

Field Artillery Ammunition Support Vehicle (FAASV)  
(M992A2) System Plan  
Current as of January 10, 2003

M992A2 FAASV Program Background.

The M992 FAASV was designed to replace the M548 Carrier Cargo, Full Tracked, which had trouble maneuvering in rough terrain and lacked sufficient horsepower to keep pace with the M109 Self-Propelled Howitzers. Based on the M109A2 Chassis, the FAASV was designed to provide both ballistic protection for the crew and ammunition and combat mobility equivalent to that of the M109 Howitzer. Following the production of the basic M992, an additional 125 new production vehicles were built. The new upgraded system, dubbed the M992A1, included a low heat rejection engine, modified propellant storage, and other improvements. In 1993, a materiel change program was initiated to upgrade the existing M992 and M992A1 FAASVs to the M992A2 configuration. From 1996-2001, an additional 138 M992A2 new vehicles were built to bring the fleet quantity to 927.

The operational concept in place in the early 1980s when the FAASV was developed included the transfer of a complete FAASV load of ammunition (90 rounds, 90 propellant bags) at a single fire point. It also envisioned a surge fire capability of 500 rounds transferred per vehicle per day. In its current role, with the M109A6 Paladin, the FAASV typically involves transfer of quantities under 20 each per re-supply mission as the vehicles operate in a shoot and scoot mode. The FAASV is organic to heavy armored divisions, separate heavy brigades and armored cavalry regiments. The FAASV normally operates on a one-for-one basis with the M109A6 Paladin. Currently there are 927 FAASVs versus 975 Paladins. Average age of the FAASV fleet in FY02 was 12 years.

The M992A2 FAASV Recapitalization (RECAP) program is a Focused RECAP for 126 FAASVs between FY03 and FY06. The program will address an existing requirement to overhaul/rebuild a growing quantity of Combat Vehicle Evaluation/Overhaul qualified FAASVs. The program will maximize vehicle availability within an already limited fleet by returning vehicles to users. The program consists of two initiatives. The first is an OMA-funded rebuild of the FAASV to a near zero hour/mile condition. The second is PA funded selected up-grades of the FAASV that will incorporate changes necessary for the system to operate on the battlefield in the future as well as address Operation and Support (O&S) cost drivers.

The following identifies the selected up-grades and the benefits associated with each one for the FAASV program:

Ten KW APU: Up-powered Auxiliary 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 O&S cost savings with a modern reliable system.

MACS: Modular Artillery Charge System (MACS) integrates the stowage and transfer requirements for the M231 and M232 MACS charges and the XM982 projectile into the FAASV. 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. 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 GPS Receiver (DAGR) integration provides required mounting and power integration for the DAGR, which will replace Precision Lightweight GPS 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.

#### M992A2 FAASV Recapitalization Plan.

The FAASV RECAP program will rebuild 126 vehicles that have been qualified by the Combat Vehicle Evaluation (CVE) team for overhaul. The RECAP vehicles will fill existing shortages and replace vehicles within the Active and Reserve Components as they qualify as CVE/Overhaul candidates. The program will be performed at Anniston Army Depot (ANAD) and managed by PM Paladin/FAASV.

The program was provided FY02 RECAP Sustainment System Technical Support (SSTS) funds in May 02 to initiate the engineering and logistics analysis necessary to develop the RECAP Scope Of Work (SOW) from existing overhaul criteria. The analysis is being conducted as a team effort with members from PM Paladin/FAASV, Defense Logistics Agency (DLA), VSE Corporation (FAASV STS contractor), Detroit Diesel (Original

Anniston Army Depot (ANAD) and U.S. Tank-automotive and Armaments Command (TACOM's) Commodity Business Unit (CBU) and the Tank-Automotive Research Development and Engineering Center (TARDEC). The RECAP Statement of Work (SOW) verification will be accomplished on a pilot FAASV scheduled for the 1<sup>st</sup> and 2<sup>nd</sup> quarters FY03 at ANAD. In FY03, RECAP SSTS funding will be used to finalize the Statement of War (SOW) and produce the final National Maintenance Work Requirements (NMWRs). Induction of the balance of FY03 vehicles will be dovetailed into the end of the existing M109A6 Paladin Production line in the 3<sup>rd</sup> QTR FY03.

Rebuild at ANAD consists of the tear-down and overhaul of all major assemblies of the FAASV (i.e., engine, transmission, final drives), the reconditioning/replacement of assembly components to OEM standards, the replacement of 100% of the track, road wheels, sprockets, torsion bars, shock absorbers, batteries, electrical harnesses, etc. Selected Engineering Change Proposals (ECPs) to baseline fleet configuration (i.e., Paladin common torsion bars and Paladin common lower fuel cell), along with the insertion of new technology, (i.e., up-powered auxiliary power unit (APU), Modular Artillery Charge System (MACS) changes, battery guard, DAGR integration, and CFC elimination). This will provide an improved and near zero-mile/zero-hour end-state for each vehicle.

This initiative contains performance based measurements that will be used to track failure data and will form the basis for high level tracking. Additionally, this initiative develops a unique performance based agreement between all involved organizations, and signatories as to what is expected from each organization to meet the intended outcome of the agreement. The measurement will allow the Army to gauge the benefits of the RECAP program within a select portion of the fleet, determine adjustments/improvements, and show how this would affect the entire fleet performance if enacted.

#### Method of Performance Measurement

PM Paladin/FAASV will provide serial number, gaining unit, and vehicle location information for all Recapitalized FAASVs to the Business Process Improvement Directorate (BPI) and the U.S. Army Material Systems Analysis Activity (AMSAA). The BPI, in coordination with PM Paladin/FAASV, will use the Army Recapitalization Tracking Information System (ARTIS) to track FAASV RECAP performance using information gathered and provided by AMSAA from Operating and Support Management Information System (OSMIS), Sample Data Collection/Field Exercise Data Collection (SDC/FEDC), and Automatic Identification Technology (AIT).

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) and obtain the projected Mean Time Between Replacement rates (hours & miles) identified.

Data Source: The OSMIS database, SDC/FEDC (limited to Fort Hood, Fort Stewart, and ANAD), is the historical data source for the table below. In the future, once funding and training is provided, AMSAA will use OSMIS, SDC/FEDC and AIT data sources to gather FAASV RECAP performance data to compare against the objective.

FY 97-00 Top Ten Cost Drivers

Component	National Stock Number	Current Cost per Mile Per 100 FAASV Systems	Projected Recapped Cost per Mile Per 100 FAASV Systems
Engine Diesel	2815-01-335-4579	\$2.95	\$2.33
Track Shoe	2530-01-346-9233	\$1.76	\$1.76
Engine Generator	2920-01-288-0497	\$1.12	\$0.89
Track Pad	2530-01-353-7500	\$1.03	\$1.03
Seven pound AFES Bottle	4210-01-269-8376	\$0.82	\$0.64
Sensor Assembly	5905-01-210-0301	\$0.68	\$0.53
APU Starter/Generator	2920-00-795-6627	\$0.60	\$0.48
Transmission	2520-01-413-1885	\$0.53	\$0.42
Thermal Resistor	5905-01-208-3393	\$0.51	\$0.40
APU Engine, Onan (being replaced)	2815-01-175-7342	\$0.49	N/A
APU Engine, Hatz (replacing Onan for Recap)	2815-01-446-3500	N/A	\$0.38
TOTALS		\$10.52 per Mile	\$8.86 per Mile

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

FY 97-00 Top Ten Cost Drivers  
Continued

Component	National Stock Number	Projected Recapped Measurement MMBR/MHBR *	Current Cost Per Mile for Entire Fleet to Include M109 FOV	Current OSMIS MMBR for Entire Fleet to Include M109 FOV
Engine Diesel	2815-01-335-4579	1200 MHBR	\$1.69	22,182
Track Shoe	2530-01-346-9233	5,000 MMBR	\$1.15	130
Engine Generator	2920-01-288-0497	200 MHBR	\$0.52	3,083
Track Pad	2530-01-353-7500	1,000 MMBR	\$0.67	15**
Seven pound AFES Bottle	4210-01-269-8376	2,500 MMBR	\$0.80	2,185***
Sensor Assembly	5905-01-210-0301	2,500 MMBR	\$0.49	2,843
APU Starter/Generator	2920-00-795-6627	200 MHBR	\$0.39	9,069
Transmission	2520-01-413-1885	15,000 MMBR	\$1.46	54,275
Thermal Resistor	5905-01-208-3393	2,000 MMBR	\$0.42	2,748
APU Engine, Onan (being replaced)	2815-01-175-7342	N/A		N/A
APU Engine, Hatz (replacing Onan for Recap)	2815-01-446-3500	200 MHBR	N/A	

\* Includes NIIN 01-353-7500 and 00-397-3302

\*\*\* Includes NIIN 01-269-8376 and 01-208-6970

All signatories agree to the following:

- a. This is a living document and is current as of January 10, 2003.
- b. The Methods of Performance Measurements outlined above.
- c. The BPI in coordination with all parties will track results of the M992A2 FAASV Recapitalization performance metrics established in this agreement.
- d. The BPI will supply tracking results to participating organizations via the Acquisition Information Management (AIM) website and tailored reports.
- e. The HQDA BPI will report tracking results to Army Senior Staff.
- f. The PM Paladin/FAASV in coordination with all parties will assist with metric development to be used in tracking execution.
- g. The AMSAA will supply SDC report data to the BPI. AMC will provide independent evaluations and analysis to be conducted by AMSAA.
- h. The warfighters will ensure continued emphasis on accurate data reporting.
- i. The warfighters will facilitate/authorize HQDA/SDC liaison visits when necessary.
- j. Component/sub-component serial numbers, when available, will be linked by the use of the memory buttons prior to fielding.
- k. PM Paladin/FAASV/AMC will provide updates to induction/distribution schedules, performance standards, and baselines when ever necessary to BPI.
- l. The HQDA will furnish funding details as requested, but at least monthly.
- m. The Deputy Assistant Secretary of the Army for Cost and Economics (DASA (CE)) will validate cost and economic analyses of recapitalization efforts that have been reviewed and accepted by the MACOM and Major Subordinate Command cost analysis organizations and perform independent evaluations and analyses when applicable.

AGREEMENT DATE: January 10, 2003

APPROVED BY:

AMC COL Moses Whitehurst Jr./s-October 18, 2002

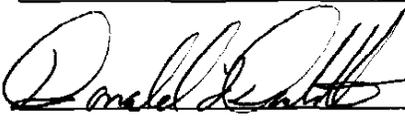
FORSCOM Mr. James DeMartini/s-October 28, 2002  
(Representing Warfighters)

PEO GCS MG Joseph L. Yakovac/s-September 13, 2002

PM Paladin/FAASV Mr. Peteris Jansons/s-September 11, 2002

DASA (CE) Mr. Joe Gordon/s-December 23, 2002

ASA(ALT)

 MAR 11 2003  
*for*