHN S. CALDWELL, JR.
Lieutenant General, GS
Military Deputy to the
Assistant Secretary of the
Army (Acquisition, Logistics
and Technology)

Enclosure

M992A2 FIELD ARTILLERY AMMUNITION SUPPORT VEHICLE (FAASV)

Recapitalization Program Baseline



**“Rebuild and Enhance the Legacy Force to Ensure
Operational Readiness”**

28 July 2003

RECAPITALIZATION PROGRAM BASELINE TABLE OF CONTENTS

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1. RECAPITALIZATION PROGRAM BASELINE DESCRIPTION

On 28 September 2001 the Vice Chief of Staff, United States Army (VCSA) approved a Recapitalization (RECAP) program for the M992A2 FAASV. The elements of this program are:

- FOCUSED RECAP of 126 M992A2 FAASVs. This number represents 82 Combat Vehicle Evaluated (CVE) M992A2 FAASVs qualified for overhaul since FY98 plus eleven (11) more FAASVs projected to qualify for CVE per year (FY03 - FY06) for a total of 126 vehicles. This program and quantity is intended to address the current issue of FAASV shortages due to the high rate of CVE qualification.
- FAASV RECAP Scope of Work (SOW) will include application of separately funded Wheeled Track Combat Vehicles (WTCV) system improvement upgrades to 109 of the 126 FAASVs undergoing RECAP at Anniston Army Depot (ANAD) during FY04-06. The remaining 818 FAASVs in the inventory will have the system improvements applied by Modification Work Order (MWO) fielding teams (applied retrofit in the field) during FY04-06 separate from RECAP.
- Decision point in FY06 to re-evaluate the condition of the FAASV fleet and determine additional RECAP requirements.

FOCUSED RECAP

Rebuilding and upgrading CVE/overhaul qualified systems to the extent-determined necessary through detailed engineering, logistics and economic analysis.

M992A2 FAASV RECAP consists of rebuilding the vehicle chassis and overhauling or replacing all major components. In the process, the vehicle will be returned to a near-zero hour/mile condition and brought to the latest production configuration.

Rebuild will involve the following:

PER VEHICLE COMPONENT Depot Maintenance Work Requirement (DMWR)

- Vehicle Operational Pre-shop Inspection (Condition Is Documented)
- Vehicle Disassembly
- Component Operational Pre-shop Test and Inspection (Acceptable Condition May Preclude Any Further Repair/replacement)
- Determination of Serviceability verses Repair verses Replacement
- Paint Strip
- Inspection and Repair Hull & Components as Necessary (DMWR) Identifies Allowable Wear Tolerances/condition IAW Reliability Centered Maintenance
- Component Test
- Incorporate Selected Upgrade Engineering Change Proposals (ECPs)/MWOs
- Vehicle Assembly
- Repaint
- Acceptance Test
- Final Vehicle Is M992A2, Condition Code "A"

The following major components will be completely overhauled or replaced:

(See Appendix A, page 15 for source and cost data)

- Hull
- Engine
- Transmission
- Transfer
- Final Drive
- Suspension
- Track
- Automatic Fire Extinguisher System (AFES)
- VIC-3 Intercom System
- Personnel Heater
- Fan Personnel, Ventilation
- Bilge Pump
- Fan, Vaneaxile
- Drive Assembly, Fan

SYSTEM IMPROVEMENT PLAN UPGRADES

- **10 KW APU:** Up-powered Auxilliary Power Unit (APU) Increases power capability from the existing 5KW generator to 10KW needed to support both the FAASV and Paladin electrical loads. Also provides significant sound reduction, supports digitization and provides Operating and Support (O&S) cost savings with a modern reliable system.
- **MACS:** Modular Artillery Charges System (MACS): Integrates the stowage and transfer requirements for the M231 & M232 MACS and the XM982 projectile into the FAASV. Changes support a MACS fielding as early as FY04. Updates capability of the vehicle to meet the needs on the battlefield.
- **CFC Elimination:** Chlorofluorocarbon (CFC) elimination is phase II Halon replacement and will replace the existing Halon for the FAASV engine compartment with an environmentally friendly alternative. Department of the Army (DA) Policy requires replacement of Halon charged fire suppression systems to prevent ozone depletion. The replacement agent will be significantly less expensive resulting in O&S cost savings.
- **DAGR:** Defense Advanced Global Positioning System Receiver (DAGR) integration provides required mounting and power integration for the DAGR, which will replace Precision Lightweight Global Positioning System Receiver (PLGR) in support of digitization.
- **Battery Guard:** Battery guard automatically disconnects battery power from vehicle electrical loads at a voltage level that will allow re-starting of the vehicle. Prevention of total discharge of the batteries will increase battery life and result in O&S cost savings.

RECAP SOW, DMWR AND NMWR DEVELOPMENT

Engineering and logistics analysis were conducted during FY02 as a Sustainment System Technical Support (SSTS) effort to define RECAP level of repair versus replacement and was used to support final RECAP SOW development. The process compared the extent of repair, expected component life and costs of current programs versus proposed RECAP criteria. Changes to existing procedures were determined based on cost versus component life. The results of this analysis defined the RECAP SOW and form the basis for the vehicle DMWR and component National Maintenance Work Requirement (NMWRs). The analysis and determination of RECAP criteria was conducted by a team, which consists of contractors, TACOM, PM Paladin/FAASV, DLA, and ANAD. Due to the limited time prior to program start, a teaming effort was critical to insure sufficient criteria has been developed to support a SOW in FY03. The first vehicle inducted in FY03 was a RECAP pilot that was used to verify the RECAP process. The final vehicle DMWR and component NMWRs were completed at the conclusion of the successful pilot.

PREPOSITIONING INDUCTION ASSETS

A total of 23 CVE qualified FAASVs requiring overhaul were at ANAD. During FY02, PM Paladin/FAASV, the TACOM Item Manager and HQ DCSPRO coordinated to redistribute and return of 9 additional FAASVs to ANAD to serve as RECAP inductions. The 32 "seed" vehicles are a combination of Operational Readiness Floats (ORFs) and FAASVs in the process of being redistributed. No field artillery units are shorted vehicles to support the FAASV RECAP program.

FIELDING RECAP FAASVS

The VCSA approved FAASV Focused RECAP program was established as a one for one replacement for CVE/overhaul FAASVs and therefore vehicles will not be fielded as unit sets. The Total Package Fielding (TPF) provided at the time of handoff will be tools, technical manuals, training and Associated Support List (ASL) items impacted or changed as a result of the RECAP program.

TOP 10 COST DRIVERS

The following table summarizes the elements which address the top 10 cost and readiness drivers (source and cost data) is listed in Appendix A. The vehicle program costs are further explained in section 2, funding.

RECAP Element	Cost	Benefits
Rebuild Cost per M992A2 (OMA)	.387	O&S, RMS, Service life
Component overhaul		
Engine		O&S, RMS, Service life
Track Shoe		O&S, RMS, Service life
Hull		O&S, RMS, Service life
Fire Extinguisher		O&S, RMS, Service life
Sensor Assembly		O&S, RMS, Service life
Engine Generator		O&S, RMS, Service life
Transmission		O&S, RMS, Service life
Thermal Resistor		O&S, RMS, Service life
Unit OMA Cost (FY02) per vehicle	\$.387M	
Selected Upgrades (PAA) per M992A2	.040	
10 KW APU		RMS, Service life
MACS		RMS, Service life
CFC Elimination		Capability, Service life
DAGR		Capability, RMS
Battery Guard		RMS, Service life
Unit PAA Cost (FY02) per vehicle	\$.040M	

2. RECAPITALIZATION PROGRAM BASELINE FUNDING

OMA FUNDING

Initially, a full FAASV RECAP was estimated to be \$.581M, based on the past depot repair program Unit Funded Cost (UFC) of \$.387M obtained from the Maintenance Data Management System (MDMS) and adjusted with a factor of 150%. The 150% factor was guidance provided by AMC to account for the estimated differences in the RECAP SOW verses the standard depot repair/overhaul. During the RECAP Council of Colonel (COC) and General Officer's Working Group (GOWG) review process, programs were asked to develop various cost and quantity options. FAASV Option 1A, which was eventually selected by the VCSA, included the historical UFC of \$.387M without the 150% adjustment factor. Preliminary analysis indicated that a FAASV RECAP UFC of \$.387M is executable.

Projected hardware (parts and materials) were estimated at \$.213M (see Appendix A). Historically, labor requirements for FAASV overhaul has been in the 2000 man-hour or \$.2M (2000 hours x \$100/hour) range. Based on the man-hours already included in the overhaul of the first five items in Appendix A (hull, main engine, transmission, transfer, and final drive), and the remaining \$.174M (\$.387-\$.213=\$.174), the FAASV RECAP program is adequately funded for labor. The actual RECAP cost per unit was confirmed during the completion of the SSTS engineering and logistics analysis (SOW development), coordination with the depot and completion of the M992A2 pilot RECAP in FY03.

The FAASV RECAP SSTS requirement in FY02 and FY03 was to conduct the engineering, logistic and testing to support the program that started in FY03. The FY02 evaluated existing overhaul baseline criteria against the zero hour/mile goal to establish the level of repair, define quantities, mandatory hardware, long lead time hardware, documentation for NMWR development or changes to existing DMWRs and ultimately definition of the FAASV focused RECAP SOW. The analysis conducted during determination of level of repair documented expected improvement to component/vehicle life versus cost. This data was then used to identify cost versus benefit of the overall FAASV RECAP. The SSTS funding requirement was based on comparisons and analysis of the M9 ACE, M88A1 data plus information provided by industry through requests for Rough Order of Magnitudes (ROMs). The FY02 SSTS funding (\$1.94M) funded logistics and engineering analysis to allow development of the draft scope of work and NMWRs in FY02. The FY03 SSTS funding (\$.50M) addressed the changes identified during the FY03 Pilot and finalized the SOW and NMWRs.

Other Operating Maintenance Army (OMA) expenses include the Standard Depot Operations (SDO) and Secondary Destination Transportation (SDT). The SDO funding is included in MDEP RR17. The SDT has been forecasted and will be tracked in each appropriate funding cycle to support the FAASV RECAP program.

Associated Support Items of Equipment (ASIOE) costs are not included in the M992A2 FAASV RECAP program baseline.

The RECAP FAASV is a one for one exchange replacing CVE candidates with a Recapped FAASV verses unit set fielding. In the event HQ DCSPRO/DCSOPS directs RECAP FAASV fielding to support unit set fielding, funding for TPF support will be forecasted and provided separately from the FAASV RECAP program.

APA FUNDING

The Army Procurement Appropriation (APA) portion of the FAASV RECAP program, as shown in the spreadsheet below consists of WTCV funding spread over FY04-06. These costs include selected upgrade MWO Kits for 109 M992A2s (to be applied concurrent with RECAP at ANAD) plus the selected upgrade MWOs to be applied to the remaining 818 fielded M992A2s by retrofit teams.

M992A2 FAASV RECAP Funding

Required	FY02	FY03	FY04	FY05	FY06	FY07	FY03-07 POM	EPP	Total POM & EPP
RDTE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PA Selected Upgrades WTCV									
Weapon Systems	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MWOs Recap ANAD**	\$0.00	\$1.36	\$1.44	\$1.56	\$0.00	\$0.00	\$4.36	\$0.00	\$4.36
MWOs Retrofit Field**	\$0.00	\$5.52	\$9.32	\$9.20	\$8.68	\$0.00	\$32.72	\$0.00	\$32.72
Training Devices	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Initial Spares	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
STS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

OMA									
Recapitalization RR17	\$0.00	\$6.63	\$13.16	\$13.96	\$15.09	\$0.00	\$48.84	\$0.00	\$48.84
SSTS Recap	\$1.94	\$0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$2.44	\$0.00	\$2.44
COSIS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SDO	\$0.07	\$0.15	\$0.15	\$0.15	\$0.15	\$0.00	\$0.67	\$0.00	\$0.67
SDT	\$0.00	\$0.04	\$0.16	\$0.16	\$0.19	\$0.04	\$0.59	\$0.00	\$0.59
PPSS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Initial Spares	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Support Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Training Devices	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Other									
Training	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Manning	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Munitions	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CLS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Installation Support Costs	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Total Funding Required	\$2.01	\$14.20	\$24.23	\$25.03	\$24.11	\$0.04	\$89.62	\$0.00	\$89.62
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Quantities									
PA (MWOs at ANAD)	0	0	34	36	39	0	109	0	109
PA (MWOs by Retrofit)	0	0	138	233	230	217	818	0	818
OMA (Depot Recap)	0	17	34	36	39	0	126	0	126

****PA funding for selective upgrades is identified for planning purposes only. The amount identified represents the FY when the estimated cost of 40K per vehicle for application and hardware will be applied.**

3. RECAPITALIZATION PROGRAM BASELINE SCHEDULE

Throughout FY02, representatives from TACOM, ANAD, PM Paladin/FAASV and DLA conducted sessions to gather and review existing FAASV overhaul consumption, O&S and readiness driver data to build the FAASV overhaul baseline. This data was evaluated by engineering and logistics to determine the focused RECAP level/extent of repair. The engineering and logistics evaluations were accomplished as part of SSTS efforts in FY02. The FY02 effort evaluated existing overhaul baseline criteria against the zero hour/mile goal to establish the level of repair, define quantities, mandatory hardware, long lead time hardware, documentation for NMWR development or changes to existing DMWRs and ultimately definition of the FAASV focused RECAP SOW. The analysis conducted during determination of level of repair documented expected improvement to component/vehicle life versus cost. This data was then used to identify cost versus benefit of the overall FAASV RECAP.

1st QTR FY03, ANAD inducted the pilot M992A2 for the FY03 focused RECAP program. The pilot vehicle overhaul and test was completed by April 03. The remaining 16 CVE qualified FAASVs are now being dovetailed into the end of the Paladin production line. Production cycle time is approximately 90 days. The continuous Paladin/FAASV production line will maintain the experience level on the production line. First vehicles will be completed in late FY03. We plan to induct an additional 34 FAASVs in FY04, 36 FAASVs in FY05, and 39 FAASVs in FY06. The planned induction and fielding schedule is:

	<u>Induction</u>	<u>Fielding</u>
FY03	17	5
FY04	34	34
FY05	36	36
FY06	39	39
FY07		12

Distribution of Recapped FAASVs is forecasted as follows:

Counterattack Corps						Active Component		
III CORPS 3 ACR	III CORPS ARTY	1 CAV	3 ID	4 ID	NG	1AD	1 ID	2 ID
3	23	41	12	16	0	8	8	15

SCHEDULE FOR SELECTED UPGRADE TO THE BALANCE OF THE FLEET

The five selected upgrades will also be applied to the remaining balance of 818 FAASVs in the field between FY04 and FY06 via MWO. Therefore, all FAASVs will receive the selected upgrades either during RECAP, in the field as a retrofit, or through a combination. The intent is to complete the application of all selected upgrades by FY06.

4. RECAPITALIZATION PROGRAM BASELINE PERFORMANCE

The M992A2 FAASV RECAP program has four metrics: reduce fleet age, improve durability, reduce annual O&S costs, and enhance vehicle performance and maintainability.

A. METRIC – REDUCE FLEET AGE

- **Objective** – The FAASV RECAP program is intended to address the shortage of FAASVs in the fleet due to the high CVE qualification. In FY02, the fleet is 12 years old. Without any RECAP program, the fleet age in FY10 will be 20 years. The RECAP program will result in an improved fleet age of 17.4 years by FY10.
- **Data Source** – Data source is simply the record of how many FAASV's are Recapped each year. Information will be readily available from PM Paladin/FAASV, TACOM CBU, or ANAD.
- **Baseline Formula** – The following table shows the fleet age per year under the planned RECAP program. The baseline age of the fleet at the end of FY01 is twelve years old. This fleet age is derived from the average age of each vehicle based on its DD250 production acceptance date. The approved RECAP program is shown in row 5.

	A	B	C	D	E	F	G	H	I	J	K	L
1		FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12
2	M992A2 FAASV – new fieldings	0	0	0	0	0	0	0	0	0	0	0
3	Existing fleet density	927	927	927	927	927	927	927	927	927	927	927
4	Average fleet age without RECAP	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0
5	Annual RECAP quantity	0	17	34	36	39	0	0	0	0	0	0
6	Cumulative RECAP quantity	0	17	51	87	126	126	126	126	126	126	126
7	Average fleet age with RECAP	12.0	12.8	13.2	13.7	14.0	15.0	16.0	17.0	18.0	19.0	20.0

Formulas for each year in row 7 are:

$$\text{FY02} = (B5*0 + (927 - B6)*12) / 927$$

$$\text{FY03} = (C5*0 + B5*1 + (927 - C6)*13) / 927$$

$$\text{FY04} = (D5*0 + C5*1 + B5*2 + (927 - D6)*14) / 927$$

$$\text{FY05} = (E5*0 + D5*1 + C5*2 + B5*3 + (927 - E6)*15) / 927$$

$$\text{FY06} = (F5*0 + E5*1 + D5*2 + C5*3 + B5*4 + (927 - F6)*16) / 927$$

$$\text{FY07} = (G5*0 + F5*1 + E5*2 + D5*3 + C5*4 + B5*5 + (927 - G6)*17) / 927$$

$$\text{FY08} = (H5*0 + G5*1 + F5*2 + E5*3 + D5*4 + C5*5 + B5*6 + (927 - H6)*18) / 927$$

$$\text{FY09} = (I5*0 + H5*1 + G5*2 + F5*3 + E5*4 + D5*5 + C5*6 + B5*7 + (927 - I6)*19) / 927$$

$$FY10 = (J5*0+I5*1+H5*2+G5*3+F5*4+E5*5+D5*6+C5*7+B5*8+ (927-J6)*20)/927$$

$$FY11 = (K5*0+J5*1+I5*2+H5*3+G5*4+F5*5+E5*6+D5*7+C5*8+B5*9+ (927-K6)*21)/927$$

$$FY12 = (L5*0+K5*1+J5*2+I5*3+H5*4+G5*5+F5*6+E5*7+D5*8+C5*9+B5*10+ (927-L6)*22)/927$$

- **Performance Measurement** – Each fiscal year has a planned RECAP quantity. At the end of each year’s program we will determine how many vehicles in fact were Recapped. In reality, such information will be available early in the year, once the unit-funded cost is determined. If the actual quantity Recapped differs from the plan, the expected fleet age in FY12 will be recalculated.

B. METRIC – MAXIMIZE AVAILABILITY OF EXISTING VEHICLES IN THE FAASV FLEET

- **Objective** – As the age of the FAASV fleet increases, the rate of CVE qualified vehicles has also increased. The current CVE qualified rate has resulted in FAASVs taken out of service resulting in shortages within field artillery units. As of the end of FY01, there were 71 vehicles qualified through the CVE process for depot overhaul or RECAP. This figure constitutes 8% of the worldwide fleet of 927 FAASVs. The FAASV fleet has minimal ORFs to replace CVE qualified vehicles so the goal is to maintain no more than 0% of the fleet as CVE qualified at any given time to prevent vehicle shortages. At the end of the RECAP Program in FY06, there will be zero CVE qualified FAASVs, however, based on projections of 11 CVE qualified vehicles per year, the CVE rate will again start increasing after FY06.
- **Data Source** – TACOM sponsored Combat Vehicle Evaluation (CVE) teams inspect vehicles annually. If the team qualifies a vehicle it is deemed to be CVE qualified. TACOM Commodity Business Unit (CBU) maintains records by vehicle serial number of all these vehicles qualified each year. Based on unit readiness rates, force priorities, and depot funding and schedules, PM Paladin/FAASV will determine which vehicles will be sent for RECAP to insure high priority shortages are filled first.
- **Baseline Formula** – The intent is to track the percentage of CVE qualified vehicles (existing and projected), prioritize units, manage the exchange with the completed RECAP FAASVs and manage the RECAP program on the incoming vehicles. If the schedule is maintained and the quantity qualified is within projections, the quantity of existing CVEs will be within the 0% goal by the end of FY06.

	FY02	FY03	FY04	FY05	FY06	FY07
Existing CVE	71	82	76	53	28	0
Projected CVE	11	11	11	11	11	11
RECAP QTY		17	34	36	39	0
% CVE	8.8%	8.2%	5.7%	3.0%	0%	1.2%

- **Performance Measurement** – At the end of each fiscal year, we will review the CVE vehicles qualified and completed and document the results. The data will be entered into each category of the above table, enabling us to calculate the percent CVE.

C. Metric – Reduce Annual O&S Costs

- **Objective** – As calculated from the table below, the average cost per mile to operate and maintain the top 10 FAASV cost drivers from FY97 through FY00 was \$10.52. The objective is to lower this cost to \$8.86 (based on FY00 dollars).
- **Data Source** – The web-based Operating and Support Management Information System (OSMIS) database, Sample Data Collection (SDC), limited to Fort Hood, Fort Stewart, and ANAD is the data source. The table below is derived from these sources.
- **Baseline Formula** – The FAASV RECAP program will be monitored by U.S. Army Material Systems Analysis Activity (AMSAA) using OSMIS, SDC, and Automatic Identification Technologies (AIT) devices to track the objective cost per mile goal and the projected RECAP Mean Time Between Replacement rates by hours or miles. The monitoring of cost per mile and Mean Time Between Replacements will be used to verify actual life and cost for RECAP components. Due to the method of fielding (individual vehicle verses unit sets), location, unit, and serial number information will be coordinated between PM Paladin/FAASV, AMSAA and the Business Process Improvement Directorate (BPI) to document actual O&S costs for RECAP verses non-RECAP vehicles.

FY97-00 Top Ten Cost Drivers

Component	National Stock Number	Current Cost per Mile	Projected Recapped Cost per Mile	Projected Recapped Measurement MMBR/MHBR*
Engine Diesel	2815-01-335-4579	\$2.95	\$2.33	1200 MHBR
Track Shoe	2530-01-346-9233	\$1.76	\$1.76	5,000 MMBR
Engine Generator	2920-01-288-0497	\$1.12	\$0.89	200 MHBR
Track Pad	2530-01-353-7500	\$1.03	\$1.03	1,000 MMBR
7lb AFES Bottle	4210-01-269-8376	\$0.82	\$0.64	2,500 MMBR
Sensor Assembly	5905-01-210-0301	\$0.68	\$0.53	2,500 MMBR
APU Starter/Generator	2920-00-795-6627	\$0.60	\$0.48	200 MHBR
Transmission	2520-01-413-1885	\$0.53	\$0.42	15,000 MMBR
Thermal Resistor	5905-01-208-3393	\$0.51	\$0.40	2,000 MMBR
APU Engine, Onan (being replaced)	2815-01-175-7342	\$0.49	N/A	N/A
APU Engine, Hatz (replacing Onan for Recap)	2815-01-446-3500	N/A	\$0.38	200 MHBR
TOTALS		\$10.52 per Mile	\$8.86 per Mile	

* MMBR - Mean Miles Between Replacements, MHBR - Mean Hours Between Replacements.

- **Performance Measurement** – OSMIS data for each fiscal year are usually available about six months into the next fiscal year. As each year's database is posted, PM Paladin/FAASV will run the above query and calculate the annual average cost per hour.

5. RECAPITALIZATION INTERFACES

DEPOT AND INDUSTRY PARTNERSHIPS

There are no known partnerships for actual RECAP of the M992A2 FAASV at this time. Vehicle rebuilds and component overhaul is 100% organic to ANAD. The selected upgrades involve separate contracts for hardware manufacture and delivery.

CONTRACT AGREEMENTS:

There is not a formal contract for actual RECAP of the M992A2 FAASV. TACOM receives the required OMA dollars, and based on a negotiated SOW and the unit-funded cost, PM Paladin/FAASV will fund ANAD on an annual basis for a given program through the Maintenance Data Management System. The program SOW and required funding is renegotiated as required.

PM Paladin/FAASV has established contract task orders with DUCOM/VSE Corporation, Detroit Diesel, Allison Transmission and Pacific Scientific/HTL to conduct the engineering and logistics analysis necessary to develop the FAASV RECAP criteria and to write the vehicle DMWR and component NMWRs for the RECAP effort. The following table lists these documents:

M992A2 FAASV, End Item	DMWR
Engine	NMWR
Transmission/Transfer Case	NMWR
Final Drive	NMWR
APU Engine	NMWR
APU Generator	NMWR
Main Engine Generator	NMWR
Main Engine Starter	NMWR
Bilge Pump	NMWR
Personnel Heater	NMWR
Fan Personnel	NMWR

The contractor for the selected upgrade hardware, and application outside of RECAP, is to be determined. PM Paladin/FAASV will initiate contracting for both the hardware and applications separate from RECAP in FY02 through FY06.



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
ACQUISITION LOGISTICS AND TECHNOLOGY
103 ARMY PENTAGON
WASHINGTON DC 20310-0103

07 NOV 2001

REPLY TO
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SAAL-SI

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Recapitalization Program Baseline

This memorandum sets forth guidance that should be followed to document and track the Army's Recapitalization effort. Enclosed is the template that will be used to develop and execute the individual systems Recapitalization Program Baseline. The Program/Project/Product Manager of the systems that have already been approved by the Army Acquisition Executive/Vice Chief of Staff, Army (AAE/VCSA) will be afforded 90 days from the date of this document to follow and complete the Recapitalization approval process laid out in this Recapitalization Program Baseline guidance. Future candidate systems that have not been seen by the AAE/VCSA will be afforded 60 days after an option is adopted, to complete the process of creating a baseline. All recapitalization systems will obtain validation, within afforded time frames, of the Baseline Cost Data, Cost Benefit Analysis and Trade Off Analysis from the Cost and Economic Analysis Center.

The point of contact for this matter is COL Jim Wells, DSN: 224-3993 or 703-614-3993.

JOHN S. CALDWELL, JR.
Lieutenant General, GS
Military Deputy to the
Assistant Secretary of the
Army (Acquisition, Logistics
and Technology)

Enclosure

DISTRIBUTION:
ASSISTANT SECRETARY OF THE ARMY (ACQUISITION, LOGISTICS AND
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ASSISTANT SECRETARY OF THE ARMY (FINANCIAL MANAGEMENT
AND COMPTROLLER), ATTN: SAFM-BUI



DEPARTMENT OF THE ARMY
PROGRAM EXECUTIVE OFFICE
GROUND COMBAT SYSTEMS
WARREN, MI 48397-5000

REPLY TO
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SFAE-GCS-BV-P

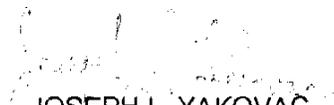
MEMORANDUM FOR

ARMY ACQUISITION EXECUTIVE, ASSISTANT SECRETARY OF THE ARMY
(ACQUISITION, LOGISTICS AND TECHNOLOGY), ATTN: SAAL-RI, 103 ARMY
PENTAGON, WASHINGTON, DC 20310-0103

VICE CHIEF OF STAFF, UNITED STATES ARMY, 201 ARMY PENTAGON,
WASHINGTON, DC 20310-0201

SUBJECT: FAASV Recapitalization Program Baseline (RPB) and Recapitalization
Decision Review

1. In accordance with the Army Recapitalization Management Policy dated 11 April 2001 and the FAASV RPB guidance dated 7 November 2001, I have conducted a Decision Review of the FAASV Recapitalization Program and approved its entry into Phase I – Program Definition and Phase II – Production/Fielding, pending final approval of the RPB by the Army Acquisition Executive/Vice Chief of Staff, Army (VCSA).
2. On 28 September 2001, AAE/VCSA approved the General Officer Working Group recommendation of a FAASV Recapitalization of 126 M992A2 FAASV with focused RECAP.
3. I have reviewed and concur with the following documents: 1) The FAASV RPB (TAB A) and 2) FAASV Recapitalization Program Baseline (RPB) Approval Letter (TAB B).


JOSEPH L. YAKOVAC
Major General, USA
Program Executive Officer,
Ground Combat Systems

Enclosures



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DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
FINANCIAL MANAGEMENT AND CONTROLLER
109 ARMY PENTAGON
WASHINGTON, DC 20310-0109

MAR 28 2003

SAFM-CE

MEMORANDUM FOR THE PROGRAM EXECUTIVE OFFICER, COMBAT SUPPORT &
COMBAT SERVICE SUPPORT (SFAE-GCS-BV-L), WARREN, MI 48397-5000

SUBJECT: M992A2 Field Artillery Ammunition support Vehicle
(FAASV) Recapitalization Baseline Cost Sufficiency Review

We have reviewed the costs provided for the FAASV Recapitalization Baseline (see attached table). We performed an Independent Cost Estimate to validate the FAASV program baseline (OMA only) and reviewed the methodology. This program focused on the recapitalization of 126 FAASVs. The transportation costs from the original locations to the depot were not included in the Baseline Cost Estimate. We estimated these transportation costs to be up to \$680,000. The Assistant Secretary of the Army Acquisition, Logistics and Technology (ASA(ALT)) needs to determine if these transportation costs have been funded. The submission provided a reasonable estimate of the total contract cost and was consistent with our independent cost estimate.

Per our agreement, ASA(ALT) will examine the potential savings of the program and any potential supportability issues in Phase II.

The SAFM-CES point of contact is Ms. Joanna Chan, (703) 692-7397 or DSN 222-7397.

Robert W. Young

Deputy Assistant Secretary of the Army
(Cost and Economics)

Enclosures

CF:

PM-FAASV

ASAALT, ATTN: SAAL-SI

APA FUNDING

The Army Procurement Appropriation (APA) portion of the FAASV RECAP program, as shown in the spreadsheet below consists of WTCV funding spread over FY04-06. These costs include selected upgrade MWO Kits for 109 M992A2s (to be applied concurrent with RECAP at ANAD) plus the selected upgrade MWOs to be applied to the remaining 818 fielded M992A2s by retrofit teams.

M992A2 FAASV RECAP Funding

Required	FY02	FY03	FY04	FY05	FY06	FY07	FY03-07 POM	EPP	Total POM & EPP
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RDTE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PA Selected Upgrades WTCV									
Weapon Systems	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Training Devices	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Initial Spares	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
STS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

OMA									
Recapitalization RR17	\$0.00	\$0.03	\$13.16	\$13.96	\$15.00	\$0.00	\$48.84	\$0.00	\$48.84
SSTS Recap	\$1.94	\$0.50	\$0.00	\$0.00	\$0.00	\$0.00	\$2.44	\$0.00	\$2.44
COSIS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SDO	\$0.07	\$0.15	\$0.15	\$0.15	\$0.15	\$0.00	\$0.67	\$0.00	\$0.67
SDT	\$0.00	\$0.04	\$0.16	\$0.16	\$0.19	\$0.04	\$0.59	\$0.00	\$0.59
PPSS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Initial Spares	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Support Equipment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Training Devices	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Other									
Training	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Manning	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Munitions	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CLS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Installation Support Costs	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Total Funding Required	\$2.01	\$14.20	\$24.23	\$25.03	\$24.11	\$0.04	\$89.62	\$0.00	\$89.62
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Quantities									
PA (MWOs at ANAD)	0	0	34	36	39	0	109	0	109
PA (MWOs by Retrofit)	0	0	138	233	230	217	818	0	818
OMA (Depot Recap)	0	17	34	36	39	0	126	0	126

APA funding for selective upgrades is identified for planning purposes only. The amount identified represents the FY when the estimated cost of 40K per vehicle for application and hardware will be applied.



DEPARTMENT OF THE ARMY
WASHINGTON, DC 20310



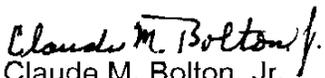
16 SEP 2003

REPLY TO
ATTENTION OF

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Field Artillery Ammunition Support Vehicle (FAASV) Recapitalization Program Baseline (RPB) Approval

1. The Program Executive Officer (PEO) conducted a Decision Review of the FAASV Recapitalization Program and validated it pending final approval of the RPB by the Army Acquisition Executive/Vice Chief of Staff, Army. The FAASV RPB (Tab A) is submitted for review and approval by the Army Acquisition Executive/Vice Chief of Staff, Army. The November 7, 2001, memorandum (Tab B) from Military Deputy to the Assistant Secretary of the Army (Acquisition, Logistics and Technology) tasked the PEO to comply with the RPB guidance. The March 7, 2003, memorandum (Tab C) from the Cost and Economic Analysis Center validates the methodology used for the Recapitalization cost estimate.
2. In accordance with the Army Recapitalization Management Policy, FAASV RPB, dated March 2003, is approved for implementation. The PEO and Project Manager will execute all rebuilds for the FAASV in accordance with the funding and schedule baselines documented in the RPB. The RPB will provide the basis for sound management and a historical record from which to measure success.
3. It is imperative that we work together and establish close partnerships at all levels to ensure success. Our warfighters depend on this recapitalization effort to maintain system readiness, sustainability, and combat overmatch as we transform the Army.
4. The point of contact for this matter is LTC Steve Cummings, commercial 703-604-7162, DSN 664-7162, or e-mail: steve.cummings@saalt.army.mil.


Claude M. Bolton, Jr.
Army Acquisition Executive


JOHN M. KEANE
General, United States Army
Vice Chief of Staff

Enclosures

SUBJECT: Field Artillery Ammunition Support Vehicle (FAASV) Recapitalization
Program Baseline (RPB) Approval

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THE GENERAL COUNSEL, ATTN: SAGC

DEPUTY CHIEF OF STAFF, G-4, ATTN: DALO-SM

DIRECTOR, PROGRAM ANALYSIS AND EVALUATION, ATTN: DACS-DPZ-A

DIRECTOR, U.S. ARMY COST AND ECONOMIC ANALYSIS CENTER,
ATTN: SAFM-CA-ZA

COMMANDERS:

U.S. ARMY MATERIEL COMMAND, ATTN: AMCRDA-AM

U.S. ARMY TANK-AUTOMOTIVE AND ARMAMENTS COMMAND, ATTN: AMSTA-CG

PROGRAM EXECUTIVE OFFICER, COMBAT SUPPORT/COMBAT SERVICE
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